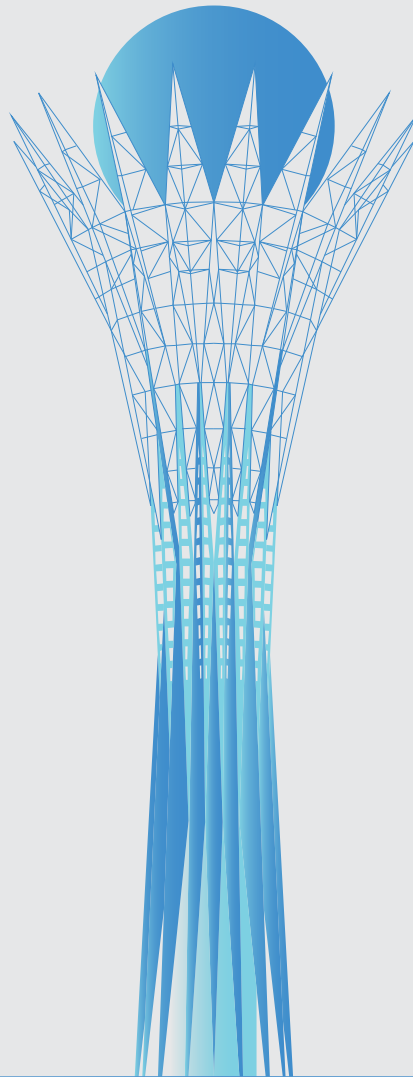


GLOBAL BUSINESS REPORTS

INDUSTRY EXPLORATIONS



KAZAKHSTAN MINING, POWER & CHEMICALS

2016



*Power - Mining - Mining Code - Mono-Cities - Exploration
Production - Equipment - Services - Chemicals*

COLLABORATING FOR NEW INNOVATIONS

Customers are key to our innovation process. We strive to deliver products and services that go above and beyond the most demanding standards, and deliver the best results for our customers - anywhere, anytime.

www.atlascopco.kz

Sustainable Productivity

Atlas Copco

Dear Readers,

Our team at Global Business Reports is delighted to present the following cross-industry analysis of Kazakhstan's mining, power, and chemical sectors. After months on the ground in Almaty, Astana, Karaganda and Ust Kamenogorsk, we have heard from the country's most prominent executives, officials and thought leaders across three distinct but interlinked value chains.

The Central Asian state is endowed with a rich store of natural resources, including oil and a host of metals and minerals. Strategically located at the frontiers of Russia and China, and bearing healthy relations with trade partners across the world including the United States and Western Europe, Kazakhstan has relied on raw material exports to fuel its economy for decades. Yet a fall in oil prices coupled with slowing global growth and geopolitical uncertainty has prompted the state to invest in alternative sources of income and pursue economic diversification. According to the World Bank, the country is likely to grow at an estimated 1.3% this year, down from 4.3% in 2014, highlighting the need for strong policy directives.

The state has articulated its commitment to reform, outlining steps to achieve large-scale development and modernization through two programs of accelerated industrial and innovative development. Furthermore, the Kazakh economic policy, known as Nurly Zhol, outlines plans to stimulate the economy through targeted investments in domestic transport, energy, and industrial and social infrastructure. Following through on these objectives will be key in overcoming the downturn in oil prices and increasing the country's visibility in the global arena. The upcoming Expo 2017, to be hosted in Kazakhstan's capital city of Astana, will be a timely test of the country's commitment to change, as well as an opportunity to showcase the country's non-oil sectorial potential.

Kazakhstan Mining, Power & Chemicals 2016 Industry Explorations strives to provide insights into Kazakhstan's largely undiscovered potential, specifically within the mining, power, and chemical sectors. We hope that investors and policymakers alike will gain insights from our research on the country's ongoing exploration, its commitment to the adoption of renewable energy, and its burgeoning chemical production within newly established special economic zones. Kazakhstan's primary goal to rank among the world's 30 most developed nations by the year 2050 hinges on the success of all three of these key sectors.

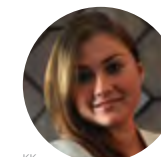
We would like to heartily thank all of our interviewees, as well as the companies, associations and individuals that we have met with for their support and insights.

Sincerely,

Katya Koryakovtseva, Project Director

Lubo Novak, Journalist

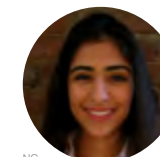
Neha Ghanshamdas, Journalist



KK



LN



NG

Introducing Kazakhstan and its Mining, Power & Chemical Industries

- 8. Canny Kazakhstan: A Brief Political and Economic Overview
- 10. Interview with Ministry of Investment and Development, Republic of Kazakhstan
- 11. Interview with Ministry of Energy, Republic of Kazakhstan
- 13. Steppe-by-Steppe: Can Minerals Help Kazakhstan Diversify Away from Oil and Gas?
- 15. Expert Opinion Article by Michael Wilson & Partners, Ltd.
- 18. Interview with Association of Mining and Metallurgical Enterprises (AGMP)

Coal is King: Kazakhstan's Power Industry

- 22. Tackling Tariffs: Kazakhstan's Slowly Evolving Energy Mix
- 24. Interview with AES Corp., Kazakhstan
- 25. Interview with Central-Asian Electric Power Corporation (CAEPCO)
- 26. Interview with Batys Transit
- 27. Interview with PwC Mining and Power Specialists, Assurance Dept.
- 28. Interview with Det Norske Veritas Kazakhstan
- 29. Interview with ILF Consulting Engineers
- 31. Interview with KB Enterprises

Shaping the Contours of Kazakhstan's Mining Industry

- 34. Transitioning to Privatization, Maintaining Historical Assets
- 37. Interview with Eurasian Resources Group (ERG)
- 38. Interview with Government of Karaganda Region
- 39. Interview with ArcelorMittal Temirtau
- 40. Interview with Kazakhmys Corp.
- 42. Overhauling Kazakhstan's Subsoil Regulations
- 44. Interview with Michael Wilson & Partners, Ltd.
- 45. Interview with Geomark
- 46. Interview with Colibri Law
- 47. Interview with Iluka Resources

The Big Dig: Exploration

- 50. Slowly Attracting International Players: Mineral Exploration in Kazakhstan
- 52. Interview with Altay Polymetals
- 53. Interview with Rio Tinto
- 54. Interview with Syrymbet
- 55. Interview with SRK Consulting Kazakhstan

Spanning the Periodic Table: Production

- 58. Take Your Pick: Mineral Production in Kazakhstan
- 62. Interview with KATCO JV
- 63. Interview with Betpak Dala
- 64. Interview with EuroChem-Karatau
- 65. Interview with Kazphosphate
- 66. Interview with YILMADEN Holding
- 67. Interview with Deloitte

Kazakhstan's Equipment and Service Supply Chain

- 70. Seeking Quality and Infrastructure
- 73. Interview with Atlas Copco Central Asia
- 75. Interview with Borusan Makina Kazakhstan
- 76. Interview with Sandvik Mining and Construction Kazakhstan
- 77. Interview with Kazzincmash
- 78. Interview with Thrane Teknikk
- 79. Interview with AK Machinery
- 80. Interview with Volvo Group Kazakhstan
- 81. Interview with Metso Kazakhstan
- 82. Innovative Service Solutions for Miners in Kazakhstan
- 85. Interview with National Center on Complex Processing of Mineral Raw Materials, Republic of Kazakhstan
- 86. Interview with KazGeotech
- 88. Interview with SGS Kazakhstan and Caspian Sub-Region
- 89. Interview with KPSP
- 90. Interview with RJC Group
- 91. Interview with Orica Kazakhstan
- 92. Interview with MICROMINE & Interview with GeoMineProject (GMP)
- 93. Interview with Leica Geosystems and Hexagon Mining Division

A Rough Road to Diversification: Kazakhstan's Chemical Industry

- 96. Kazakhstan Invests in its Chemical Sector
- 98. Interview with Kazakhstan Petrochemical Industries (KPI) Inc.
- 99. Interview with Corrocoat Caspian
- 100. Interview with Evonik Chimia
- 102. Interview with Chemie & Technology
- 103. Interview with Linde Gas Kazakhstan LLP
- 104. Interview with BASF Central Asia
- 105. Interview with 3M Kazakhstan & Interview with Dow Kazakhstan

Into the Future

- 108. The Way Forward for Kazakhstan and the Global Mining Industry
- 109. Interview with Canada Eurasia Russia Business Association (CERBA)
- 112. Final Thoughts
- 114. Company Index
- 115. Credits

This research has been conducted by Katya Koryakovtseva, Lubo Novak, and Neha Ghanshamdas.

Edited by John V. Bowlus
Graphic design by Gonzalo Da Cunha

A Global Business Reports Publication
For updated industry news from our on-the-ground teams around the world, please visit our website at gbreports.com, subscribe to our newsletter by signing up to our VIP list through our website, or follow us on Twitter: @GBReports

Exclusive Interviews



Government officials, association heads, and industry executives discuss their organizations' strategies and provide insight into the Kazakhstani economy and heralded mining sector.

16, 17, 24, 25, 38, and many more

Editorial Content



Global Business Reports' journalists provide unique insights into all aspects of the power, mining, and chemical industries in Kazakhstan by working on the ground for months.

12, 22, 32, 40, 48, 56, 70, 82, 96, 108

Quantitative Data and Maps



Quantitative data and maps help readers to better understand the underlying trends across all levels of the value chain in Kazakhstan's power, mining, and chemical industries.

8, 9, 12, 13, 22, 23, 56

Expert Opinion



Market actors provide deeper insight into the most important topic facing the mining sector: the revision of the mining code.

15

Future Outlook



Kazakhstan's variety and depth of mineral reserves makes it one of the most important jurisdictions on the planet. Companies share their visions for the future of the industry.

112, 113



INTRODUCING KAZAKHSTAN AND ITS MINING, POWER, AND CHEMICAL INDUSTRIES



“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 the mining industry in Kazakhstan.”

- Albert Rau,
Vice Minister,
Ministry of Investment and Development,
Republic of Kazakhstan

CANNY KAZAKHSTAN

A Brief Political and Economic Overview



●●● Kazakhstan is no stranger to international attention for its raw materials, and it knows how to play the game. This massive country at the heart of Asia is not only replete with natural resources, including oil and gas and, as this report highlights, minerals, but it also has vast experience of trading and working with outsiders. Moreover, Kazakhstan has already demonstrated that it can produce healthy economic growth without depending on its vast subterranean wealth. In 2014, GDP growth was 4.3%, despite the plunge in world oil prices. Growth is expected to slow to 1.5% in 2015, but the World Bank and International Monetary Fund both predict recovery in 2016 and 2017. Now, Kazakhstan is embarking on a strategy to further diversify its economy from raw materials into other value-added industries.

Yet oil and gas will still constitute the bulwark of Kazakhstan's economy in the medium term. Kazakhstan first began producing oil in 1911, when it was part of the Russian Empire, but production mostly stagnated for the next several decades, barely eclipsing the 500,000-barrels per day (bpd) mark. The dissolution of the Soviet Union in 1991, however, refocused the attention of international oil companies (IOCs) on the newly independent states in Central Asia, including Kazakhstan, in the hopes of gaining a foothold in the forthcoming bonanza of oil and gas production. In 1992, Kazakhstan produced 443,000 barrels per day (bpd) of oil but by 2015, this figure had climbed 1.7 million bpd. During the same period, gas production rose from 286 billion cubic feet (bcf) to 720 bcf. Kazakhstan's 30 billion proved barrels of oil reserves

KAZAKHSTAN AT A GLANCE

Source: CIA World Factbook

Population: 18,157,122 (July 2015 est.)

Land Area: 2,724,900 sq km

Official Language: Kazakh

Capital: Astana

Chief of State: President Nursultan Nazarbayev (since 1991)

Head of Government: Prime Minister Karim Masimov (since 2 April 2014)

GDP (PPP): \$418.5 billion (2014 est.)

Growth Rate: 4.3% (2014 est.)

GDP per Capita: \$24,000 (2014 est.)

GDP Composition by Sector: 4.9% agriculture, 29.5% industry, 65.6% services (2014 est.)

Exports: \$87.25 billion (2014 est.): oil and oil products, natural gas, ferrous metals, chemicals, machinery, grain, wool, meat, coal

Imports: \$47.56 billion (2014 est.): machinery and equipment, metal products, foodstuffs

Major Trade Partners: Russia, China, Germany, France, Italy, Greece, Romania

\$24,000

GDP PER CAPITA 2014

Source: CIA World Factbook

KAZAKHSTAN GROWTH VS. INFLATION (2007 TO 2016)

Source: International Monetary Fund



ranks second among former Soviet republics after Russia, and its oil production ranks 18th in the world.

Having become a major oil and gas-exporting country has given Kazakhstan weight in global energy markets and attracted the interest of world powers in search of energy security. China and Western Europe are excellent markets for consuming Kazakh hydrocarbon exports; Russia also seeks to cooperate and collaborate with Kazakhstan on energy. Transnational oil pipelines allow Kazakh oil to reach China, Russia, and the Black Sea, and transnational gas pipelines link Kazakh gas to Russia, and ultimately Ukraine, as well as Uzbekistan and Turkmenistan. Plans to build additional gas pipelines to China and India are still in the proposal stages, but speak to the country's ambitions as well as the global thirst for energy. Most forecasts predict that world demand for natural gas will continue to rise, and, if these plans come to fruition, Kazakhstan will be better positioned to compete for market share than more expensive liquefied natural gas coming from Qatar, Australia, or the United States.

Kazakhstan has experienced political stability since independence, which has been a key ingredient in its two-decade rise and will be critical to executing its strategy to foster economic competitiveness in other spheres. In office since 1991, President Nursultan Nazarbayev was reelected in April 2015 with nearly 98% of the vote. The continuity of leadership will ensure that Nazarbayev's Kazakhstan 2050 Strategy, a series of economic, social, and political reforms that were launched in 2012 and de-

signed to make Kazakhstan one of the world's 30 largest economies, continues. A key pillar of this strategy is identifying new sectors for the country to develop and attract foreign investment and new partnerships for Kazakhstan to grow its exports. Then, in 2014, Nazarbayev introduced "Nurly Zhol" (Bright Path), a new economic policy that envisions massive state investment in infrastructure over the next several years. The top-down approach has yielded success in managing the economy in the past, and casting reforms over such a long period of time could either be the right approach to foster gradual reform, or devolve into inaction. Only time will tell.

In its trade relations, Kazakhstan is also building outward. In May 2014, it joined the Eurasian Economic Union (EEU) with Belarus and Russia, with Armenia and Kyrgyzstan acceding to the union in 2015. The EEU represents a single, integrated market of 183 million people and has provisions to expand from a trading bloc into a monetary union in the future. Kazakhstan is already a member of the Commonwealth of Independent States, the Economic Cooperation Organization, and the Shanghai Cooperation Organization.

The same shrewd and patient decisionmaking and alliance building that has characterized the country's first 25 years is likely to continue for the foreseeable future and help Kazakhstan to continue to increase its production of raw materials, bolster its ancillary services, and develop entirely new homegrown industries. In one of the oldest parts of the world, time is on Kazakhstan's side. •

ENERGY CONSUMPTION BY FUEL (2012)

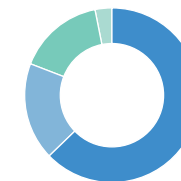
Source: U.S. Energy Information Administration

30 Billion Barrels PROVED OIL RESERVES 2015

85 Trillion Cubic Feet PROVED NATURAL GAS RESERVES 2015

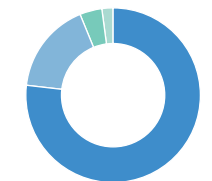
Source: U.S. EIA.

- Coal
- Oil
- Natural Gas
- Hydro



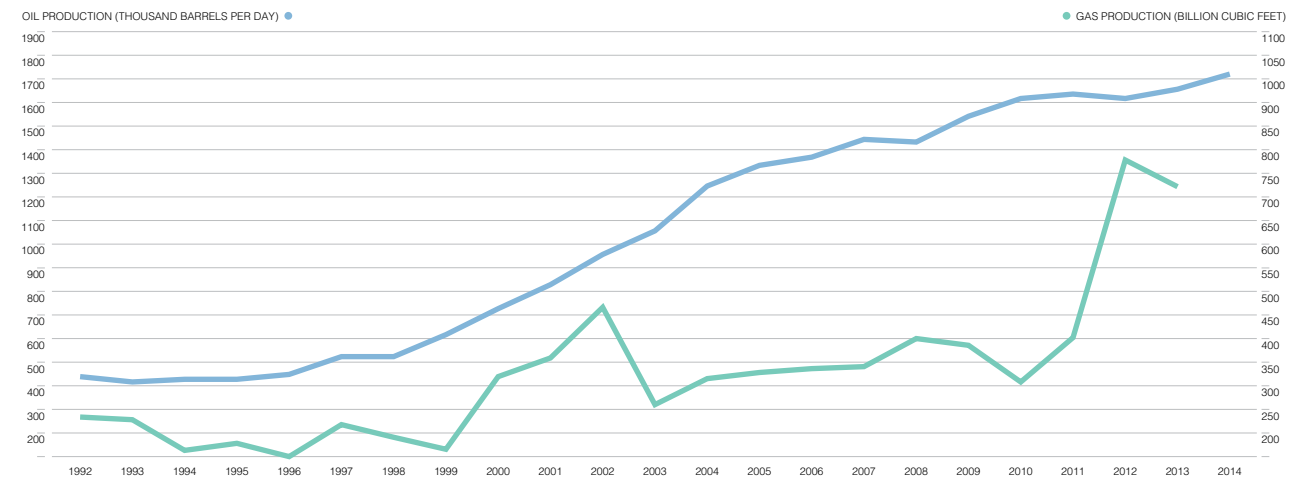
CRUDE OIL EXPORTS BY DESTINATION

Source: U.S. Energy Information Administration



KAZAKHSTAN OIL AND GAS PRODUCTION (1992 TO 2014)

Source: U.S. EIA.





Albert Rau

●●● Vice Minister
MINISTRY OF INVESTMENT AND DEVELOPMENT, REPUBLIC OF KAZAKHSTAN

●●● **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 governed the mining industry for the past five years. It continuously supports the industry and provides a resource base and energy resources, works on lowering tariffs for railway transportation, and provides other incentives for further development of the mining sector. Moreover, the ministry is continuously improving legislation, so that it can reduce unnecessary administrative barriers.

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 the government has prioritized their development, as well as the mining facilities, over 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 to 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 decisionmaking and 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.

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 such events 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?

It is a challenge to find 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 in the 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 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 do you expect in the next three 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. •



Bakytzhan Dzhaksaliyev

●●● Vice Minister
MINISTRY OF ENERGY, REPUBLIC OF KAZAKHSTAN

●●● **What is the role of the Department of Electric Energy within the Ministry of Energy?**

The Department of Electric Energy is one of the key departments within the Ministry of Energy of Kazakhstan. The main aim of the department is to define and implement the government's policy in the electric energy sector. Functions of the department include: ensuring definition and implementation of government policy in the electric energy sector; developing legal regulations regarding the implementation of government policy in the electric energy sector; implementing strategic programs to achieve goals in the electric energy sector; and developing program documents within the department's competence.

Today Kazakhstan generates enough power to meet its domestic demand, but continues to import electricity to offset supply gaps and regulate frequency.

What actions are being taken to promote energy efficiency in the country?

Kazakhstan has sufficient energy sources to meet domestic demand and does not need to import power. Electricity is generated by 76 power plants, with a total capacity of 16.9 gigawatts. However, it is necessary to ensure stable power supply during peak electricity load hours, which is done by simultaneous operation of Kazakhstani, Russian and Central Asian energy systems. As of 2014, the total amount of imported power reached 644.2 million (kilowatt hours) kWh, while exported power totaled 2,918.5 million kWh. It is necessary to mention that Kazakhstan's power sector has export potential.

Existing power plants are being revamped, and construction of new power plants is soon to begin. The national power grid is also being revamped, along with regional power grids. In line with the national Nurly Zhol program, new transmission lines will be built to ensure consistent power supply and connect Ekibastuz, Semey and Ust-Kamenogorsk and Semey, Aktogay, Taldykorgan and Almaty. At the same time, the government continues to support individuals living in remote areas without access to the country's power grid by reimbursing 50% of their expenses on renewable power produced in Kazakhstan.

What is the estimated amount of foreign direct investment in the reconstruction and modernization of power generating facilities?

As of today, such foreign investment is not substantial. Kazakhstan creates mechanisms to attract domestic investment to revamp existing power plants and construct new facilities.

What role will Kazakhstan play in developing the greater CIS region's power sector?

Kazakhstan has enormous export potential. The treaty forming the Eurasian Economic Union was signed in May 2014, and a common power market is scheduled to be created in 2019. To achieve this, a conception on the common power market was adopted in May 2015, and a program for the creation of a common power market will be developed by July 1, 2016. Parties to the treaty have decided to provide each other with free access to power grids until 2019 in order to ensure transmission between all

the member states. All of these factors create premises to increase Kazakhstan's export potential within the common market.

Kazakhstan is the world largest uranium producer and has recently approved plans for construction of a nuclear power plant this past May. What role will nuclear power play in Kazakhstan's energy mix in the long run?

The country's large uranium deposits inspire great potential for the development of nuclear power generation. Furthermore, the drive for the development of nuclear science and high technologies, as well as the projected positive impact on the environment that is associated with a reduction in hazardous emissions, all make it necessary to build a nuclear power station in Kazakhstan.

The government of Kazakhstan has set a 3% renewables target by the year 2030. Given that coal-fired plants generate approximately 65% of the power in the country currently, what measures are in place to promote the transition to renewable energy?

Kazakhstan's government has set a number of targets to drive the development of a renewable energy segment, which calls for implementing measures to realize them. However, given that these energy sources rely heavily on weather conditions and are not reliable, their use requires a sensible approach.

How do you think the power sector will develop in the coming three to five years?

In 2014, Kazakhstan adopted the 2030 Fuel and Energy Sector Vision. According to this vision, further modernization of the power market will ensure sustainable development of the sector. The vision's power market model will ensure transparent and adequate tariffs in the long run and will improve the sector's attractiveness to investors. Power plants and the overall grid will be further revamped, new power plants launched, ties between northern and southern Kazakhstan strengthened, and local talent and good practices further developed. In line with the ministry's estimates, it is necessary to attract significant capital to the sector over the period from 2016 to 2020, as demand for power is expected to increase by 2030. •

MINING INVESTMENT ASIA 2016

13 - 15 APRIL
Marina Bay Sands, Singapore

SOUTH EAST ASIA'S ONLY GLOBAL FORUM FOR MINING EXPLORATION, INVESTMENT, TECHNOLOGY & PRODUCTION PROFESSIONALS

KEYNOTE SPEAKERS



Robin Griffiths
Chief Technical Strategist
ECU Group, UK



James Turk
Founder & Director
GoldMoney Inc, Canada



Dr. Keith Weiner
CEO
Monetary Metals, USA



Nick Giambruno
Senior Editor
Casey Research, USA



Prof. Ian Plimer
Director
Hancock Prospecting, Australia

**EXPLORE.
STRIKE.
PROFIT.**

Silver Sponsor



Associate Sponsor



Project Spotlight Sponsors



Limited Speaking & Sponsorship Opportunities are Available

Daniel Radziszewski
daniel.radz@spire-events.com
+65 6717 6018 / 9649 1062

www.mininginvestmentasia.com



STEPPE-BY-STEPPE

Can Minerals Help Kazakhstan Diversify Away from Oil and Gas?

••• Kazakhstan, the largest land-locked country in the world, is sparsely populated and mostly covered by flat steppe. Yet in the last two decades, the country has come to play an outsized role in the global economy due to its abundant reserves of oil and gas. Unsatisfied to languish as a petrol-state, Kazakhstan is now looking to grow and diversify its economy and escape the middle-income trap and the mining, power, and chemical industries offer strong opportunities for the government to achieve this goal. Of these three, the mining industry offers the strongest prospects and is the focus of this report, but power and chemicals should not be overlooked in their own right, not least because they are intertwined with Kazakhstan's mining and oil and gas industries.

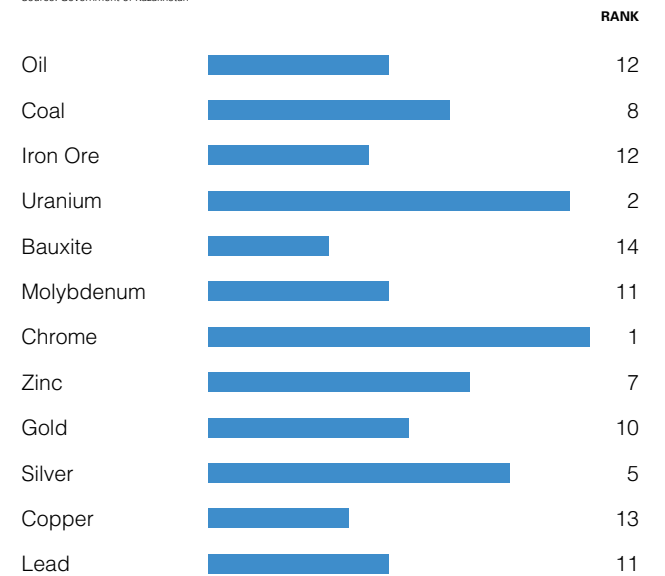
There are sound reasons to believe that Kazakhstan will succeed, as the country has demonstrated a steady arc of economic growth and development over the past two decades. In 2002, Kazakhstan became the first CIS country to be labeled investment-grade by a major credit rating agency. Its GDP currently stands at about \$200 billion making it the largest in Central Asia. Kazakhstan pursues a multi-vector foreign policy approach, meaning that it aims to develop friendly relations with all of the world's powers. China accounts for 22.7% of exports with Russia and Germany at 8% each. On January 1, 2015 the Treaty on the Eurasian Economic Union (EEU) came into force. The EEU has an integrated single market of 183 million people and a GDP of over \$4 trillion. The union introduces the free movement of goods, capital, services, and people and provides for common transport, agriculture, and energy policies. Kazakhstan also finalized negotiations to join the World Trade Organization and has become a full-fledged member on July 27, 2015. In 2017, its capital, Astana, will host the International Exposition, EXPO 2017, helping to further increase the country's image on the world stage.

Looking Underneath

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 already contributes around 20% to the country's GDP and represents about 19% of its 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 substantial reserves of zinc. Almost all gold mining companies and properties have been fully privatized in Kazakhstan. The country is estimated to contain 30% of the world's reserves of chrome, 25% of manganese, 10% of iron ore, 10% of copper and 13% of lead and zinc.

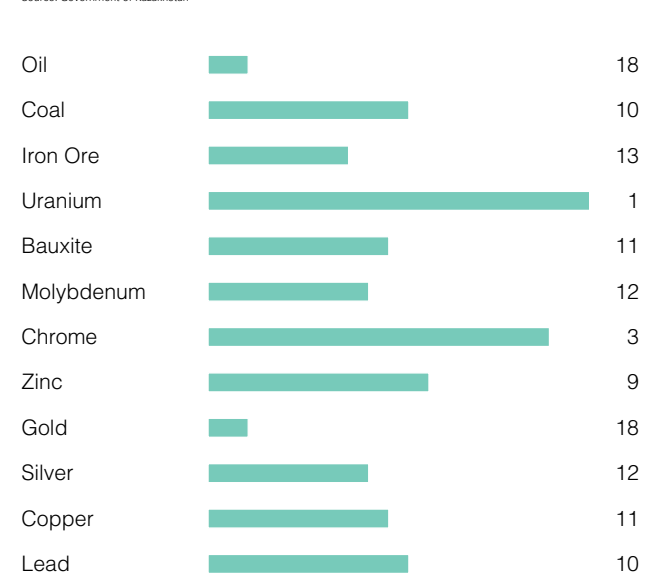
KAZAKHSTAN'S WORLD RANKING FOR NATURAL RESOURCES RESERVES

Source: Government of Kazakhstan



KAZAKHSTAN'S WORLD RANKING FOR NATURAL RESOURCES RESERVES

Source: Government of Kazakhstan



Kazakhstan is also the largest producer of uranium as of 2009, and was responsible for 38% of global production in 2013. To top all this, Kazakhstan's substantial mineral resources include the world's largest vanadium, bismuth and fluorine deposits, while the country is also richly endowed with chromium, bauxite, coal, phosphate, titanium and tungsten.

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 of excellent quality, 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.

Overall, the lack of new exploration is the biggest problem facing Kazakhstan's mining industry. One recent announcement, however, may encourage others to enter the country. Rio Tinto and Kazgeology are investing \$6 million in the exploration of copper porphyry ore in the Korgantas area in the Karaganda province. While other mining majors have left Kazakhstan after encountering significant challenges, Rio Tinto has decided to stay and continues to conduct exploration activities. If this is successful and the Kazakh govern-

In 2014, the share of export to China was about 80% of the total volume. Today, this share has decreased to 64%, and we see that the situation has changed in China mainly due to internal politics and external factors. In this light, we are looking for new off-take markets.

*- Bakhtiyar Krykpyshev,
General Director,
Kazakhmys Corp.*

ment 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. 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. Tau-Ken Samruk, which consolidates all of the state-owned mining holdings with the goal of increasing efficiency and investment in exploration, will be responsible for much of this expenditure. Partnering with Tau-Ken

CERBA Canada Eurasia Russia Business Association
The Voice of Canadian Business in Eurasia
 www.cerbanet.org

The Canada Eurasia Russia Business Association was founded in 2004 with a mandate to enhance and support trade, investment and good relations between Canada and the countries of Eurasia. CERBA is a non-for-profit organization with a network of over 140 corporations and seven chapters: in Almaty, Calgary, Montreal, Moscow, Ottawa, Toronto and Vancouver. CERBA provides an extensive network in the private and public sectors, produces business events and annual trade missions, advocates with the Canadian and Eurasian informative seminars, market intelligence, and a quarterly printed Newsletter; and manages sector-based committees to promote partnership between CERBA members and their Eurasian counterparts.

BARRICK BOMBARDIER Sawatzky EUROCHEM DENTONS KINROSS NetCracker NORTON ROSE FULBRIGHT
onexim group Petro Kazakhstan BCF BUSINESS LAW QIWI pwc SNC-LAVALIN gowlings bühler

opens doors to dealing directly with the government that can certainly help speed up a new entrant's approval process.

Kazakhstan is mainly focused on the extraction and export of its raw materials, with higher value-added processing done abroad, but this has been slowly changing. Although Russia has been Kazakhstan's main partner historically, China is currently the main off-take market for its mining exports, despite the recent minor slowdown in China, which is causing some uncertainty among Kazakh companies. "In 2014, the share of export to China was about 80% of the total volume. Today, this share has decreased to 64%, and we see that the situation has changed in China mainly due to internal politics and external factors. In this light, we are looking for new off-take markets," said Bakhtiyar Krykpyshev, general director of Kazakhmys Corp.

As mentioned previously, 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: "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."

Kazakhstan's mining industry is set to grow in value, reaching \$30 billion by 2017, even when accounting for the decline in commodity prices. Coal, copper and gold are expected to be the main drivers of growth, but Kazakhstan will need substantial foreign investment to make this a reality; capital, as well as technology and technical know-how, will be necessary to bring about these developments. Inadequate infrastructure is another reason why Kazakhstan lags behind other mining destinations. 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 to provide services not further than 500 km from these three cities. Often 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. As Kazakhstan prepares to undertake changes to its legislation, new explorers are expected to enter the country and in combination with its natural riches, Kazakhstan is on the road to great prosperity.

Again, the [new mining code] has not been approved and signed into law as yet, so we are still in the waiting phase of this evolution process. However, in preparation for its enactment, we are seeing more and more interest in the country's potential with people coming to town 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.

*- Terrance Powell,
Almaty Advisory Board Chairman,
Canada Eurasia Russia Business Association (CERBA)*



Image: Atlas Copco

Global Oil&Gas

15th North Caspian
Regional Atyrau Oil&Gas
exhibition and conference

12-14 April 2016
Atyrau Sports Complex
Atyrau, Kazakhstan

подробная информация:
www.oil-gas.kz

More to Come

Kazakhstan is holding a number of events, such as the Astana Mining and Metallurgy Congress in June 2015, Mining World Central Asia in September 2015, and Minex Central Asia in April 2016 to increase its visibility on the world stage. Significant work remains to be done to transform the country into a booming mining destination, ranging from legislative and regulatory framework to ensuring continued political stability in the foreseeable future, as well as the development of 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 destination. Once an upturn in the prices of commodities occurs hopefully in the not-too-distant future, Kazakhstan is looking to greatly benefit from an improved investment climate, as a result of its government's hard work.

Once the mining code is implemented, Kazakhstan will keep creating more opportunities. "Again, the legislation has not been approved and signed into law as yet, so we are still in the waiting phase of this evolution process. However, in preparation for its enactment, we are seeing more and more interest in the country's potential with people coming to town 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 Canada Eurasia Russia Business Association (CERBA). Kazakhstan is open for business and Kazakhs, for their part, are hoping the message is getting out there. It is of crucial importance to bring back the majors as well as the juniors. When the time is right, Kazakhstan will be ready to claim its rightful spot among the world's foremost mining jurisdictions. •

THE AUGUST 2015 DEVALUATION

The summer of 2015 will be remembered in Kazakhstan for its unbearably high temperatures; the mysterious deaths of the country's most beloved animals, the saigaks; and Thursday August 20, the day that the Kazakh tenge lost 26.2% of its value against the U.S. dollar overnight, falling to 255.26. Such was the response to the Central Bank's decision to no longer control the currency and let it float freely in currency markets, which it justified as increasing the competitiveness of Kazakh exports and thus helping to grow the overall economy.

This devaluation was not at all unexpected, and speculation had slowed production rates and decreased investor confidence in recent months. In addition, Kazakhstan's two largest trading partners experienced financial problems of their own—the Russian ruble has tumbled over the past several months and the Chinese yuan was devalued in August. Perhaps it was only natural for the tenge to follow.

The long-term impact of the devaluation is unknown, but the short-term effects are fairly obvious. Kazakhstan's export goods became significantly cheaper on foreign markets. Given that mining and metallurgical products account for about 20% of country's total exports, the industry will profit, and some companies have already raised their share prices. Kaz Minerals, for example, showed a 13.9% rise on the day of devaluation. The euphoria was short-lived, however, as the share price fell to 77.75 by September 29.

Naturally, cheaper exports are only one side of the story. For a country like Kazakhstan, which imports most of the equipment used in mining, the cost-pressure will be felt very soon. Gerard Fries, general director of Kazakh-French JV KATCO confirms: "As far as devaluation is concerned, there are two sides. Given that KATCO is selling a commodity at price in U.S. dollars and costs are mainly denominated in tenge, devaluation mathematically improves our

cost of production. However, not all equipment is local, implying that there is an impact on imported goods and materials, which we are expecting to see very soon."

Previously, Kazakh industry suffered from a weaker Russian ruble and a decrease in demand for locally produced goods, as production in Russia became significantly cheaper. Evidently, devaluation of tenge will bring more balance into this equation and more demand back to Kazakhstan. According to Alexandra Tuzhilina, finance manager of Linde Gas Kazakhstan, "Our market is now competitive with Russia again, meaning that our local consumers will shift from Russian products to local products. This is beneficial, because some of our customers were buying products from Russia. We also expect more activities from export-oriented local producers."

Mining and exploration companies' balance sheet will be affected, but perhaps not as strongly as one might anticipate. With the majority of the profits denominated in tenge, and major investment in U.S. dollars, the income will essentially remain unchanged, meaning imports will not become more expensive for these companies. What will change, however, are labor costs, which have become significantly cheaper, and will need to be adjusted in due course.

One of the biggest issues in Kazakhstan prior to the devaluation was the incredibly high cost of transportation due to the country's vast territory and lack of a well-developed infrastructure. "For now, costs have remained the same. The government will try to keep prices at the current level, but we know this is temporary. In one or two months transportation costs will increase, especially given the free floating cost of fuel," said Aikyn Urkimbaev, managing director of Agility Kazakhstan. U.S. dollar-denominated petrol became less expensive, but most of Kazakhstan's petrol is imported from Russia, hence the new price will depend on the ruble's behavior in the medium-term. This will create more pressure for local producers and the price advantage created by devaluation might just as well disappear thanks to the higher transportation cost.

The economics of the 2015 devaluation are not as unfavorable to the mining industry as the 2014 devaluation, and the currency crisis may serve as a catalyst to improve efficiency and achieve greater cost optimization in the mining sector. Kazakh mining practices are often described as too labor-intensive, and automation might be the next big step for local companies. •



Nikolay Radostovets

Chairman
ASSOCIATION OF MINING AND METALLURGICAL ENTERPRISES (AGMP)

●●● How has Kazakhstan's mining sector changed over the past five years?

Due to lower metals prices, companies have reduced their production output, and there is also less demand from China and Russia. We are facing some difficult times, and while we thought that this was caused by a temporary reduction in prices, but now we realize that this situation will persist well into 2015 and 2016. The government understands that many mining companies will not be able to handle this pressure and will require assistance. In this light, the government introduced a number of measures to help such companies, for example zero rate on severance tax at underperforming deposits of ERG, Kazakhmys, Kazzinc, Kazatomprom etc. Because of lower demand in China and Russia, Kazakh companies are also forced to look for new off-take markets, while the government is helping these companies by developing new corridors for transportation.

President Nazarbayev renewed his term and introduced a new program where he outlines five institutional tasks, one of which is concerned with the improvement of the mining sector. In the framework of this program, a new subsoil code will be created based on Australia's, which will simplify the process of acquiring exploration licenses, clarify tax regime, and make Kazakhstan more attractive for international investors.

How would you assess the willingness of international companies to enter Kazakhstan?

Currently, the government is reviewing the subsoil legislation and we are looking to ensure that it is in accordance with international standards. We are drastically changing the situation with the right of priority which the government has when it comes to geological exploration. Previously, the government had the right to refuse the right to explore to a company, but now the government cannot do that.

What steps should be taken to attract investment in geological exploration, apart from the new subsoil code?

Geological exploration remains one of the least developed sectors in Kazakhstan. The government and industry accept the fact that Kazakhstan is an underexplored country. In the past 20 years, companies have relied on Soviet geological information, which, though of high quality, is not enough to unlock the country's true mineral potential. After the collapse of the Soviet Union, there was no exploration in Kazakhstan, as companies were more interested in developing other industries and technologies. Luckily now, the situation has changed. First of all, the government created Kazgeology, an organization responsible for geological exploration in the country. Secondly, a special state organization was created, and now the government spends money on geological exploration. These changes make it easier for private enterprises to take part in geological exploration, and, at the same time, gain rights to those deposits that they are exploring. We are looking to change the whole relationship system between investors and the government. The Ministry of Investment and Development plays a key role in these relations. This year, the Ministry is supposed to receive money from the budget, and ideally

it will become the operator to handle all approvals and licenses for investors. Kazakhstan's investment attractiveness will also increase after the country enters the World Trade Organization (WTO). WTO membership will show potential investors that it is possible to work in Kazakhstan, and that it adheres to international standards.

One of the key challenges is the lack of qualified professionals. What is the government doing to change this?

For a long time, it was not considered prestigious to work in the mining industry, and today there is a serious lack of specialists. The government understands how crucial it is to develop talent across many spheres, including mining, processing and services. We are working hard to change the perception of the mining industry and to show Kazakhs that working for a mining company is a prestigious career.

Many companies in Kazakhstan often hire non-Kazakhs for highly qualified positions. The government needs to invest in educating and training specialists so that it will be easier for both local and international companies. This will also help attract additional investment. The ministry is closely working with universities, which prepare mining specialists and metallurgists.

How do you see the mining industry developing in the next five years?

We remain optimistic about the future of the mining industry in Kazakhstan, thanks to the numerous changes. The government is actively working to make investors feel more comfortable. For example, if previously it was normal to assume that international investors have to be responsible for infrastructure in adjacent towns, now local officials understand that investors are not obliged to pay for everything.

Besides, we see that production efficiency is also improving. This is happening thanks to integration of new technology and training of personnel. Because of the lower prices for metals, mining companies are forced to lower the cost of production to maintain profitability. Those companies that work in Kazakhstan can maintain competitive advantage compared to other countries. Kazakhstan will play a more important role in the global mining industry going forward. ●

LEGAL REFORMS IN KAZAKHSTAN'S MINING SECTOR

By Michael E. Wilson, Director, and Yermek K. Aubakirov, Senior Lawyer

●●● On January 17, 2014, the President of the Republic of Kazakhstan, Mr. Nursultan Abishuly Nazarbayev outlined his program "Kazakhstan's Way – 2050: One Goal, One Interest, One Future,"¹ which called for major reforms in various fields and industries. One of the major areas of concern was an insufficient level of foreign investment into the subsoil use sector, and the program pointed out the major directions in which the state should embark and the areas in which it should undertake reforms, namely to: increase the effectiveness of the traditional mining sector; adopt new approaches to the management, production and processing of hydrocarbons; maximize the export potential of the energy sector; make decisions on possible future scenarios for oil and gas production; increase the development of rare earth metals; enter the world market for geological exploration; and subsequently attract investments from foreign mining and exploration companies by simplifying the legislation, procedures and practices.

Therefore, during 2014, a joint committee of the relevant Kazakhstan ministries (the Ministry for Investments and Development, the Ministry of Energy, and others) prepared a draft Concept of a new Subsoil Use Code (the "Concept"). It was planned that the Concept would be approved by the government by mid-2015, and that the draft Subsoil Use Code (the "Code") itself would then be prepared and referred to the Parliament by 2016, so that the Code would take effect during 2016.

Starting from 2014 the state has already introduced some of the proposed key changes (that could be quickly and easily made) to the existing mining legislation. Accordingly, the existing Law on the Subsoil and Subsoil Use was amended in 2014, with effect from 2015, to implement certain new things and to amend existing definitions, namely (but not limited to): mostly unexplored territories, and subsoil use rights associated therewith; auction procedures; sample exploration contracts; technological mineral formations and strategic resources.²

For example, auction regulations were introduced as simplified procedures to enable the choice of an investor with proposal as to the highest signing bonus, provided that the same met all other auction prequalifying obligations. Other provisions are designed to simplify the existing procedures and regulations, and to make the applicable definitions clearer.

Further changes, as drafted in the Concept, include, but are not limited to, the following³:

- a "first come, first served" basis to apply for the right to explore, develop and mine currently vacant and unallocated territory (mostly unexplored);
- guaranteeing the right of investors to carry out subsequent operations, i.e. the actual exploration rights which are to be granted once the preliminary exploration phase is over and, most importantly, the grant of mining and development rights, once the exploration phase is complete;
- economic incentives: land and property tax exemption, the application of international accounting standards for tax purposes, no signing and commercial discovery bonuses, royalty exemptions, etc.
- licensing (as applied to contracts) for most mining operations, with subsoil use contracts only needed for oil and gas operations and strategic resources (a list and details of which are to be expressly specified in the Code);
- third-party arbitration agreements;
- open access to all available geological data and information;
- the State will only have pre-emptive rights with respect to strategic resources;
- retention rights for subsoil users, with respect to explored territories;
- prospecting provisions;
- other changes allowing for a simpler, more sound and open procedures and regulations (i.e. new reporting standards based on CRIRSCO, JORC, CNI and other).

As was also mentioned in the Concept, exploration is one of the most important, but still underdeveloped sectors in terms of applicable laws and regulations⁴. Accordingly, the Code pushes forward reforms to open Kazakhstan's exploration market to foreign investors. Incentives for them to bring finance and technology would include:

- providing for the right to own geological data and information that they obtain, in the course of their work, and to dispose of it at their will;
- supporting investors at local levels: providing land use rights and delivering all necessary data and information.

In summary and in overview, it can be seen that the key purpose of the reforms is to substantially improve the existing laws and procedures.

The Code is planned to incorporate and to provide for the best world practices in the mining sector. Foreign investors like Iluka, Rio Tinto, and Geotech have already started joint-exploration projects with JSC Kazgeology (the state-owned exploration company) to explore some of the processing territories in Kazakhstan for copper, minerals and etc., so that the early signs are promising. ●

Michael Wilson & Partners, Ltd. (MWP) is a full service law firm that is closely involved in these legislative reforms of the mining sector in Kazakhstan. MWP is a member of the two working groups for the Code managed by both the Ministry for Investments and Development and the OECD Panel. MWP has been carrying on business since July 1998, now more than 17 years, and has offices in both Kazakhstan and Azerbaijan, and is also active throughout the Region.

¹The Address to the Nation by the President of the Republic of Kazakhstan Mr. Nursultan Abishuly Nazarbayev "Kazakhstan's Way – 2050: One Goal, One Interest, One Future" of 17 January 2015.

²Law on Subsoil and Subsoil Use of the Republic of Kazakhstan N 291-IV of 24.06.2010.

³Draft Concept of the Subsoil Use Code.

⁴Draft Concept of the Subsoil Use Code.



COAL IS KING: KAZAKHSTAN'S POWER INDUSTRY



“Building new gas-fired combined-cycle power plants would be environmentally very sound. The only problem is the price of gas, which is a social issue. Power generated from natural gas as opposed to coal has generally had a higher price, making it a major issue for the government, as this differential somehow has to be paid for or subsidized. Various interest groups will lobby against the transition to gas, but, from our standpoint, renewable energy and gas-fired energy are options of the future.”

- Stephen Tomczak,
Managing Director,
ILF Consulting Engineers

TACKLING TARIFFS

Kazakhstan's Slowly Evolving Energy Mix

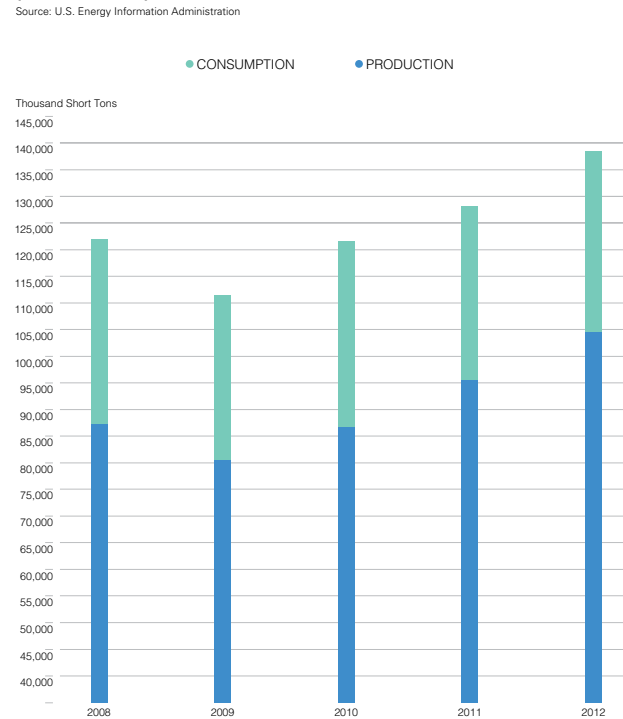
For decades Kazakhstan has fueled its energy-intensive economy with coal-fired power. The country's immense coal deposits and large coal-fired power plants are located in the north and power the majority of its economy concentrated in the south. Today, according to the Central Asian Electric Power Corporation (CAEPCO), 64% of Kazakhstan's power is generated from coal. The remaining 16.1% is fueled by gas and mazut, 12% by hydropower, 7.4% by gas, and 0.5% by renewables.

Kazakhstan's major coal-fired power plants, including Ekibastuz CHP-1, Ekibastuz CHP-2 and the Eurasian Energy Corporation's Aksu Power Plant, are located in the northern region of Pavlodar. Historically, Kazakhstan's northern region has been home to the bulk of the country's electricity generation, and, according to CAEPCO, hosts 70.4% of generation facilities today. Within this area, 43% of electricity is generated in Pavlodar. Major players such as state-owned Samruk Energy and CAEPCO occupy 30% and 6.47% of total market share, respectively.

Currently, coal remains the most important source of electricity, primarily due to its low cost. With an abundance of coal reserves, a strong lobby, and longstanding coal-fired power plants, there are few incentives for Kazakhstan to adopt alternative forms of energy. The second largest source of power, gas and mazut, is generated primarily from deposits in the northwestern Mangistau region of Kazakhstan. This region remains largely isolated from the main Soviet-era grid, which runs from the north to the south, and is home to the country's colossal oil and gas reserves. Utilizing its gas reserves would not only promote a cleaner source of energy, but also capitalize on Kazakhstan's existing resources. A recent law on the restriction of gas flaring was passed to ensure sustainable use of associated gas, and Temirtau CHP-1 has commissioned a new 60-megawatts (MW) Kalamkas gas turbine power plant in the region.

"There is a significant amount of natural gas in Kazakhstan, a fair amount of which is associated with production of oil. However there is also freestanding gas, albeit far north near the Russian border. Building new gas-fired combined-cycle power plants would be environmentally very sound. The only problem is the price of gas, which is a social issue. Power generated from natural gas as opposed to coal has generally had a higher price, making it a major issue for the government, as this differential somehow has to be paid for or subsidized. Various interest groups will lobby against the transition to gas, but, from our standpoint, renewable energy and gas-fired energy are options of the future," said managing director of ILF Consulting Engineers, Stephen Tomczak.

COAL CONSUMPTION AND PRODUCTION IN KAZAKHSTAN (2008 TO 2012)
Source: U.S. Energy Information Administration



While there are challenges associated with cost and infrastructure development, turning to existing gas reserves seems to be more worthwhile than opting for alternative sources of energy such as nuclear power. Kazakhstan's immense uranium reserves have prompted the government to propose plans to construct the country's first nuclear power plant by the year 2025.

"Focusing on gas and using the country's gas resources is a more productive objective than trying to develop a very expensive nuclear capacity that begs heavy reliance on overseas partners," said partner at Deloitte, Anthony Nicholas Mahon.

The country's third largest source of electricity, hydropower, is harvested mainly along the Irtysh river, which flows from China through Siberia and Kazakhstan. Local hydropower plants include AES' Shulbinskaya and Ust-Kamenogorsk hydroelectric power plants (HPPs), Bukhtarma HPP, Shardary HPP, and Moinak HPP. Lastly, renewable sources of energy including wind and solar power comprise a small fraction of Kazakhstan's power genera-

KAZAKHSTAN'S POWER SECTOR 2010-2014

Source: Ministry of Energy of the Republic of Kazakhstan

LEGISLATION PASSED



50 acts
200 decrees

INVESTMENT INCREASED



Roughly 700 billion tenge,
a fivefold rise in
investment volume

UNPLANNED SHUTDOWNS REDUCED



131 in 2008,
to 39 in 2013

EXISTING CAPACITY MODERNIZED



5,000 MW
modernized

NEW CAPACITY ADDED



1,700 MW added
to reach 3,300 MW
by 2015

PRODUCTION COST LOWERED



\$700 per kWh
compared to \$2,200-\$2,500
per kWh if new plant

tion mix. Yet the Central Asian state has made it clear that it is committed to the development of a green economy, evidenced by the nation's 2050 strategy and the decision to host the World Expo 2017, which will be centered around renewable energy. Stagnation in this sector can largely be attributed to unstable tariffs. The recent devaluation has also made returns in the sector much less attractive, so that many projects have been cancelled or put on hold while investors wait for new tariffs to be ratified.

However, strides have been made to further the green economy, most notably by AECOM. The American giant has launched a wind farm concept-design project, in partnership with Kazatomprom and Toshiba, which it plans to sell as a completed design package with financing from the EBRD. AECOM's entrance into the market may be just what Kazakhstan needs to attract additional foreign investors into the country. "Kazakhstan is investing time and money to develop this type of energy in the country and has the perfect natural conditions for renewables," said country manager at AECOM, Marina Kostanian.

Other players are also attracted by the country's natural conditions and have taken steps towards project implementation. An Indian firm has plans to construct a 50-MW solar power plant in Aktau and another 100-MW plant in Shymkent. Locally registered German firm KB Enterprises has finalized its approvals for the construction of a 100-MW solar power plant 35 kilometers from the capital city of Astana. Samruk Green Energy has recently moved

its operations from the capital, in order to manage an upcoming 2-MW solar power plant project near Kapshagai reservoir in Almaty region.

Kazakhstan's current energy mix, however, remains far from the targets that the government outlined in its 2050 Strategy. Attracting and securing private investment in Kazakhstan's power sector are heavily dependent on legislation. With ambitious goals of 3% renewable generation by the year 2030, and 50% by the year 2050, the state needs to make concerted efforts to reach them. •

Focusing on gas and using the country's gas resources is a more productive objective than trying to develop a very expensive nuclear capacity that begs heavy reliance on overseas partners.

- Anthony Nicholas Mahon,
Partner,
Deloitte

Serhiy Zuyev

●●● Vice President
AES CORP., KAZAKHSTAN

During Soviet times, no one was motivated to think about savings, because everything was largely free. Presently the system is different and tariffs are higher than they used to be, which is a strong motivation for consumers to pay attention to energy savings. This trend will continue given the replacement of old assets with new assets that are much more expensive. The reality is that the general population will continue to pay more, since the only way to decrease the impact on disposable income is to consume less energy.

In addition, the experience of other countries can show that the stimulation of individual renewable production and the installation of individual solar panels by installing and selling energy produced to the grid can be supported by legislation and fiscal incentives. This would be an effective mechanism to improve energy efficiency by reducing transmission losses.

In terms of increasing awareness among the general audience, we started a project with the United States Agency for International Development (USAID), collaborating with local universities in Ust-Kamenogorsk. We signed a memorandum with the local government of Ust-Kamenogorsk and USAID to help local authorities to develop an energy efficiency program for the region, and to perform energy audits for companies to understand practical solutions that can be implemented. These initiatives provide students with basic skills of conducting energy audits in communal buildings and all types of municipal buildings, as well as helping to create the energy efficiency program for eastern Kazakhstan. The latter program is split into several parts beginning with municipal and communal buildings and will gradually progress into transport, heating, and lighting. Projects of this kind are a priority for AES Kazakhstan. There is a tremendous opportunity for savings. For example, we recently held an international conference, where it was noted that the potential for a single household in Kazakhstan would be about 40% savings, which is incredible compared to Europe, where you can get 2%-3% savings.

Sustainable development is not possible without trained a workforce. Please tell us more about your training center in Ust-Kamenogorsk.

We are proud of our people and our development initiatives. The corporate training

center in Ust-Kamenogorsk is not only used for our employees, but also for the development of people from the university and external parties in the required areas, such as safety.

AES' activities in this area have already received international recognition. This year, we won first place in the HR Brand competition for the training of young specialists. Our target is to have the best people, and we train our staff right from their very first day in the company. All managers have in their personal key performance indicators the development of young people, to help them advance as soon as possible. Those who demonstrate skills and a desire to learn have chances to grow and develop. For example, at our regional headquarters in Amsterdam, one of the main languages spoken is Russian, mainly due to the high number of staff who was transferred from Kazakhstan. It is a great example for any young specialist or student that comes to see that people quickly went from being a student to a high-quality specialist to director or manager.

AES Kazakhstan is approaching its 20th anniversary. What are your strategic priorities for the upcoming five years?

We are aiming to achieve a zero lost-time incident target for all of our businesses for at least the next five years. All incidents can be avoided by having an efficient safety management system. AES' priorities include the improvement of the quality of operations of our power assets. We have a program targeted at continuous improvement and every year we develop more than 100 projects in this area. All goals are linked to AES' vision that we have of improving the lives of people in every market where we operate. We have been in Kazakhstan for many years and believe that we can continue to contribute to the improvement of peoples' lives by providing safe, reliable, and sustainable energy solutions in every market we serve. •

●●● **AES is a global company with a long-standing presence in Kazakhstan. What did the company enter the market in 1996?**

AES is a global company with representation in 18 countries across four continents. Kazakhstan is well-developed in terms of its industrial sector, especially in the oil and gas and mining and metals sectors. Naturally, all of the companies in those sectors consume a great deal of electricity; therefore, it is crucial to provide a reliable and uninterrupted supply of electricity. Today, AES has four businesses in Kazakhstan: two combined heat and power plants that we own and two hydropower plants operated under concession.

As one of the largest producers of energy in the country, do you believe that there are enough incentives for the consumer to be more energy efficient in Kazakhstan?



Yerkin Amirkhanov

●●● President
CENTRAL-ASIAN ELECTRIC POWER CORP. (CAEPCO)

●●● **What changes have you observed in the power sector over the past couple of years?**

Kazakhstan's power sector has been evolving significantly. In the 2000s, the country's economy showcased a good growth rate, which also resulted in an annual growth of 5% to 7% in energy consumption. At that time, it was becoming apparent that there was a deficit of power production in the country. Additionally, most power was being generated using outdated equipment. To solve this problem, the government introduced a program called 'Tariff in exchange for investment' in 2008. Within this program's framework, all power companies were divided into 13 groups, each of which received a fixed tariff for the following seven years. The annual tariff increase was 18% to 20%. The program provided strong incentives for the introduction of new generation capacity and the modernization of existing equipment. As a result, production capacity

increased by 30%. The 'Tariff in exchange for investment' program was designed for 2008-2015, and as of January 1st 2016, we were supposed to adopt new legislation, or the so-called Electricity Market, to help develop new generation capacity and create new power plants. However, in recent years, the growth of energy consumption has significantly slowed, and the government postponed the introduction of the legislation for another three years. Thus, the tariffs for 2016-2018 will be fixed at the same level as those of 2015.

With regards to CAEPCO, in 2007 we began working with the European Bank for Reconstruction and Development (EBRD). EBRD became a large shareholder, owning 24% of CAEPCO's shares in 2009. Working with such a large institutional investor allowed us to implement an investment program to modernize our assets.

How attractive are current tariffs for international investors?

Tariffs are calculated based on operational costs. Every player in the market signs an investment agreement with the Ministry of Energy that specifies an amount that will be produced and the amount that will be sold, as well as the level of investment. In the following three years, the investment component of the tariff will be gradually reduced taking into consideration the level of inflation. CAEPCO is satisfied with the current tariffs. We are expecting the wear-and-tear rate of equipment will be reduced from 80% in 2008 to 39% in 2018. In the coming three years, we will continue to improve this rate.

In the past years, our operational costs were growing at the same rate as inflation, and the investment component was growing much faster, which is why our rate of investment in 2015 is significant enough to finish our development plans.

Please tell us more about CAEPCO's investment program.

During the process of developing our investment program with the EBRD, CAEPCO focused on modernizing its production capacity, which currently amounts to 940 megawatts. Our program has three key directions. First, we will replace our generators (our newest power station is 40 years old). We dismantled old equipment and installed new equipment, which allowed us to lower our operational costs. CAEPCO

has combined power plants, which produce heat in addition to electricity. As we mainly work in northern re-gions, where homes are centrally heated for almost seven months a year, it is important to consider production of heat. Second, we will be reducing the amount of electricity lost during distribution. Our compa-ny is vertically integrated and operates in three regions, covering over 50 thousand square kilometers of the grid from 110 kilowatts and lower, which makes us the largest transmission and distribution company in Kazakhstan in terms of grid capacity. The third pillar of our investment program is focused on the envi-ronment. When we acquired our assets during the privatization period, they were harmful towards the environment. However, we managed to significantly decrease harmful waste and currently we are one of the leading companies in terms of environmentally friendly production.

Is CAEPCO planning to export electricity in the near future?

Thanks to our access to retailers, CAEPCO is able to sell everything it produces. At the same time, we are one of the few players on the Kazakh power market that has the technological capacity to export to Russia, avoiding the national grid operator. However, because of the devaluation of the Russian ruble, at this moment it is not economical to export to Russia.

How will the power sector evolve over the next three to five years in Kazakhstan?

Kazakhstan has huge reserves of extremely cheap coal, which will remain the key source of power. New technological solutions are effective enough, and therefore we aim to use the most advanced technology in the field of coal-power generation. Green energy will also develop, but its implementation will depend on both market and political factors. In western Kazakhstan, gas-powered stations will play an important role.

Where do you envision CAEPCO in three to five years?

CAEPCO will continue to work towards decreasing its operational costs and improving productivity. Currently, we are focusing on several development projects, as well as increasing our generation and transmission capacity. In the coming years, we will try to maintain and strengthen our position as the largest private operator in Kazakhstan. •



Kurmangazy Ibragimov

Chairman, Board of Directors
BATYS TRANSIT

●●● **Could you tell about the development of the company since its inception?**

The majority of generation capacity of Kazakhstan's unified power grid (SDPP-1, SDPP-2, Aksu SDPP) is located in north Kazakhstan and covers power deficit in south and west Kazakhstan almost entirely.

The core business of our company is located in west Kazakhstan in Aktobe region. Historically, after the breakdown of the Soviet Union, Kazakhstan was cut off from the power systems of neighboring countries. The power deficit in Aktobe region was covered by expensive power that was imported from Russia. That is why on October 7, 2005, the government approved decree No.1008, the action plan on implementation of the North Kazakhstan-Aktobe region interregional transmission project.

In pursuance of the project mentioned above, a joint stock company Batys Transit was created November 22, 2005. 80% of the shares belonged to MekhEnergostroi LLP (was

awarded the contract), and 20% to Kazakhstan Electricity Grid Operating Company (KEGOC) JSC.

December 28, 2005 Batys Transit JSC and Kazakhstan's government represented by the Ministry of energy and mineral resources signed a Concession agreement for construction and operation of a 500-kW North Kazakhstan-Aktobe region interregional transmission line. The concession will be operating till the end of 2022, by which time the transmission line will be fully operational, profitable, and will have been passed to the state.

Initially, it was planned that the construction would be funded through infrastructural bonds, which was a new practice for Kazakhstan's financial market. Infrastructural bonds worth 830 million tenge (\$125 million) were purchased mainly by institutional investors, including pension funds, insurance companies, and second tier banks. The rest of the funds, \$30.5 million, were borrowed from the Eurasian Development Bank. Project design started in 2006, construction was completed at the end of 2009, and the facility became operational in February 2009. The total cost of construction exceeded \$160 million.

The economic downturn in 2007, however, negatively affected the economic development of Aktobe region: power consumption decreased, as well as the amount of power transmitted through our power grid. As a result, by December 31, 2001 accumulated losses of Batys Transit JSC exceeded 1 billion tenge (\$7.2 million). From 2012 to 2013, to increase the amount of the power transmitted and improve the financial state of the company, Batys Transit realized a new project, two 220-kV power transmission lines to connect a new large power consumer, smelting facility No.4 of a branch of Aktobe's ferroalloy plant of Transnational company Kazchrome JSC (JSC TNC Kazchrome).

The power transmission line was launched in May 2013, but, because of the accidents in two of the stoves of smelting facility No.4, full operational capacity has not been reached. However, over the past three years the amount of the power transmitted through our network has considerably increased due to the project mentioned above. Thus, Batys Transit managed to become self-sufficient financially, and complete the past three years with net profit (716 million tenge in 2012, 324 million tenge in 2013, and 1.032 billion tenge in 2014).

●●● **Could you tell about the projects that Batys Transit is working on?**

We are expecting to see up to 420 megawatts (MW) of power transmitted through the North Kazakhstan-Aktobe region interregional power transmission line (hereafter PTL-500 kV) once the smelting facility No.4 of a branch of Aktobe's ferroalloy plant of TNC Kazchrome JSC reaches its full capacity in 2015. Although PTL-500 kV has the capacity to transport 640 MW, the transmission is limited to 380 MW by the system administrator to ensure reliability and maintain the static stability of the Aktobe power center. This is because the flow in the 220-500 kV transmission line between Aktobe region of Kazakhstan and Orenburg region of Russian Federation is limited to 500 MW.

To cover the expected power deficit on PTL-500 kV and increase the load of the grid, it is necessary to build new or revamp one or several of the old international 220-kV transmission lines that connect the Aktobe region with the energy system of the Russian Urals. To ensure steady power supply and cut down on the expenses of purchasing power to cover technological losses, the company is planning to erect its own power plant and received a \$744,000 grant from the U.S. Trade and Development Agency for a feasibility study.

●●● **How will the power sector develop in the next three to five years?**

One of the large projects that will be completed in the coming three years is construction of the power transmission line Eastern Transit. In line with the new economic policy Nurly Zhol (Bright Path), KEGOC JSC is implementing an infrastructure project, the construction of the 500-kV Ekibastuz-Shulbinsk HPP-Ust-Kamenogorsk interregional power transmission line. This 705-km, 45-billion tenge line will unite the power grids of north, east and southeast Kazakhstan and is scheduled to be completed in 2018.

Another important future project will unite the power grid of west Kazakhstan (Atyrau region) with Kazakhstan's united power grid, planned in line with KEGOC's long-term development strategy for 2025. This project will provide future consumers and producers of Atyrau region with access to Kazakhstan's united power grid. •



Baurzhan Burkhanbekov, Salavat Kalibekov & Kumarbek Berdikulov

BB: Partner
SK: Director
KB: Director
PWC MINING AND POWER SPECIALISTS, ASSURANCE DEPT.

●●● **How significant is the energy, utilities & mining division to your overall practice in Kazakhstan?**

BB: It is quite significant. PwC is a leading consultancy firm globally with huge experience of working with companies in Energy, Utilities and Mining sectors. Back in 1994 PwC came to Kazakhstan to support its multinational clients primarily in the country's growing energy sector. With development of local businesses PwC started actively working with domestic companies as well. Not surprisingly, our clients' portfolio reflects the pattern of the country's economy, i.e. energy, utilities and mining sectors are the major contributors to the country's GDP so the companies in these sectors represent major part of our clients' portfolio by value. The proportion of these sectors comprises about 70% of our practice in Kazakhstan as a whole.

●●● **What steps are being taken to promote energy efficiency in Kazakhstan today?**

KB: KEGOC, the national grid company, constructed two power transmission lines from the north to the south of Kazakhstan, and is currently constructing a third line, after which the south of Kazakhstan will secure supply of electricity from main power plants located in Ekibastuz. Additionally, due to an amendment to the law on oil flaring, associated gas from oil wells was prohibited, therefore almost all oil companies had to build gas turbine stations and provide electricity to the local population, or otherwise utilize associated gas from wells. Thanks to new gas turbine stations, west Kazakhstan is becoming largely energy independent. In 2009, a special program was put forth to rehabilitate existing power plants. The government introduced investment tariffs, which meant that power plants had a sufficient margin on tariffs to reinvest in reconstruction. Currently, because of a drop in commodity prices along with the general economic situation in Russia and Kazakhstan, power plants have overcapacity.

●●● **How is the government addressing the problem that 15% of electricity is lost in transmission due to worn out equipment?**

KB: Losses of 15% are huge compared to other countries, but can be attributed in part due to long distances and the poor condition of networks. However, grid losses have decreased from 18% in 2010 to 15% in 2015, and are continuing to diminish. Transmission companies have tariffs through which they are committed to invest in rehabilitation and replacing existing networks, but the level of investment is not sufficient yet. In our largest region, Almaty, local transmission companies are investing a significant amount to replace old network cables, construct new stations and have ambitious plans to introduce smart metering systems to decrease losses and better control the network.

●●● **What are some other challenges to sector growth and development in Kazakhstan?**

KB: The main issue now is currency devaluation, because while Kazakhstan does produce some equipment, most is imported. Revenues of all players are denominated in local currency, while a majority of

them have significant debts denominated in U.S. dollars. At a certain point labor costs will also catch up, so there is pressure on the government to take the social aspect into account. Overall costs of production and transmission will be affected by currency devaluation, while revenues are not as flexible.

●●● **How do you predict that the sector will evolve in the next five years?**

KB: The main goal of the power sector is to provide reliable electricity to consumers. Driving power sector growth hence are other industries including mining, metals and general consumption. We hope that there will be some growth, especially with government plans for the adoption of renewable energy.

BB: The power sector is the engine of the economy. However, without demand it is difficult to do business, especially in the power sector, which requires constant maintenance and high fixed costs. The question is about the overall economy and how other industries are developing. If other industries are healthy, then the power sector will have a good base to grow. If not, as you already see, there will be extra capacity in terms of power. However, you cannot just stop producing power, so there need to be ways to deliver to the market. The economic situation in Russia, our closest neighbor and potential market for power export, is not good, so exporting power to Russia will be difficult. Exporting to developing western China could be an alternative, but will require some investment and the construction of new power lines in China itself. Even though China is not experiencing double-digit growth as it did in the past, the base is huge and 4% to 5% growth still generates quite significant demand.

KB: For the past five years, both the government and industry had a different agenda. The agenda was growth, including installation of increased production and capacity, along with ambitious plans to adopt renewable energy and construct new power and nuclear power plants. The current situation has changed dramatically, and the government and industry need time to digest and draft a new agenda for the next five years. •



JH



DM

Jo Hulbaekdal & Dana Medukhanova

●●●

JH: Country Manager, Kazakhstan
DM: Engineer

DET NORSKE VERITAS KAZAKHSTAN

●●● How has DNV GL evolved in Kazakhstan over the past three years since we met with you last?

JH: DNV GL has expanded its staff quite significantly. To build a sustainable business here, you need competent, local resources. Traditionally, there was a lack of local competence in our core services areas, like risk management, so we had to develop them ourselves. All our local engineers have completed a two-year, on-the-job assignment in Norway or the UK before being repatriated to Kazakhstan. The main reason behind DNV GL's entrance into Kazakhstan was to contribute to the development of the offshore oil and gas resources. While Kazakhstan is an experienced oil and gas country in terms of exploration onshore, it is taking the first steps offshore developing the Kashagan field. Given the in-depth experience that our company has in developing oil and gas resources offshore and in arctic con-

ditions, we were convinced that we could provide valuable support in handling the significant risks and developing Kashagan in a safe and environmentally friendly way. An increasing concern over safety and environmental aspects, as well as a greener approach, is maturing among our local customers, and we hope that we can progress also in other directions than oil and gas.

DNV GL works within other sectors. How do you see your Kazakhstan office developing in the future with regards to other business lines?

JH: Our services are still focused on offshore oil and gas activities. Following the mergers with KEMA (in 2011) and GL (in 2013) DNV GL has gained additional resources and competence as a global energy consultancy. We were involved in writing the Grid Code for Kazakhstan and since 2013 we have been working with the Government of Kazakhstan to set up a renewable energy legislative framework cooperatively with the World Bank and EBRD. We see a significant potential for developing renewable energy sources in Kazakhstan, in particular wind and solar power, and we have substantial competence and capabilities to support these developments.

With Expo 2017 around the corner and the government's 3% target for renewables by 2020, and 10% by 2030, in place, how do you see renewable energy developing in Kazakhstan?

DM: Having passed a Law on Renewable Energy (RE) in 2013¹, which established the basic RE support framework, the government, together with the investor community and other stakeholders are engaged in putting this framework into practice. In August 2014 favorable feed-in-tariffs (FT) were established². However, while the RE support system is in principle designed in line with international experience and despite the FT being in place for nearly 12 months, no large international RE developer has reached financial closure for any significant project. The main reasons are substantial problems in practical implementation of the existing RE legal framework and the overall macro-economic situation, such as low oil prices and a recent sharp devaluation of the national currency tenge. Even the focus of the Expo 2017³ program has changed as a result of economic conditions, change of the govern-

ment's priorities and overall less interest in renewable energy. Hence, all private investors are waiting to see what will happen. State-owned companies will eventually implement their renewable projects, but timing is uncertain.

DNV GL is known for promotion of safety across all industries. How do you promote a safer attitude in doing business, and more efficient operations here in Kazakhstan?

JH: There has to be several approaches to this. Firstly, it begins with the individual; by raising personal awareness of safety, you can change peoples' attitudes. Within the industry in Kazakhstan as a whole, there is no tradition for performing risk assessments to prevent accidents from happening. DNV GL is advocating a proactive risk management approach, where we would like to assess risks and prevent accidents from happening rather than mitigate consequences after they have happened. DNV GL is currently working on a project with key oil-industry partners and authorities in Kazakhstan to modernize the technical regulatory regime for the offshore sector. There is widespread acknowledgement that the current technical legislation in Kazakhstan, developed partly during Soviet times and mainly for onshore application, is not appropriate for developing oil and gas resources offshore. The environmentally vulnerable Caspian Sea and its harsh environmental conditions combined with high risk factors—such as toxic gases and high reservoir temperatures and pressures—pose a great risk. In the ongoing feasibility study we compare the current Kazakh regulatory regime with those of the UK and Norway, which is widely regarded as best industry practice. •

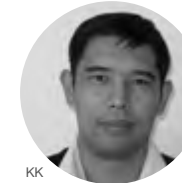
¹The Governmental Decree of the Republic of Kazakhstan "On approval of the action plan on development of RE in Kazakhstan within 2013-2020", from January 25, 2013 #43, as amended on 28.07.2014

²The approved Fixed Tariffs (the RK Government Resolution No. 644 and 645 from June 12, 2014 as amended by Resolution No. 148 on March 19, 2015)

³Kazakhstan: Nazarbayev Signals U-Turn on Alternative Energy, 17 October 2014 <http://www.eurasianet.org/node/70501>



ST



KK

Stephen Tomczak & Kairat Kinzhebayev

●●●

ST: Managing Director
KK: Lead Electrical Engineer
Project Engineer

ILF CONSULTING ENGINEERS

●●● Please introduce us to ILF Consulting Engineers' presence in Kazakhstan, and its role in the country's power sector.

ST: ILF is a family of companies that provide engineering, design, consulting and project management consultancy services (PMC) in different markets. About 50% of the company's revenue is oil and gas, while 50% of the company's turnover is generated from infrastructure projects. Historically ILF has been active in power projects, which comprises the three main areas: generation, transmission, and distribution, both in conventional and renewable energy. In Kazakhstan, ILF has pursued various opportunities in conventional energy, but often investment has not been sufficient to build new capacity. ILF has been following power-generation prospects, as the majority of capacity is quite old. Samruk Energy's heat and power plant (HPP)-1 in Almaty has been converted to gas, but HPP-2 is over 40 years old and continues to oper-

ate on coal, with burners below grade and in need of replacement. ILF has expressed interest to Samruk Energy in becoming involved in that project, to build a new power plant next to the existing one and eventually switch from the old to the new plant. In Southern Kazakhstan, there is high demand for electricity, and hence always a host of potential technical solutions. Sometimes however they run up against financial and commercial issues. On transmission projects, ILF participated in the Eskene Kuryk oil pipeline with the design and survey work of an electrical transmission system for the pipeline going from Kashagan to Kuryk, south of Aktau. Within distribution, ILF has been active in the context of substations and power lines and distributions systems. We have bid for a significant amount of conventional energy work, and been in contact with KEGOC, the national grid operator. On the renewable energy front ILF has been actively bidding to companies such as Samruk Green Energy, who had a 2-megawatts (MW) solar plant project near Kapshagai reservoir along with an expansion project 50MW + 50MW solar photovoltaic plant. ILF proposed to conduct the technical economic substantiation feasibility study for this project.

Are there any additional prospects for ILF's involvement in renewable energy projects?

ST: ILF recently responded to an Indian client who had two solar power plant projects one 50-MW plant in Aktau and another 100-MW plant in Shymkent. ILF Kazakhstan offered to conduct an adaptation of the design to Kazakhstan design standards and norms, and to carry out survey work related to the site at both locations. Currently, however, the most recent devaluation of the tenge made previously approved electrical tariffs no longer valid. There should be a link between the U.S. dollar and the tenge, otherwise investors might not be prepared to get involved. The project was supposed to be a build-own-operate-transfer project, and now has become complicated because power was supposed to be purchased by a subsidiary of KEGOC.

KK: This division of KEGOC, or Calculating Financial Center, is responsible for buying electricity from renewable energy sources and dispatching renewable power transmission from generation companies to consumers. They work together with

KEGOC and its subsidiary, KOREM, who is responsible for wholesale power sales agreements. But the problem is that electricity tariffs for renewable energy have been changed twice, and because of devaluation most companies' technical economic substantiation should be changed. Players are currently waiting on the next tariff revision because according to Kazakhstan law, they the tariffs should be ratified. The World Bank granted KEGOC a consultancy project, and the national grid operator is currently developing a framework outlining the ways in which renewable energy companies can integrate onto the national grid.

What is your assessment of Kazakhstan's potential for gas-powered electricity generation?

ST: ILF supports transitioning to gas as a fuel, for example through the conversion of Samruk Energy's HPP-2 power plant. We could assist the client in surveying, designing and managing a project to build such a new generation facility. There is a significant amount of natural gas in Kazakhstan, much of which is associated with oil production but there is also freestanding gas, albeit far north near the Russian border. Building new gas-fired combined-cycle power plants would be environmentally sound. The only problem is that the power generated from natural gas as opposed to coal generally has had a higher price.

Where do you see ILF in the next three to five years in Kazakhstan?

ST: ILF is a service provider and able to work with equipment suppliers or construction companies to assemble an EPC package. Alternatively we can sell our design engineering, project management and consultancy services to define a project and prepare the terms of reference. ILF is engaged with EBRD, who has been quite active in trying to finance some of these ventures, and ILF can fill part of that market for power plant-related services. We hope that we can become involved with renewable energy projects, which is in line with the political program of Expo 2017. •

THE LARGEST COPPER PRODUCER IN KAZAKHSTAN



Kazakhmys assets include 10 mines, 5 processing plants, 2 copper-smelting facilities and 2 coal mines

Kazakhmys manages production processes from extraction to final product

Last year, Kazakhmys produced 295,200 mt of copper cathode and an equivalent of 2,946 kg in gold ingots

Kazakhmys is one of the largest silver producers in the world and produced 329 mt of refined silver last year

Kazakhmys owns electrical power stations serving production facilities and neighbouring regions

Kazakhmys currently employs 45,000 people

KAZAKHMYS IS THE LEADER IN MINING AND ORE PROCESSING



Taylan Karamanli

Managing Director
KB ENTERPRISES

●●● Please introduce KB Enterprises to our readers. What was the reason behind the company's entrance into the Kazakh market?

KB Enterprises registered as a local company in 2013 to build solar power plants in Kazakhstan. We have offices in Frankfurt, Germany, where we organize and manage all our operations. Management of our company has extensive knowledge on International Supply Chain Management and Corporate Finance with minimum of 25 years of experience in European And North American markets.

Kazakhstan is one of the most important emerging markets to western institutions where there is major appetite for government-supported projects. Having said that, we seized the opportunity and have gathered all components in order to be able to execute our projects. Therefore, KB Enterprises has signed an agreement with Siemens as an EPC contractor exclusively, in

addition to securing the finance towards the project. These are the basic necessities for entering Kazakhstan, and are often lacking. Thanks to the mayor of the Theselinograd region and the mayor of Akmola province for their unprecedented support for enabling our project to get approved and our Ministry of Energy for their vision on renewable energy in Kazakhstan.

You are currently working on your first 100-megawatts (MW) solar power plant in the Akmola region in Astana. Could you talk us through the technicalities of this project?

Our project is a 100-MW photovoltaic solar power plant located 35 kilometers (km) from the city of Astana, in Kabanbai Batyr village, whose size will be about four square km and we will create jobs for about 100 local people and supply power to Astana.

To start with, we had to secure the land. And then, Siemens provided technical details of our project, which we needed, for local grid operator in order to have our project adapted to rules and regulations of Kazakhstan, which provided us authorization to connect to the grid. The last stage was acceptance to energy to be provided by KB to local grid. I would say it has been a long process. Nevertheless, it has been a learning curve for us and next project will be a lot smoother to execute.

The second stage of our project will involve BioMass based on city waste management, which is absolutely vital. Residential and Industrial Waste are important source of energy while helping a clean environment. Although, Recycling is not known in depth here in Kazakhstan, it is our duty to inform society about the vitality of renewable energy sources. KB Enterprises has also plants to install number of windmills on the side.

Astana is a pilot project for us and under normal circumstances, we are expecting our project to be completed about the end of 2016 nine months later. Our 100-MW photovoltaic project is vital for the region to attract new investments and energy for new industries. The plant will probably be a tourist site for those who visit Astana for Expo 2017.

Solar power, however, is the first step for KB Enterprises. Our ultimate goal is indeed development of agriculture in Kazakhstan. Highly populated countries and

potential markets border Kazakhstan such as China, Russia and India, and Kazakhstan boasts 2.5 billion square km of unused land. Both water and energy are required to turn land into habitable and agricultural areas, and hence solar is absolutely necessary in the short and long term. Solar power has the advantage of being able to be generated quickly. You do not have to wait for the grid, which takes ages with a high bill attached to, while we can literally execute a 10-MW solar power plant to be constructed in one year.

Is KB Enterprises planning to work on additional projects in the region and in other parts of Kazakhstan?

In our pipeline we would like to launch projects in the Karaganda, Almaty, Taraz, Shymkent, and Kyzlorda regions. KB Enterprises has already put a system together and is optimistic about local network capabilities. We will be working closely with the Ministry of Energy as well as local municipalities.

There is a highly influential project that we are planning to implement in Zhetisai, a small city south of Shymkent near the Uzbekistan border. Ideally we would like to power this city using 100% renewable energy sources, a combination of solar, wind, and biomass. The city's mayor approached us with a vision for the city, which is extremely sunny and small, to be Central Asia's first green city. In order to do so, we would like to install a separate smart grid, and I hope we can get enough support from the central government for this project. When this project is finalized as pilot project, we will be able to implement the same structure to various cities in Kazakhstan, which will have a positive impact on the state budget.

In a few years KB Enterprises aims to be the leading renewable company in Kazakhstan; we are confident that we can achieve this target. We believe in Kazakhstan. ●



SHAPING THE CONTOURS OF KAZAKHSTAN'S MINING INDUSTRY

“The development of a regulatory regime that is stable, transparent, and takes full advantage of the experience and expertise of companies with global reach represents an important step in attracting the type of foreign investment that the President and Prime Minister have prioritized for Kazakhstan. Achieving the right policy and regulatory settings will help ensure the long-term development of Kazakhstan’s highly prospective minerals sector.”

- Alison Morley,
Country Manager,
Iluka Resources

TRANSITIONING TO PRIVATIZATION, MAINTAINING HISTORICAL ASSETS

Kazakhstan aims to harness its Soviet ties and legacy in creating an optimal mining jurisdiction

Market Structure

The state of the mining industry in Kazakhstan can be characterized as a privatized version of previously state-owned enterprises from the Soviet era. The main companies on the market are Kazzinc Holdings, now 70% owned by Glencore and 30% by Samruk-Kazyna, Kazakhstan's sovereign wealth fund; Kazakhmys Corp.; KAZ Minerals; Eurasian Resources Group (ERG), previously ENRC; and Kazatomprom, the national uranium mining company. These players, although still manpower intensive in their operations, have been continuously investing in their production processes to increase efficiency, particularly in light of the ongoing slump in world commodity prices.

They are also restructuring to increase performance. "In 2014, we witnessed a restructuring, as a result of which Kazakhmys was split into two companies, a public company, KAZ Minerals, and a private company, Kazakhmys Corp. The biggest change brought about by this split was the projects that each company is working on. KAZ Minerals is now working on several projects in the east, and is also developing the Bozshakol and Aktogay deposits in Kazakhstan and Bozymchak in Kyrgyzstan. Kazakhmys Corp. is working on projects in Zhezkazgan, Balkhash and Karaganda regions. Zhezkazgan area is the most important one for the company, as it accounts for 75% of the total volume of production. Restructuring of the company has not changed the quality of the work environment and human resources approach. The main goal of Kazakhmys Corp. now is increasing the profitability of non-core projects and working on new projects," said Bakhtiyar Krykpyshev, general director of Kazakhmys Corp.

Similarly, ERG has undergone its own reorganization. "In terms of internal processes, the company is now going through a transformation. We adopted a different approach to corporate governance; cur-

rently a lot of attention is allocated to tactical strategy and operations management. Apart from that, the company moved away from one, two and five year planning. There is instead a special program developed in ERG that allows for modeling various market situations and measuring the impact of fluctuations in commodity prices on the entire company's operations," said Azamat Bektybayev, ERG's vice president for production.

Besides these large players, there are a number of other significant companies present in the mining sector in Kazakhstan. Some of these include international names such as ArcelorMittal and Cameco, which are already producing, and Rio Tinto, which is currently exploring. In addition to international players, there are a number of local Kazakh companies that have an equally important role to play. Some names in this category include Bogatyr Coal, Kazakhaltyn, and Kazphosphate. Just as in other mining jurisdictions, there are also a number of exploration companies present. These include a mix of both domestic and international players such as Kazax Minerals, Orsu Metals, Frontier Mining, Altay Polymetals, EuroChem, but also established international players looking to set up their presence in Kazakhstan, such as Iluka Resources of Australia and Kores, a Korean government-owned entity.

On the services and equipment supply side, Kazakhstan is continuing to attract new companies seeing good future prospects in the country. Already long present in Kazakhstan, companies like Kazgiprotsvetmet, Iskander, Gornoe Buro and Antal are complemented by the interest of other EPCM service companies, like TOMS of Russia, who are keen to expand within Kazakhstan's mining regions such as Karaganda.

Kazakh companies, especially the smaller players, are still rather concerned with price as opposed to quality when it comes to the equipment they use. This causes a continued interest in equipment from Russia and China, but a recent trend has emerged that West-



Image: Yildirim Group

ern equipment suppliers, given the right flexibility in the financing solutions that they provide, can count on Kazakhstan to be a significant source of business for them. These providers include Atlas Copco, Borusan Makina, AK Machinery, Tamozy Machinery, and Sandvik, amongst others. As the interest grows in using more efficient equipment that requires less maintenance and with significantly longer durability, Kazakhstan presents an interesting opportunity for international equipment suppliers not yet present in this country.

Mono-Cities and Interconnectedness with Russia

As previously mentioned, mining in Kazakhstan is still labor-intensive, but due to the low cost of labor, this fact has been changing

rather slowly. One remnant of its Soviet past has been the once prosperous small towns that today require significant investment. Mining deposits around the world are often found in remote sites and communities of miners and their families subsequently spring up around these locations.

In Kazakhstan, the government wants to focus its search for minerals around single-industry cities, so-called mono-cities. Towns like Arkalyk, however, are becoming uninhabitable due to depleting reserves of bauxite and the possibility of companies like ERG leaving the area. Yet a billion metric tons 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 a period of eight years, the time when bauxite is supposed to run out.

In 2012, President Nazarbayev instructed the government to develop similar programs for the development of mono-cities elsewhere. 27 such towns were selected with a combined total population of over 500,000 people. The largest ones to participate are 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. "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," said Albert Rau, the Vice Minister of Investment and Development. The case of Temirtau, a center of coal mining in the Karaganda region, is explored more in depth in the coal section. It is not only the government that is responsible for helping local people, but private

companies can make a significant impact on the communities in which they operate. "People are our greatest asset, and we have to invest not just into training our staff, but also in improving the quality of their lives. Unlike most of the mining projects in the country, we employ only local people. So we do not have to fly-in and fly-out workers to do basic jobs. Our workers come from the nearby Terekty village. We invested \$34.5 million in electrification of the village, where we have constructed and reconstructed multiple power-supply facilities. We constructed more than 6,000 square meters of accommodation for our future employees, as well as sports facilities, a canteen, a swimming pool, etc. The reconstruction of the school and kindergarten is still in progress. Various study groups and activities were organized and musical and sports equipment was purchased for the children. The works on redevelopment of the streets of the Terekty village are being carried out as well. Additionally, a regular water supply was implemented; garbage containers and garbage removal trucks were purchased

for the removal of household waste. More new jobs for residents of the village and the surrounding area are constantly being created," said Ruslan Yun, chairman of the supervisory board of Altay Polymetals. Russia's presence in Kazakhstan should not come as a surprise to anybody as Kazakhstan and Russia are long-term partners dating back many decades. Furthermore, Kazakhstan looks to benefit tremendously from being a part of the Eurasian Economic Union along with Russia, Belarus, and Armenia, a region with a population of 176 million. In fact, a lot of Russian companies, bitten by sanctions imposed on Russia over its actions in Ukraine, are looking to Kazakhstan as a good place to expand or move their operations entirely. On the other hand, low oil prices have greatly contributed to the deteriorating value of the Russian ruble, making Russian goods cheaper and thus ready to flood the Kazakh market. This has increased competition for Kazakh firms struggling to meet lower prices from abroad. The weak Russian ruble has also had some welcome benefits for Kazakh companies. "A positive factor for us is the current situation with the Russian ruble, which has helped us to decrease our cost of transportation and thus exports to European markets became more profitable," said Krykpyshev of Kazakhmys Corp. Russian companies like RJC Group have had a very positive experience in Kazakhstan and plan on further expanding here. "In 2011, RJC participated in Minex Central Asia, where we were approached by Kazakhmys Exploration, who offered us to work with them at several deposits. This allowed us to enter the Kazakh market. In order to optimize our operations and focus on further development of the local market, we opened a representative office, TOO RJC Karaganda. Geological exploration has great potential and it opens many opportunities for local and international companies. RJC aims to carve its niche in the sphere of servicing geological exploration projects in Kazakhstan," said Andrey Kharlashin, director of geology at RJC Group. Kazakhstan's Soviet legacy in terms of mono-cities and its interconnectedness with Russia present a number of challenges for the advancing nation, which if exploited smartly can be turned into advantages. •

MAJOR AND FULLY INTEGRATED ZINC PRODUCER WITH CONSIDERABLE COPPER, PRECIOUS METALS AND LEAD CREDITS

WWW.KAZZINC.COM



Azamat Bektybayev

Vice President, Production
EURASIAN RESOURCES GROUP (ERG)

ENRC was recently reorganized into ERG. How did this affect the company's operations?

In terms of internal processes, the company is now going through a transformation. We adopted a different approach to corporate governance, as currently a lot of attention is allocated to tactical strategy and operations management. Apart from that, the company moved from one, two, and five-year planning. There is a special program developed in ERG that allows for modeling various market situations and measuring the impact of fluctuations in commodity prices on the entire company's operations.

Could you tell us about ERG's major running projects in Kazakhstan?

To date, in terms of output, ERG is the largest ferrochrome producer, as well as one of the largest iron ore and alumina producers in the world. ERG accounts for one-third of Kazakhstan's metallurgic and mining in-

dustry. ERG's major assets in Kazakhstan include Kazchrome, SSGPO, Aluminium of Kazakhstan, Kazakhstan Aluminium Smelter (KAS), Eurasian Energy Corporation (EEC), Shubarkol Komir, and a transport company, Transcom.

Kazchrome represents the ferroalloys division, which comprises four mining objects and two metallurgic plants. Chrome ore extraction is carried out in two mines, '10 years of Kazakhstan's independence' and 'Molodezhnaya' and 'Yuzhny' pits. Manganese ore is extracted in 'Tur' mine. Aktobe ferroalloys plant completed construction of fourth smelting shop, which is also known as new Aktobe ferroalloys plant. The cost of construction is estimated to be about \$850 million. Once the shop reaches full capacity, we are hoping to produce 440,000 metric tons (mt) of high-grade chromium alloy per year.

The iron ore division is represented by Sokolov-Sarbai Mining Production Association (SSGPO) which comprises four large pits, one underground mine, an enrichment plant, and a pelletizing shop. There also are non-core assets - dolomite and limestone open pits. We produce about 40 million mt of ore and 16 mt of iron ore products a year. Given the current market situation, we are planning to extract about 32 million mt of ore and produce about 12 million mt of iron ore materials.

The aluminium division of ERG comprises Kazakhstan Aluminium Smelter (KAS) and Aluminium of Kazakhstan (AoK), which represent the entire aluminium cluster in the region. Alumina is produced at Pavlodar aluminium plant, which is a part of Aluminium of Kazakhstan. 'Krasnooktyabrsky' and 'Torgaysky' mines' processing facilities supply PAP with bauxite. This year, alumina output will reach about 1,400,000 mt. Part of the aluminium is exported, and the rest is used to produce primary aluminium at our plant. This year, we are planning to produce 220,000 mt of primary aluminium. Energy division comprises 'Vostochny' coal mine at Ekibastuz basin and Aksu power station that generates about 14.3 billion kilowatt hours, which makes it the second-largest power station in Kazakhstan.

What are the company's plans regarding geological exploration of existing deposits?

Our company is running geological exploration work to increase the reserves. Explo-

ration works during 2012 and 2013 resulted in the growth of the iron ore reserves at the Sokolovsky open pit by 70 million mt. ERG was awarded a contract for the exploration of South-Kempirsai ore field, where it is most likely to discover commercially significant amounts/reserves of chrome ore. ERG also runs exploration at bauxite objects. We are currently ascertaining the reserves of the Taunsor field. Once the geological exploration is completed, we will decide about production.

How have export markets changed over the last one or two years?

One of the major changes for our company is drop in demand for iron ore products in China. Although in 2014 we exported up to 2 million mt of iron ore, in 2015 the figure will reach 500,000 mt in the best-case scenario.

How is ERG contributing to improving the social and economic situation in particular cities where it operates?

ERG is a socially oriented business. Over the past five years, the company invested about 100 billion tenge in social programs, both in social security for our employees and development of the regions; we also contribute to other charity projects across the country. ERG set up sports centers in Chromtau, Aksu, as well as some mosques, churches and synagogues in various regions. ERG's social investment is growing year on year; it is in the core of the company's vision. We have been signing memorandums of collaboration with akimats of Aktubinsk, Karaganda, Kostanay and Pavlodar regions for the past 11 years. Quite a few infrastructure projects were brought to life in line with these agreements. ERG comprises 'ERG Komek' ('ERG Help') charity that supports vulnerable social strata/populations as well as socially important and cultural projects.

What are the company's goals for the next three to five years?

Given the current situation, it is important to note that we are not planning on reducing the output or downsizing. Despite the negative outlook for demand for iron ore materials, we are planning to maintain production at 32 million mt. At the same time, we are planning to increase ferroalloys, aluminium and Shubarkol coal output. •



Nurmukhambet Abdibekov

●●● Akim (Governor)
GOVERNMENT OF KARAGANDA REGION

construction projects within the industrialization program. For these projects, we are planning to attract 400 billion tenge in 2016.

In 2014, several production facilities were brought back into operation, including production of silicone and barite concentrate in Saran. What other manufacturing capacities are you planning to bring back online this year?

In 2014, we also restarted production at the Zhezkazgan copper smelting facility, which has been closed for reconstruction for over a year. Together with this facility, total production volumes in the region increased by 10% in the first quarter of 2014, and the processing industry increased by 12%.

In 2015, we are planning to restart operations at a brick production plant in Temirtau, which used to produce 35 million pieces of brick a year. To ensure stable production at this facility, we are looking for new investments and we are hoping to finalize this process this year. In 2016, we are planning to start production of synthetic detergents in Shaktinsky. This facility has been closed for quite some time because of problems with financing, but we are hoping to solve these issues soon.

ArcelorMittal Temirtau plans to continue investing in Karaganda. How important is the presence of large international companies in mono-towns and how are you working on attracting more international players?

We are very interested in attracting new international companies to the region. ArcelorMittal Temirtau is important for Karaganda, and we are interested in seeing it increase its production capabilities. Moreover, we are offering new projects to it, which can be mutually beneficial. For example, we are developing a project to build a factory for complex alloys together with Sinosteel, and the products of this plant will also be useful for ArcelorMittal's production. We are currently discussing possible projects with POSCO as well. ArcelorMittal Temirtau initiated an extensive program to modernize its production processes and increase its efficiency. Since the entire economy of Temirtau depends on this facility, this has had a positive effect on the well being of the town and the region. In 2015, the company finalized reconstruction of the

third blast furnace, and now the power of the furnace is 20% more than before, which will allow the company to produce up to 6 million metric tons (mt) of steel a year. We also see that ArcelorMittal Temirtau is actively working to minimize the negative impact of its work on the environment and decrease the volume of emissions.

Kazakhstan's government is looking to introduce a subsoil code. How will this new legislation help to attract new investors in Karaganda?

The changes that will be introduced in subsoil legislation will help us increase the investment attractiveness of the mining sector through shorter approval times and simplified processes of getting licenses and approvals. We hope that the new code will help attract investors to explore depleted deposits, which will be a very positive move that will introduce new technology and processes. We hope that our foreign counterparts will be able to teach our local professionals new methods of working.

Production of coal in Kazakhstan is expected to reach 150 million mt by 2020. What role will the region play in reaching this target?

The Karaganda region is one of the largest coal mining regions in the CIS countries. Unfortunately, mining facilities do not operate at 100% capacity, which means that we will be able to ramp up our production if necessary. This year, we are planning to produce 33 million mt of coal. In current conditions, where the emphasis is put on value-added products, we are not only considering coal for power generation, but are also looking at coking coal, as well as developing carbon chemistry for the production of synthetic fuels.

What is your expectation regarding the development of the mining industry in Karaganda for the next five years?

We see that companies in the region are modernizing their operations and production capabilities and improving their employees' conditions. We are also actively looking for new investors. All of these factors allow us to remain optimistic about the future development of the industry in Kazakhstan and in Karaganda in particular. •



Vijay Mahadevan

●●● CEO
ARCELORMITTAL TEMIRTAU

How supportive has the local Karaganda government been?

ArcelorMittal is the only integrated steel company in Kazakhstan. The government has always been supportive of the steel and mining industry. In the economic downturn of 2008, it was necessary for ArcelorMittal to carry out cost optimization, an action countenanced by the government. Support from the government is ongoing. Karaganda is the prime industrial region for Kazakhstan.

Strategically, how important is Kazakhstan globally to ArcelorMittal?

Kazakhstan is very important to ArcelorMittal. It is a politically stable country, which welcomes and encourages foreign investment. For ArcelorMittal it has proved to be one of the safest locations to invest. And also there is close engagement with the government to attract foreign investments. So, it is ideal place.

How have you managed to mitigate the drop in the Russian ruble and the increase in operational costs combined with lower commodity prices?

The market that we are operating in is challenging: falling demand, a significant increase in imports, uncompetitive raw material costs and a very challenging export market. To address these challenges and to offset higher operational costs, we regularly review our operations and have strong cost-reduction initiatives to improve productivity but never compromise on safety. We benchmark our prices against competitors and build into our cost structure the fluctuating commodity price.

What is your assessment of Kazakhstan's current infrastructure and its impact on mining investments?

Mining locations are remote, but rail access in Kazakhstan is always nearby and is operational all-year-round, even at temperatures of -40 degrees Celsius; ArcelorMittal has never had issues with the movement of resources from mines. Today, rail infrastructure is overloaded; it is designed to cope with the freight volume of 10 to 15 years ago. For movement of all goods, road construction is required to alleviate rail-traffic congestion; the rail system also needs to be updated to facilitate high-speed rail, which would reduce logistic costs for producers and mining companies. Kazakhstan is land-locked and rail is its only means of moving bulk material.

What changes do you anticipate the new mining code will bring and what are the main challenges for investors coming to the country?

The current mining and labor codes are old and require changing; modifications will bring the country in line with other global mining jurisdictions. The new mining code will give a level playing field for international investors. In the recent past, the geopolitical situation in Kazakhstan would have been the main challenge, but the country has always been open to foreign investors, particularly in the mining industry. Geological surveys confirm that there is a plethora of resources; in the northwest, we can extract iron ore two meters from the surface. The home-market has to be developed; currently, consumption of resources is limited amongst the population of 16 million.

How are you ensuring that environmental damage sustained from mining extraction is minimized?

Part of our capital expenditure is dedicated to environmental sustainability, i.e. reducing emissions from our steel facility. Underpinning all our actions in running our mining business is maintenance of what I term our license to operate. This means that beyond health and safety and environmental sustainability, this requires strong community and stakeholder engagement. With regards to environmental sustainability, to give you an example, we are partnering with another company to capture methane gas present in pockets in our coal mines to produce 40 megawatts (MW) to 50 MW of eco-friendly generated electricity, rather than burning coal.

Where do you expect ArcelorMittal Temirtau to be positioned in five years?

We are operating in a challenging environment therefore our priority is to continue executing our cost reduction plan, including the improvement of primary and downstream processes, optimization of ore mix, reducing fuel and energy consumption, improving quality. Our priority is to secure a sustainable future for the company and our employees. If the market improves including commodity prices, ArcelorMittal Temirtau is planning to increase its production of 3.5 million metric tons (mt) to 6 million mt and thereby consumption of mining products from 11 million mt to 14 million mt. •

●●● **In recent years, investments in the Karaganda region have significantly increased, and several large-scale industrial projects have been finalized. What are your expectations for investments in 2015?**

In recent years, there have been increasing volumes of investment, which is related to the large-scale projects in the region. Since these projects have been finalized and the financial situation is weak globally, we expect a lower level of investment for 2015 than in 2014.

According to our estimates, we will receive over 380 billion tenge for investment in the region, which is 3% to 4% lower than in 2014. Nonetheless, we will continue to work to attract more. The processing industry is a key sector where we want to increase investment. This is related to ArcelorMittal Temirtau's program for modernizing and upgrading production capacities at Kazakhmys Corp., and other

●●● **Can you give details of the overhaul and turnaround that you have achieved in Temirtau?**

The acquisition of Temirtau was an important for ArcelorMittal and complemented our portfolio of assets. Steelmaking and mining are capital-intensive businesses, which means that high levels of investment are required to ensure the running of the operation. In the past twenty years since ArcelorMittal first acquired the plant we invested \$5 billion in the business, including modernizing our coal and iron ore mines. Over the last four years, we have invested more than \$1.5 billion in our operations in Kazakhstan and, as a result of this investment, our operations are more efficient and technologically advanced than at any other time in our history. Safety in our mines is our top priority. One of the main investments done was alleviating the problem of methane pockets in our coalmines; these methane pockets are unique to the Karaganda region.



Bakhtiyar Krykpyshv

General Director
KAZAKHMYS CORP.

ability of non-core projects and work on new projects.

Copper prices remain quite low and force mining companies to look for ways to reduce their cost of production. How is Kazakhmys planning to keep costs to a minimum?

We are planning to change the system of mining at our deposits in light of low copper prices. We are currently using room-and-pillar mining method at them, which allows us to mine all the ore that we have, but which is also very expensive. We will now be moving towards using in-between room tailings with high metal content and those copper cathodes will be of higher quality.

We are working on several other programs to optimize processes and reduce costs. Where it is necessary, we are increasing our production or the quality of the copper, we are looking to use more efficient equipment. In 2015, the copper price reached record lows, so we understand that we need to change our methods to remain profitable.

Mining companies across the world are struggling to find qualified talent. How is Kazakhmys addressing this problem?

We are certainly having difficulty finding the right talent. At the same time, we are working hard to ensure that we have a reserve of talent, which is why we are trying to decrease the deficit of qualified people and are looking to continuously train them. Kazakhmys has two training facilities: one in the Balkhash region, where we are training metallurgists, and the other one in the Zhezkazgan region, where we are preparing specialists for mining and beneficiation. The training process lasts three years. For the duration, our students receive scholarships and are then hired by the company. Kazakhmys pays for the entire course of education. We are also working with the leading institutes in Kazakhstan and neighboring countries, including close collaboration with the Mining Institute in Saint Petersburg and the National University of Science and Technology in Moscow. We are sending our students to study there as well as follow internship programs at different companies, where they can gain valuable experience.

Historically, the main market for Kazakhmys' copper has been China. How

has this situation changed over the past couple of years?

At our Zhezkazgan facility, we have an option to convert copper cathode to copper wire. The production capacity is 50,000 metric tons per year (mt/y). We produce this for our clients in Kazakhstan and China. In 2014, the share of exports to China was about 80% of total volume. Today, this share has decreased to 64%, as the situation has changed in China mainly due to internal politics and external factors. In this light, we are looking for new off-take markets.

A positive factor for us is the current situation with the Russian ruble, which helps us to decrease our cost of transportation and makes exports to European markets more profitable.

Kazakhmys pays special attention to industrial safety. Can you please tell us about the various programs that you have in place to promote this?

In 2012, we identified a five-year program to decrease the number of accidents at our facilities. Every year, we invest significant amount of money to support this cause. This money is invested into modernization of industrial processes, creation of safe conditions, purchasing of the most innovative personal protective gear, etc. Our goal is to improve all the indicators of industrial safety. We strive to achieve zero fatal accidents and reduce work accidents by 40%. We are improving our medical-help standards as well.

What are your plans for the next three to five years?

We are planning to start operations at a new Zhilandinsky deposit in the Zhezkazgan region, which will begin operations in 2016 and will achieve full production capacity by 2021. Close to Zhezkazgan we also have Zhaman-Arbait 2 deposit, which will become operational in 2016. In the Karaganda region, we are planning to start production at Nurkazgan GOK, producing 3.4 million mt/y at first and reaching 4 million mt/y in 2017. Also, we are planning to expand all of our existing deposits and increase their efficiency. Finally, we are looking to integrate hydrometallurgical processes for a more efficient extraction of ore.



National Center on Complex Processing of Mineral Raw Materials of the Republic of Kazakhstan



ENSURING SUSTAINABLE DEVELOPMENT OF MINING AND METALS PRODUCTION SECTOR OF KAZAKHSTAN

Main directions of activity of RSE NC CPMRM RK are aimed at system solution of problems in all stages of mining and metallurgical cycle, from mining, dressing, processing to produce of final products. They include:

- carrying out complex research of subsoil, mineral resources and their economic assay for the development of geology and mining
- development of effective and environmentally clean and safe technologies for ore deposit development; Geomechanical substantiation of technological parameters of ore deposits development, development of automation systems, planing and design of mining works, mechanisation of underground and open pit mining processes.
- development, engineering and implementation of highly effective technologies in ore beneficiation and processing
- environmental assay, purification of drinking and waste waters.

Address: Republic of Kazakhstan, 050036, Almaty, Zhandosov Str., 67
Tel: +7 (727) 259 00 70 Fax: +7 (727) 259 00 75
E-mail: nc@cmrp.kz / cmrp@mail.ru Website: www.cmrp.kz

OVERHAULING KAZAKHSTAN'S SUBSOIL REGULATIONS

Can a new mining code bring Kazakhstan's regulatory framework in line with international jurisdictions?

●●● Kazakhstan's subsoil regulations continue to be a major impediment for the country's mining industry to grow and attract foreign investment. Although minor changes have already been implemented, the current regulations are still cumbersome and need upgrading. In 2014, lawmakers put forth an ambitious plan to bring Kazakhstan's subsoil regulations into line with other international mining jurisdictions. In consultation with law firms operating in Kazakhstan, this article will outline both the recent and proposed changes to the country's subsoil regulations.

In 2014, Kazakhstan's President Nazarbayev described the mining sector as vital to the country's economy, but lacking foreign investment. Michael Wilson & Partners, a law firm operating in Kazakhstan, reports that a joint committee of the relevant ministries prepared a draft Concept of the new Subsoil Use Code later that year. The expected timeline is: "the Concept will be approved by the Government of Kazakhstan by mid-2015, and the draft Subsoil Use Code itself will then be prepared and referred to the parliament of Kazakhstan for further approval by 2016, so that the Code is in place and takes effect during 2016."

Michael Wilson & Partners also says that some amendments to the existing subsoil laws were made in 2014: "The existing Law on Subsoil and Subsoil Use was amended in 2014, with effect from 2015 to implement new and to amend existing definitions, namely (but not limited to) mostly unexplored territories, and subsoil use rights associated therewith; auction procedures; sample subsoil use contracts; technological mineral formations and strategic resources. For example, mostly unexplored territories are defined as territories that have preliminarily valued forecast resources. The exploration rights for such territories are granted in a simplified manner. Auction regulations were introduced as simplified procedures to choose an investor with the highest signing bonus proposal, provided that the same met all auction prequalifying obligations."

Some of the major changes have already been incorporated into the Concept, which include: "First Come, First Served" basis to apply for the right to explore, develop and mine currently vacant and unallocated territory (mostly unexplored); economic incentives: land and property tax exemption, the application of international accounting standards for tax purposes, no signing and commercial discovery bonuses, royalty exemptions, etc.; open access to all available geological data and information," according to Michael Wilson & Partners.

Most of the majors, like BHP Billiton and Vale, have come and gone, but Kazakhstan is working hard to lure them back along with

smaller players such as Iluka Resources, who have only recently ventured into Kazakhstan. "The development of a regulatory regime that is stable, transparent, and takes full advantage of the experience and expertise of companies with global reach, such as Iluka, represents an important step in attracting the type of foreign investment that the President and Prime Minister have prioritized for Kazakhstan. Achieving the right policy and regulatory settings will help ensure the long-term development of Kazakhstan's highly prospective minerals sector, and Iluka looks forward to working with the government as it undertakes reform of the mining code," said Alison Morley, country manager of Iluka Resources in Kazakhstan.

There are, indeed, great expectations for the new mining code, as highlighted by Albert Rau, the vice minister of Investment and Development: "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 and remove administrative barriers on all levels.

These changes should boost the development of junior companies and simplify procedures for all mining companies."

●●

Harmonization of Kazakhstan's mining code will be of great benefit when there is an upturn in the mining market. When the upturn occurs, we anticipate investor interest predominantly from the Asian or Gulf regions.

- Umid Aripdjanov,
Partner,
Colibri Law

Yet the new code alone will not act as a magic wand to reawaken Kazakhstan's mining sector. "Arguably, legal acts alone cannot produce a surge of exploration activity in Kazakhstan. Global commodity prices and new investments are major contributors towards stimulating the mining industry. If commodity prices are depressed and capital expenditures for a new mining project are high, there will be little movement in the market. Harmonization of Kazakhstan's mining code will be of great benefit when there is an upturn in the mining market. When the upturn occurs, we anticipate investor interest predominantly from the Asian or Gulf regions," said Umid Aripdjanov, partner at Colibri Law. "A further change will be the creation of a financial and arbitration center in Astana. It is planned to invite 500 foreign English-speaking judges/arbitrators with English law governing the arbitration, giving investors more confidence to file a claim," added Aripdjanov.

As these changes are taking place, anticipation and great expectations are building among investors and, indeed, when the upturn in the global mining industry occurs, Kazakhstan should be well positioned to deal with higher demand for its mineral wealth.

Environmental Standards in Kazakhstan

"Subsoil users in Kazakhstan are subject to extensive environmental protection regulation. The Ministry of Environmental Protection of the Republic of Kazakhstan (MEP) is the principal State authority in the sphere of environmental protection. Among other things, it issues environmental permits and licenses and establishes the limits for environmental emissions. Individuals and legal entities that use the environment (e.g., subsoil users) are subject to state environmental control. MEP carries out such control by organizing state environmental inspections. Various aspects of business activities are subject to environmental requirements. For example, a positive state environmental expert evaluation must be obtained in relation to projects involving an environmental impact before such projects may begin. Enterprises engaged in environmentally hazardous business activities are subject to the mandatory requirement of obtaining environmental insurance covering potential damage as a result of environmental contamination," according to Baker & McKenzie, a law firm.

Despite having detailed laws related to environmental protection, these standards are still behind other international mining jurisdictions. Kazakhstan's environmental laws are often poorly enforced



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).

- Albert Rau,
Vice Minister,
Ministry of Investment and Development



and companies in the past have been more focused on increasing profits rather than sustainable development. However, this trend is changing and companies, especially those with foreign shareholders, are becoming concerned with environmental protection and are often the champions of applying policies similar to their countries of origin; this is in turn spearheading efforts by the government to follow suit and get more serious about the environment. "We are not using any dump trucks, but instead our conveyor belts can move just like dump-trucks, which also reduces our capital costs. Metso has designed and produced the largest crushing unit (LT-200) specifically for Koktaszhal. This installation is safe for the environment and reduces carriage by truck at the open pit mine. The structures weigh about 800 metric tons, but nevertheless can be easily moved around the mine," said Ruslan Yun, chairman of the supervisory board of Altay Polymetals.

Service providers are also participating in the increased level of environmental protection at mines around Kazakhstan. One example is Orica, a worldwide leader in explosives with a presence in Ust-Kamenogorsk. "Orica has very high SHEC standards all over the world, including in Kazakhstan. This is not related only to our own plants and service centers, but also applies to how we work at customer sites, so our customers can be confident that our people on their sites are fully compliant with the highest levels of safety and environmental protection. The use of our explosives is also environmentally safe, as well as safe for people who use it. The use of emulsion in comparison with TNT-based explosives and others significantly improves the ventilation process, which improves productivity. We also have more advanced technologies that can reduce environmental impacts, such as electronic detonators, which enable reduced vibration," said Julia Yugay, country lead at Orica-Kazakhstan.

Technological improvements introduced in a number of mines across Kazakhstan can add up to have a significant positive impact on the environment compared to using older technologies. These kinds of initiatives can lead to improved environmental standards across all industries in Kazakhstan. •



Michael Wilson

Director
MICHAEL WILSON & PARTNERS, LTD.

Resources in Kazakhstan that were discovered by the Soviet Union in the 1950s and 1960s are becoming depleted, as is the State balance, and new exploration is required. Since the demise of the Soviet Union, only a relatively small amount of exploration has taken place in Kazakhstan. The Government is now addressing this problem and is taking action to replenish the reserve base leading to the reform of the mining sector. Within the reform, Kazgeology has been created to gather mining data, digitize it and possibly making it available to mining companies. The Government has made funds available to Kazgeology to carry out its own exploration, and to cooperate with sound foreign geological companies.

There are two stages to the reform. Phase one, the easy reforms, currently being undertaken, i.e. to take away the state preemptive rights (except for listed projects of national significance); introduce new definitions and concepts, allow the rapid concession of mostly unexplored territories, simplify and conclude the auction procedures, introduce better sample subsoil use contracts. The rationale behind the changes is to expedite the approval procedure for the farm-in and farm-out of exploration blocks. There is also some streamlining of the taxes that have to be paid. A big issue is that there is no cost-non guarantee that an exploration company will be granted the rights to develop a block after the initial exploration phase; formerly, there was a complex license for subsoil use contract with procedure outlining and embracing both exploration and development.

Phase two of the reform will be a new subsoil use code, incorporating new practices and provisions, i.e. the availability of territory on a 'first come, first served' basis, preliminary exploration, guarantees for the rights to carry out subsequent operations (e.g. development after exploration), easy access to the local stock market, third party arbitration agreements, open access to all available geological data and information, tax exemptions and other. Currently the new subsoil use code is in a draft concept form, not officially available in English. The timing for the introduction of the new subsoil use code is unclear; it is suggested that it will be introduced by the end of 2015 and approved in 2016. The primary question is to what extent will the system change in practice, i.e. whether the old Soviet underground mining regulations will

be updated; and will the guarantee of development rights be granted. Investors are interested in Kazakhstan but international mining companies have yet to impact this jurisdiction; albeit, there are national companies very active in Kazakhstan, i.e. Kazzinc, Kazchrome, Aluminium Kazakhstan, Tau-Ken Samruk, Kazgeology, Kazatomprom, KazMunayGas – most of these projects are privatized versions of Soviet mines. The lack of an equity market in Kazakhstan is holding back the development of its resources.

Can you give an example of a mining project that MWP has worked on?

The firm worked on the financing of the gold-copper mine at Varvarinskoye now owned by Polymetal; our brief was from the first joint venture in 1994 through to project financing and mine construction, commissioning and completion of the plant itself and all infrastructure and the eventual take-over of the mine by Polymetal from Orsu Metals Corporation. MWP's most recent big deal in the mining sector was in 2012 when it assisted with the dispute between KazakhGold and Polyus Gold, acting for KazakhGold.

The firm has also recently assisted Balausa company, a part of Ferro-Alloy Resources Ltd., on its vanadium project (the largest in the world) and is heavily involved in the Jerooy Project in Kyrgyzstan.

What role do you envisage for MWP in the Kazakhstan mining sector over the next five years?

Over the next five years, MWP will play a very significant role. We are members of the two working groups for the new subsoil use code, managed by both the Ministry of Investments and Development of the Republic of Kazakhstan, and the OECD members panel. There are fascinating opportunities still in the mining sector because several Soviet-era enterprises need to be reformed and restructured, for example, Kazphosphate, which the firm privatized; in addition the green shoots of exploration in Kazakhstan are beginning to show. •

Can you please give a brief overview of Michael Wilson & Partners, Ltd. (MWP) and tell us how much of your business is generated by the mining sector?

MWP was formed as a full-service law firm in July 1998, and has acted for the majority of the mining companies in Kazakhstan, including dealing with exploration, privatization, project financing, mine development and production and operations. The percentage of the firm's business from mining varies; currently, it is not as high, as metal prices are low, and there is very little equity and debt financing available. The firm's client base within mining, is more of existing clients; today, there are very few junior mining companies active in Kazakhstan, albeit, Kazakhstan has massive mineral potential.

What changes have taken place with the subsoil law and what changes do you anticipate?



Rustam Khodzhaev

Director
GEOMARK

at scientific departments of the Ministry of Emergency Situations and at mining facilities. Our client portfolio includes companies such as Kazakhmys, ArcelorMittal Temirtau, ERG, Bogatyr Komir, Kostanay Minerals, Interrin and others. In the field of equipment expertise and receiving certificates for application of the equipment in Kazakhstan, we work with suppliers from ex-Soviet countries, mainly Russian, and European. We carry out numerous industrial safety projects for Kazakhmys. For example, at Zhomart mine at Zhaman—Aybat deposit in Zhezkazgan region we developed a technological process for secondary processing of tailings.

How are you planning to grow your business in Kazakhstan?

Geomark has been certified with international standard ISO9001-2009 'Quality Management System'. We continuously work on improving the quality of the services we offer, carry out audits, look for new clients, offer new services and work on the existing methods. Moreover, we are working on promoting our brand, we participate in conferences and attend exhibitions and symposia in order to broaden our horizons and find new partners and clients. We are also planning to create a certification and testing center to test equipment for spark and explosion safety, as well as protection from moisture and dust. This center will serve as the first facility to test explosive materials. We are looking to expand the geography of our projects, and increase the amount of projects we work on in Karaganda, Pavlodar and Kostanay region, as well as in the eastern part of the country. One of the key priorities of the company is to increase professional and academic training of our staff. We plan to send our staff to study masters and Ph.D. degrees at the Mining Academy of the University of Freiberg, People's Friendship University of Russia and other universities.

Where would you like to see Geomark in five years?

First of all, we would like to maintain a leading position in this market and keep up with our business development plans. Two years ago, the average age of our employees was 52 and today with the new young specialists who are joining our team, the average age has decreased to 46 years. In five years, we are hoping to become even younger! •



GeoMark

- + Expert appraisal of industrial safety
- + Gas & Methane Control Research
- + Rock Mechanics
- + Industrial safety training

We help industries to operate safely.
Welcome to Kazakhstan, an industrially safe country.
www.nicgeomark.kz



N1



N2

Umid Aripdjanov, Assel Meiramgaliyeva

●●●

UA: Partner
AM: Associate
COLIBRI LAW

●●● Can you please give a brief introduction and history of Colibri Law?

UA: Colibri Law Firm was established in 2011 as a regional law firm covering all Soviet ‘stans’, i.e. Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Geologically, Kyrgyzstan and Tajikistan can be categorized as mining jurisdictions; Turkmenistan and Uzbekistan petroleum; and Kazakhstan as mining and petroleum attracting self-determining producers for whom 250 independent licenses have been issued for mining and petroleum, respectively.

What are your competitive advantages to attract new clients; and is the legal framework the same across the stans?

UA: Kazakhstan is a dynamic market for Colibri Law Firm; it has most growth potential of the Soviet stans and the company is expanding its Kazakhstan practice and employing more personnel. Colibri Law

Firm's only international competition is in Kazakhstan; in the other stans competition is predominantly national. To attract new clients, the firm embraces the whole region and not individual jurisdictions; it concentrates on specialization, for example, subsoil throughout the stans which are categorized into mining and energy. There is a CIS model for civil code, which is followed by nearly all the stans, so there are many common features. However, there are significant divergences among those jurisdictions that nonetheless can be easily managed with qualified personnel.

Can you outline the changes that have taken place in Kazakhstan's subsoil law?

UA: The new package of amendments to the subsoil law came into effect in January 2015. Prior to the changes, the government had the priority right-to-buy with any transfer of subsoil use right or “associated objects”, including shares. The amendment states that the government still has the right-to-buy but only for strategic deposits and areas, i.e. project of strategic importance to the state that may have an impact on national security (typically major deposits), which included to the list approved by the Government. Furthermore, there were excluded one of the grounds to termination of subsoil use contract as for breaching of the obligation under project document, but was included breaching financial obligations by more 70% for two consecutive years. As to the obtaining the subsoil use right, new method has been added as an alternative to the existing process – auction, which is based on signing bonus bids.

Will the new subsoil code encompass both mining and petroleum into one law; and how advanced are discussions on the new code?

AM: Oil and gas exploration discussions have predominantly taken place and are at the production stage. The new subsoil code will make more provisions for solid mineral projects to attract international investment rather than the legal aspect. Subsoil code will replace the current Subsoil Use Law. The new mining code is planned for 2016; this may change as the previous law adopted in 2010 endured 20 amendments and related 70 legal acts.

UA: The new mining code must take into account existing projects and have the abil-

ity to attract foreign and independent investors; it will also be a challenge for the regulators to accommodate hydrocarbons and hard minerals into a single statute.

What impact will the new mining code have on the mining industry and what else can the government do to improve the business climate?

UA: Harmonization of Kazakhstan's mining code will be of great benefit when there is an upturn in the mining market. When the upturn occurs, we anticipate investor interest predominantly from the Asian or Gulf regions.

AM: To improve the business climate, the following will be required: less bureaucracy; more civil and less public contracts and therefore fewer amendments. Public contracts are always subject to many amendments. Civil contracts will ensure more investment security as agreed parameters of a contract are observed throughout its lifespan and not subject to change through the public law. However, in some terms such subsoil use contracts still have special status distinct from the ordinary civil contracts.

UA: The government is preparing a document titled "100 Steps" to increase the attractiveness of Kazakhstan's economy; notwithstanding, the government should work closely with many consultants on improving the current global ranking of doing business in Kazakhstan. The present ranking of Kazakhstan is above Russia and the other stans. A further change will be the creation of a financial and arbitration center in Astana. It is planned to invite 500 foreign English-speaking judges/arbitrators with English law governing the arbitration, giving investors more confidence to file a claim.

What are your plans for the next five years within Kazakhstan's mining sector?

UA: Many global law firms are experiencing difficulty in securing the right personnel; prevalent in the CIS region. Practices in Russia are shrinking, and Kazakhstan is part of the Customs Union. There could be a trend for global law firms to restructure; if this happens, Colibri Law Firm will be standing-by for new legal associates to flood the market and Colibri Law Firm will select the best. The company is actively seeking to add to its personnel in Kazakhstan. •



Alison Morley

●●●

Country Manager
ILUKA RESOURCES

Can you introduce Iluka Resources on a global level?

Iluka is an Australian-listed public company based in Perth and ranked in the top 100 companies on the Australian Stock Exchange. The company has been involved in mineral sands exploration, mining, processing, and marketing for over 60 years and has operations across Australia and in the United States, as well as a globally distributed sales and marketing network. Iluka possesses the largest global market share of zircon production and is also a major producer of high-grade titanium dioxide. The company employs approximately 900 people worldwide and contracts a similar number for its mining and processing activities.

Iluka's core products are used primarily in the global pigment (titanium dioxide) and ceramics (zircon) industries, with additional applications including the production of titanium metal, nanomaterials, zirconium metal and zirconium chemicals. These materials are part

of everyday life, with uses as diverse as bathroom and kitchen facilities, sporting goods, healthcare, industrial welding, and aviation.

Can you give an update on your partnership with Kazgeology?

Iluka has been engaging with Kazgeology since its initial visits to Kazakhstan in March 2013, and the relationship has developed substantially since that time. Kazakhstan is a new jurisdiction for Iluka, different from those where it has traditionally operated, so it is important that the company draw on credible, well-regarded sources of in-country expertise.

Iluka has signed a number of memorandums of understanding with Kazgeology with the aim of benefitting from its considerable local knowledge and access to geological data. This relationship will also provide Kazgeology the opportunity to observe and learn from Iluka's highly experienced exploration and mining professionals in the field.

In addition to Kazgeology, Iluka is expecting to sign agreements with Kazakh governmental agencies to facilitate on-ground exploration later this year.

What are Iluka's expectations for the next three years, if the new Mining Code is implemented in 2015?

The Kazakh Government has put the energy and resources sectors at the center of its economic reform program, and Iluka welcomes plans to update the mining code. The development of a regulatory regime that is stable, transparent, and takes full advantage of the experience and expertise of companies with global reach, such as Iluka, represents an important step in attracting the type of foreign investment that the President and Prime Minister have prioritized for Kazakhstan. Achieving the right policy and regulatory settings will help ensure the long-term development of Kazakhstan's highly prospective minerals sector, and Iluka looks forward to working with the government as it undertakes reform of the mining code.

What type of training program will Iluka have in place in Kazakhstan for 2015 and will you be bringing personnel from Australia to commence operations?

Wherever possible, Iluka seeks to prioritize local employment for its operations and activities. Subject to agreements being finalized, initial training with Kazgeology will include participation in the preliminary drill

program, QA/QC management processes, and 3D exploration software.

Should the company's interests in Kazakhstan develop beyond the exploration phase to project development or mining – and I stress that is a long term prospect at this stage given Iluka's entry into Kazakhstan only occurred last year and on-ground exploration is yet to commence – the same approach would apply. In macro terms, the entry of global resource companies into Kazakhstan has the potential to present tremendous training and development opportunities for the Kazakh workforce – with ensuing benefits for the economy overall. But this is also two way street. Because just as companies can offer employment, training and skills development, no company entering a new jurisdiction can hope to succeed without the essential knowledge, cultural understanding, and goodwill of the local population.

The key is creating an operating environment where companies have the flexibility and investment certainty to collaborate for the long-term in partnership with local people, governments, and education institutions.

What innovations has Iluka introduced to the market in the last two years?

In 2014, Iluka launched eight new products into the market, all to defined product specifications.

The company also continues to progress commercialization of an acid soluble synthetic rutile product, as part of sulphate market development activities.

And, in 2014, Iluka acquired an 18.3% stake in Metalysis – a UK based company that is developing a potentially disruptive technology for the production of titanium metal powder. If realized, this could materially increase future demand for Iluka's products.

What are your plans for the next five years?

Subject to staged progress, in five years, I would expect to see Iluka's exploration program well established and possibly even beginning to bear results. As a geologist by training, the hope for a substantial discovery springs eternal!

I would also hope that the government's current reform efforts are implemented and that Kazakhstan begins to see the benefits of sustained foreign investment in its mining sector. Ultimately, as Iluka's country manager, I want to ensure that the company is a well-regarded and substantive corporate citizen in Kazakhstan. •



THE BIG DIG: EXPLORATION



“Negotiations with Kazgeology have been concluded and an agreement signed for an exploration project in the Korgantas area in the Karaganda province in central Kazakhstan. Discussions are on going with Kazgeology for a further project in central Kazakhstan-Balkhash-Saryshagan. Once projects are agreed, we will be in a position to commence grass-roots exploration.”

- Gary Hodgkinson,
Director, Central Asia District,
Rio Tinto

SLOWLY ATTRACTING INTERNATIONAL PLAYERS

Mineral Exploration in Kazakhstan

••• The lack of exploration may be the largest obstacle to growing the mining industry in Kazakhstan. In 2008, the government imposed a moratorium on new exploration to prevent speculation from undermining its mineral properties. Although the ban has now been lifted, new exploration remains limited. Yet most of the country's current reserves are becoming depleted, so Kazakhstan needs to increase exploration, and one key development in recent years was the creation of Kazgeology, a state-owned company responsible for geological exploration. "Geological exploration remains one of the least developed sectors in Kazakhstan. The government and industry accept the fact that Kazakhstan is underexplored. In the past 20 years, companies have been relying on Soviet geological information, which, regardless of its quality, is not enough to open the potential of the country.

After the collapse of the Soviet Union, there was no exploration in Kazakhstan, as companies were more interested in developing other industries and technologies. Luckily, now the situation has changed. First of all, the government created 'Kazgeology' - an organization responsible for geological exploration in the country. Secondly, a special state organization was founded, and the government now spends money on geological exploration. These changes make it easier for private enterprise to take part in geological exploration, and, at the same time, there is a realization that now these companies have the rights to those deposits that they are exploring," explained Nikolay Radostovets, chairman of the Association of Mining and Metallurgical Enterprises (AGMP). One multinational conducting exploration activities is Rio Tinto. "Our global strategy is to build local partnerships; this supports

Image: Government of Karaganda Region



development of the local industry, and we benefit from local knowledge. In some jurisdictions local joint ventures are mandatory by government legislation, a scenario with which we are comfortable. Our objective in Kazakhstan is to run a profitable mine that will give healthy investor return. In 2010, we commenced negotiations with Tau-Ken Samruk; after lengthy negotiations, in 2013 we stepped back from the opportunity, as no viable commercial arrangement could be reached. After consultation with government officials, it was suggested that we work with Kazgeology, as their mandate mirrored our aspirations for the Kazakhstan project. Negotiations with Kazgeology have been concluded and an agreement signed for an exploration project in the Korgantas area in the Karaganda province in central Kazakhstan. Discussions are on going with Kazgeology for a further project in central Kazakhstan-Balkhash-Saryshagan. Once projects are agreed, we will be in a position to commence grass-roots exploration," said Gary Hodgkinson, director of Central Asia district at Rio Tinto. Iluka Resources, a Perth-based company that possesses the largest global market share of zircon production and is a major producer of high-grade titanium dioxide also set its sights on Kazakhstan. Having only recently established a presence in the country, Iluka's new country manager, Alison Morley, said: "Iluka has been engaging with Kazgeology since its very first visits to Kazakhstan in March 2013 and the relationship has developed substantially since that time. Kazakhstan is a new jurisdiction for Iluka, different from those where it has traditionally operated, so it is important that the company draw on credible, well-regarded sources of in-country expertise. Iluka has signed a number of memorandums of understanding with Kazgeology with the aim of benefitting from its considerable local knowledge and access to geological data. This relationship will also provide Kazgeology the opportunity to observe and learn from Iluka's highly experienced exploration and mining professionals in the field. In addition to Kazgeology, Iluka is expecting to sign agreements with Kazakhstan government agencies to facilitate on-ground exploration later this year." In addition to Rio Tinto and Iluka Resources, Kores or Korea Resources Corp., a Korean government-owned company, is another player interested in Kazakhstan's potential. "South Korea is among the top 10 largest mineral resources consumers worldwide and Kores, as a government-owned entity, is tasked with ensuring a steady supply of raw materials for our resource-hungry economy. Kores is involved in numerous projects around the world, the most notable of which are the Ambatovy nickel project in Madagascar and the Boleo copper project in Mexico. It is in this capacity that Kores is also greatly interested in working in Kazakhstan. In 2014, Kores signed an agreement with Kazgeology for a project for complex ores exploration at Dyusembay area in the Karaganda region. Other areas of interest are potential deposits of copper, zinc, and rare metals in the northern and eastern parts of Kazakhstan," said Jong In Kim, chief representative of Kores in Kazakhstan. The low level of exploration in Kazakhstan is an ongoing issue, but as the government is keen to attract foreign investors, the country may have a very different industry makeup in 10 years in terms of juniors and other exploration companies. •



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.



REPUBLIC OF KAZAKHSTAN
 Almaty, 050051, Dostyk ave.
 172 tel/fax: +7 (727) 261-90-90 ext. 5267
 email: office@syrymbet.kz
 www.syrymbet.kz



Ruslan Yun

Chairman of the Supervisory Board
ALTAY POLYMETALS

current copper prices. For the first time in the history of the mining industry not only in the CIS, but also in the world, a 100% cyclic-flow line system will be used in the development of the deposit by open-cut mining. There are several features that make Koktaszhal unique not just in Kazakhstan, but in the whole of the CIS region. First of all it is the low-production cost compared to conventional methods, which allows us to save up to 50% on the cost of production. This also makes us to very competitive, especially at current copper prices. We do believe, however, that in the near future the copper price will increase. Secondly, there are no environment pollution sources, such as fuels and lubricants, oil, exhaust gases. Moreover, we are the first company in Kazakhstan to use paste thicker, which allows avoiding having to invest in tailings storage facilities. Thirdly, operational safety is at a very high rate due to the absence of moving equipment. There are just 32 people managing the mining process, which makes us an efficient company.

Altay Polymetals is using a number of innovative solutions at Koktaszhal deposit. Can you tell us more about these technologies?

We are using a patented technology at this deposit that allows us to significantly decrease costs of production. The patented technology allows running the cycle-flow line transport down to the end of the pit. We created a partnership with a German company called Takraf Tenova so that they can take care of IP protection, and patented this technology in Kazakhstan, Germany, Chile, Canada, Australia, Russia, and China.

We are not using any dump trucks, but instead our conveyor belts can move just like dump-trucks, which also reduces our capital costs. Metso has designed and produced the largest crushing unit (LT-200) specifically for Koktaszhal. This installation is safe for the environment and reduces carriage by truck at the open pit mine. The structures weigh about 800 mt, but nevertheless can be easily moved around the mine. This machine allows us to crush copper ore at a rate of 3,200 mt per hour.

What kind of geological exploration is Altay Polymetals currently involved in?

We are also conducting geological exploration

works in Khantau, Zhambyl. We see huge potential there. It is a large gold-copper-iron deposit. We have already invested \$20 million in drilling. Currently, we are very interested in creating a partnership with an international company to develop this deposit.

Koktaszhal deposit is located very close to Terekty village in the Karaganda region. Can you tell us about your involvement in the socio-economic development of this village?

People are our greatest asset, and we realize that we have to invest not just into training of our staff, but also in improving the quality of their lives. Unlike most of the mining projects in the country, we employ only local people. So we do not have to fly-in and fly-out workers to do basic jobs. Our workers come from the nearby Terekty village. We invested \$34.5 million in electrification of the village, where we have constructed and reconstructed multiple power-supply facilities. We constructed more than 6,000 m² of accommodation for our future employees, as well as sports facilities, a canteen, a swimming pool, etc. The reconstruction of the school and kindergarten is still in progress. Various study groups and activities were organized and musical and sports equipment was purchased for the children. The works on redevelopment of the streets of the Terekty village are being carried out as well. Additionally, a regular water supply was implemented; garbage containers and garbage removal trucks were purchased for the removal of household waste. More new jobs for residents of the village and the surrounding area are constantly being created.

What strategic plans do you have for Altay Polymetals for the next three to five years?

We plan to start production at Koktaszhal in November 2015 and achieve our production capacity in 2016. In the near future, we also hope to find a partner for the development of Khantau in the Zhambyl region. •

●●● **Can you introduce the Koktaszhal project to our readers?**

Koktaszhal is a copper-gold deposit located in Karaganda region. We began working at the deposit in 2011, and production is scheduled to commence in November 2015. We have around 92 metric tons (mt) of rock, 17 mt of mined rock and expect three to four mt of ore per year. Koktaszhal is a low-grade deposit with copper content of about 0.4%, however thanks to the technology and improved economics of the project, we can still have a good margin, regardless of the low grade. We are able to reach very high extraction numbers: up to 97% for copper, 82% for gold and 90% for silver.

What is unique about the Koktaszhal project and how does it differ from others in Kazakhstan?

The unique technology used at Koktaszhal allows us to maintain profitability even at



Gary Hodgkinson

Director Central Asia District
RIO TINTO

knowledge. In some jurisdictions local joint ventures are mandatory by government legislation, a scenario with which we are comfortable. Our objective in Kazakhstan is to run a profitable mine that will give healthy investor return. In 2010, we commenced negotiations with Tau-Ken Samruk; after lengthy negotiations, in 2013 we stepped back from the opportunity as no viable commercial arrangement could be reached. After consultation with government officials, it was suggested that we work with Kazgeology as its mandate mirrored our aspirations for the Kazakhstan project. Negotiations with Kazgeology have been concluded and an agreement signed for an exploration project in the Korgantas area, Karaganda province, central Kazakhstan. Discussions are ongoing with Kazgeology for a further project in central Kazakhstan - Balkhash-Saryshagan. Once projects are agreed, we will be in a position to commence grass-roots exploration.

How significant is your Korgantas project?

This is an early-stage, grass roots exploration project and we have yet to initiate the fieldwork. There are a number of local mineral occurrences in the area, and we are still evaluating the historical data made available to us once the agreement was signed. Our focus will be to look at the whole area to determine its potential. Rio Tinto believes in the geological potential; our exploration goal is to find a large, high-quality deposit. Our drilling programs will target possible mineralization under cover or at depths not previously explored. We have a six-year plan for Korgantas that will be continuously updated upon exploration findings; grass-roots exploration can take between three to five years.

Have you developed your plans to partner with Kazatomprom for a uranium project in Kazakhstan?

Plans for a partnership have not developed. Our immediate goal in Kazakhstan is to progress our copper exploration projects and then move on to other commodities. Rio Tinto wants to build a relationship based on execution rather than promises with government and Rio Tinto internal stakeholders, demonstrating that we can operate successfully in Kazakhstan.

How will the change in the mining code affect the industry?

Modernizing the mining code could have a significant impact on the industry. The global industry is well aware of Kazakhstan's resource potential, but is not convinced of its current political (i.e. transparency, stability) and commercial viability. A major impediment has been the legislation for modern mining and exploration, specifically hard-rock mining. It is not only necessary to change the legislation, but to imbed it into the bureaucratic process, making it easier for foreign investors and local companies to work in Kazakhstan; arguably, the imbedding process will be a major challenge. Kazakhstan government is making positive movement to encourage mining projects in the country, but the current legislation restricts the ability to bring in technology and capacity building. Kazakhstan's mining sector needs to develop a vibrant junior mining culture.

Has the lack of infrastructure in Kazakhstan been a problem?

The lack of infrastructure problem does not arise in the grass-roots exploration stage; Rio Tinto is expert in working in remote, challenging environments. Infrastructure is critical in the mine development stage, and would be evaluated before we commit to any major expenditure at feasibility study. Copper and bulk commodities require substantial road and rail connections, power and water. Access to infrastructure will impact the economic viability of development projects and we will monitor with interest programs to upgrade Kazakhstan's infrastructure.

What are Rio Tinto's plans in Kazakhstan for the next five years?

The outlook is positive for us in Kazakhstan, but the key issues are: results-based exploration work; a volatile global economy; and the need to understand the commercial stability in Kazakhstan. We see a long-term future in the country, and will continue to run our exploration programs developing a portfolio of projects. Development of long-term, sustainable mining operations is a complex and time-consuming process that involves the continuous advancement of a pipeline of projects from early stage exploration, through feasibility to mining operations. Over the next five years we hope to generate a number of quality exploration projects, one of which we would like to see moving into feasibility within five to 10 years. •

●●● **How significant is Kazakhstan to Rio Tinto compared to mining jurisdictions like China or Mongolia?**

There are two considerations for Kazakhstan: as a geographical hub for Rio Tinto's possible future operations in Central Asia; and its' wealth of mineral resources. Kazakhstan is a good location because of its close proximity to China; albeit, its infrastructure is a challenge but not insurmountable. The mineral that interests Rio Tinto in Kazakhstan is copper, plus any other opportunities that are of value. We are not focused on any specific commodity, but opportunities-focused. Arguably, Kazakhstan could become an important hub for Rio Tinto.

Can you give an update on your 50-50 joint venture with Tau-Ken Samruk for a copper project in northern Kazakhstan?

Our global strategy is to build local partnerships; this supports development of the local industry and we benefit from local



Tengiz Bolturuk

CEO
SYRYMBET

the fixed numbers in mid-summer 2015 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 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 may cause problems on the environmental side, so we have been working with Golder Associates and a local consulting company Terra since 2013 to assess the environmental impact of the project. It looks like it should not have any negative impact on the surrounding environment and local population due to usage of environmentally friendly technology. We have a good relationship with the local and provincial government, who support the project and 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 kilometers (km) from the mine site. Additionally, the government has committed to investing \$10 million in 24 km of an 110-kilowatts power line, which has been 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.

How do you expect the demand for and price of tin to evolve in the future?

The market can be unpredictable; for example, no one expected the recent price drop. Looking at the fluctuation of the past 10 years, tin increased to \$30,000 per metric ton (mt), but now it is below \$18,000/mt. Twenty years ago, the price dropped to nearly \$3,500/mt, bankrupting most of the old Soviet and western tin players. Prices are rising again because it is becoming harder to find tin deposits with strong potential. Additionally, tin consumption is stable and continues to rise. At the same time, the deposits of major players like

Indonesia and Bolivia are becoming depleted and decreasing in grade. For example, Indonesia's production dropped from 120,000 mt/y 10 years ago to 65,000 mt/y last year. We know the current and near future world demand and tin supply shortage. Kazakhstan and FSU countries are almost 100% importing tin from Asia. Syrymbet mine can cover this gap.

How does Syrymbet plan to finance the construction of the mine?

Strategically, we have a short list of potential investors. While tin is stable on the London Metal Exchange and well known in Asia, Australia, and South America, it does not have the same position in Europe and North America. We have discussed the prospect of entering the North American market with ITRI. We plan to do an IPO, but not in the near future. First we will start production so we can show the real potential of Syrymbet. All of our geological, mining, and metallurgical reports are distributed to investors so that they can do their own math and see the potential of the project. Once we start construction, we anticipate a project cost of approximately \$230 million. Local banks can finance this, so money is potentially available. Interest is increasing among Western and Chinese financial institutions, but they are waiting until the pre-feasibility study has been completed. They want to see the final project numbers produced by international standards before discussing the details. We know that Syrymbet is a feasible world-class deposit, with low mining and processing cost, well-developed and efficient technology, and strong economics, so we are confident in the project's future.

Do you have a final message about Syrymbet?

Looking at most of the other mining projects in Kazakhstan, many companies try to rush through development in an effort to save money and then must spend millions more to correct their earlier mistakes on the project development stage. We do not want to find ourselves in this position, which is why we are investing our resources and taking our time to do the job right. Syrymbet has a strong and promising future; we want it to serve as an example of a successful mining project in Kazakhstan done by international standards. •



Tony Thornton

General Director
SRK CONSULTING
KAZAKHSTAN

When SRK entered Kazakhstan in 2010, you made the country the base for Central Asia. What is Kazakhstan's significance in this setting?

SRK Consulting was opened in Almaty to be present on the ground for clients in Central Asia. Kazakhstan has the dominant economy and mining business in the region. Almaty is also well connected in terms of flights to other regions. In 2010, SRK started with only five consultants and the company has now grown to 25 consultants. Currently SRK is looking to recruit several more senior level consultants with extensive international experience in resource geology, and mining engineering to give the company more in house capabilities. SRK's aim is to grow to about 30 consultants and to service the needs of our clients here. As part of the SRK model, the company brings in expertise from our sister companies around the world, depending on the nature of the project. SRK prides itself

in delivering international expertise with a local context.

To what extent did SRK have to rely on global expertise and how much did the company have to adapt to the local conditions in Kazakhstan?

SRK provides expert opinion and technical solutions based on internationally recognized best practices. If technical advice on local requirements is needed, SRK collaborates with local design institutes. These local requirements differ significantly from the international approaches, but we have become quite familiar with managing the two approaches in parallel, minimizing the cost for the client, and avoiding duplication of work. For example, in the field of geotechnical engineering, precisely calculating the final safe pit slope for an open-pit project can result in a major savings on stripping costs. These calculations are based on direct observed rock-mass characteristics taken as part of a geotechnical investigation of the project site. The local requirement, however, would be for a generalized approach derived through application of rock standard types. The problem is that the final slope design is therefore a prescriptive result, which can be overly conservative, rather than an engineered study specific to the project, that we can produce with the subsequent cost-saving benefits. With the client's agreement, SRK will ensure that the data and the engineering processes that we use are adapted to meet local requirements.

How have mining standards in Kazakhstan been harmonized with the international system?

It is still a work in progress, but there is some advancement. SRK has been working with Kazgeology to advise the government on how to introduce the Committee for Mineral Reserves International Reporting Standards. This is a result of the government's initiative to attract foreign direct investment (FDI) into mining. So clearly in time there are going to be significant changes to the current situation. But it needs to be appreciated at all levels in government that attracting foreign investment is a highly competitive process. Investors do not want to know that reputedly all the elements of the periodic table can be found in Kazakhstan, but rather what are the benefits, and, most importantly, what makes

Kazakhstan a more appealing destination than somewhere else? The current marketing model of Kazakhstan does not promote these benefits to investors, and the government and its various agencies charged with attracting FDI could be more pro-active in terms of seeking out investors and bringing them to Kazakhstan.

What is SRK doing to help its clients overcome the challenges of infrastructure and logistics in Kazakhstan?

Compared to other mining jurisdictions, infrastructure is not a major challenge in Kazakhstan. In terms of the environmental impact management, SRK has an environmental science department. SRK is involved in several projects with clients who want industry best practices in environmental management of mines applied to their operations here.

An area that is not adequately addressed in Kazakhstan is mine closure and mining sustainability. Kazakhstan would benefit from remediation projects to clear up some legacy issues. SRK sees mining closure as an important part of the internationalization of the obligatory environmental practices in Kazakhstan. The government is currently seeking advice on what is considered best practices around the world and how they can be applied to avoid future legacy problems.

Do you have a final message about SRK?

SRK is a global company with a variety of service offerings to the mining industry. We work and succeed in some of the most challenging mining jurisdictions in the world. As for Kazakhstan, SRK would like to steadily expand and bring in more service capabilities in different technical areas like hydrology, for example. SRK is continuously looking for new talented individuals to join our team as well as new clients to join our growing client base. We are committed to Kazakhstan, as it is a country of huge natural riches and enormous opportunities. We will be proud to be a part of what will be a flourishing business opportunity. •



SPANNING THE PERIODIC TABLE: PRODUCTION



“We are very interested in attracting new international companies to the region. ArcelorMittal Temirtau is important for Karaganda, and we are interested in seeing it increase its production capabilities. Moreover, we are offering new projects to it, which can be mutually beneficial.”

- Nurmukhambet Abdibekov,
Akim (Governor),
Karaganda Region

TAKE YOUR PICK

Mineral Production in Kazakhstan

Kazakhstan has vast reserves of a wide range of minerals and metals. As stated above, virtually all elements of the periodic table are present in a country with a relatively small population. This section showcases some of them in greater detail as well as highlights new and exciting projects currently being undertaken.

...

Uranium

“Kazakhstan contains 12% of the world’s uranium resources and an expanding mining sector, producing about 22,830 metric tons (mt) in 2014, and planning for further increase before 2018. In 2009, it became the world’s leading uranium producer, with almost 28% of world production, then 33% in 2010, 36% in 2011, 36.5% in 2012, and 38% in 2013. Kazakhstan has a major plant making nuclear fuel pellets and aims eventually to sell value-added fuel rather than just uranium. Of its 17 mine projects, five are wholly owned by Kazatomprom and 12 are joint ventures with foreign equity holders, and some of these are producing under nominal capacity. In 2013, 9,402 mt was attributable to Kazatomprom itself, which was 16% of world production and put it slightly ahead of Cameco, Areva and ARMZ-Uranium One,” according to the World Nuclear Association.

Kazakhstan currently has no operational nuclear reactors after its only one in Aktau was decommissioned in 2001; however, the government plans to begin construction of two new plants in 2018. Besides Russia, Kazakhstan is also cooperating with the likes of Japan, China, India, and South Korea. China in particular presents an important export market as 55% of Kazakh uranium was exported there in 2014. International players, including Areva, Cameco, Toshiba and Uranium One, are also present and all are required to collaborate with Kazatomprom, Kazakhstan’s national nuclear company, as Kazakhstan is very keen to increase its technological base. One major player in the uranium business in Kazakhstan is Betpak Dala (South Inkai, Akdala mines), a joint venture of Kazatomprom, which owns 30%, and Uranium One, which owns 70%. Betpak Dala extracted 13% of the total amount of uranium mined in Kazakhstan in 2014. “It was planned to produce 1,000 mt/y of

uranium at the Akdala mine and 2,000 mt/y of uranium at the South Inkay mine. Since 2012, JV Betpak Dala LLP reached design capacity production and began to extract 3,000 mt/y of uranium. The Akdala mine was the first mine in the world which extracted in one year 1,000 mt of uranium by method of drill hole in-situ leach (ISL),” said Aleksander Uvarov, general director of Betpak Dala. Overall, Kazakhstan is certainly looking to benefit from nuclear power plant construction happening globally and can further increase its market share as the number one producer of uranium.

...

Gold

Kazakhstan’s proven gold reserves are 2,300 mt as of last year. There are 325 gold fields, of which 94 are in operation and 117 in exploration. Most reserves are found in eastern Kazakhstan in the Akmola, Karaganda, and Kostanai regions. The main companies operating in gold extraction are Kazzinc, Kazakhmys, Polymetal, Kazakhaltyn, Varvarinskoye, Altynalmas Gold, Metal Trading and Maikainzoloto. Projected reserves are estimated to be as high as 9,000 mt. Already explored deposits in central and eastern Kazakhstan will require deeper drilling while there are potential deposits to be found in northern and southern regions, according to Dr. Elvira Dzhanureyeva, head of service for analysis of the mineral

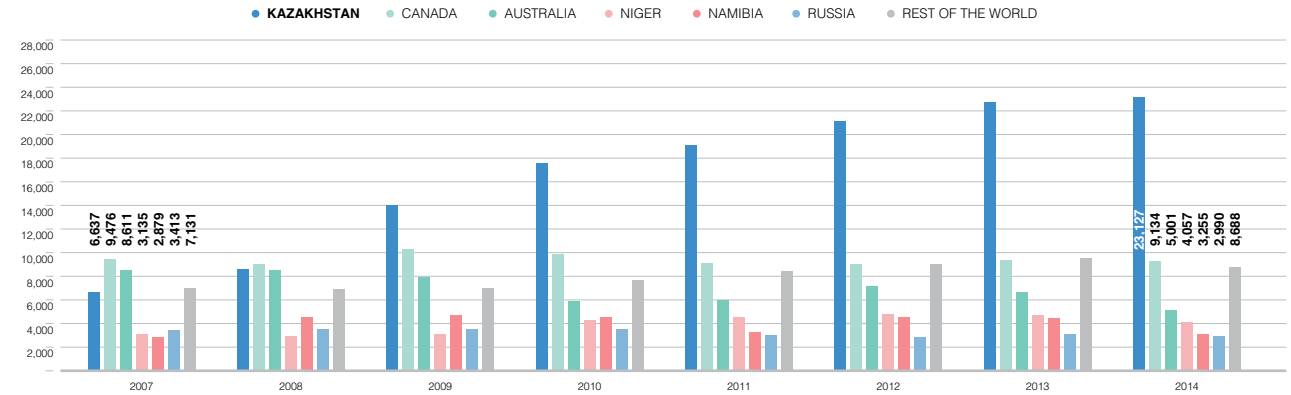
2,300 mt **50.4 mt**
 PROVED GOLD RESERVES GOLD PRODUCTION 2014

raw material sector and transparency of extractive industries of the Kazgeoinform National Center for Geological Information of the Ministry of Investment and Development.

There were 50.4 mt of gold produced in Kazakhstan in 2014. \$755.5 million was invested in gold mining last year, of which \$35.6 million went towards exploration. Kazzinc represented the lion’s share of this with 33%, Altynalmas with 15% and Kazakhaltyn and Varvarinskoye both at 11%. Projections for 2015 were expected to reach

WORLD URANIUM PRODUCTION, 2007-2014 (mt)

Source: World Nuclear Association.



\$846.9 million, of which \$40 million would go towards geological exploration. The Bozshakol mine currently being developed and scheduled to start operations in the last quarter of this year should also boost gold production as besides large deposits of copper, it also contains highly valuable by-products of gold. Gold is now becoming an important aspect for companies previously focused on other minerals.

...

Copper

Kazakhstan is currently behind other copper extracting countries like Chile, Australia, Peru and China in terms of exploring their reserves. On-balance, proven reserves last year were 39 million mt, mostly concentrated in eastern Kazakhstan and Karaganda. Kazakhmys controls about 72% of contracted copper reserves, according to Dr. Dzhanureyeva. As mentioned above, KAZ Minerals is currently developing its Bozshakol copper mine, which is the largest single mine development in the CIS region by both scope and volume of production. The mine will nearly double KAZ Minerals’ current production levels and has a projected lifespan of 40 years. KAZ Mineral’s second project, Aktogay, is also on track to begin production of its first oxide copper cathode in the fourth quarter of 2015.

39 million mt
 PROVED COPPER RESERVES

Despite record low copper prices, companies about to go into production feel confident that their operations will still be profitable. “The unique technology used at Koktaszhal allows us to maintain profitability even at current copper prices. For the first time in the history of the mining industry not only in the CIS, but also in the world, a 100% cyclic-flow line system will be used in the development of the deposit by open-cut mining. There are several features that make Koktaszhal unique not just in Kazakhstan, but in the

whole of the CIS region. First of all it is the low production cost compared to conventional methods that allows us to save up to 50% on the cost of production,” said Yun, chairman of the supervisory board of Altay Polymetals.

New entrants to the market are not yet in the production stage, but are actively involved in copper exploration. One such example, as previously mentioned, is Rio Tinto. Overall, \$1.15 billion is the forecast for 2015 in terms of investment in copper production, of which \$16.9 million will go towards exploration.

...

Tin

Tin is currently in short supply, as the electronics industry in Japan and China consumes roughly 50% of the world’s tin. Consumption has been beating production for the past several years, as old mines close and reserves are becoming depleted. The latest numbers by the U.S. Geological Survey estimate that the world tin supply to be 4.8 million mt, which is a decline in reserves since 1990. This has pushed up the price of the mineral, and new deposits and production capacities are badly needed. One major development in Kazakhstan’s and, for that matter, the world’s tin market has been a company that is a shining example of how local businesses have successfully navigated Kazakhstan’s business landscape and brought about thriving projects. Syrymbet, the exploration and soon-to-be production company of the Syrymbet tin deposit in northern Kazakhstan, controls 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 deposits 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 the total amount and quality of each product that we will be able to produce. The updated joint ore reserves committee 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.”

Syrymbet going into production will signify a much-needed relief to the short supply of tin on the world markets.

...

Coal

Kazakhstan has enormous coal reserves with 37.5 billion mt of recoverable coal, the biggest in Central Asia and representing 3.8% of the world total. The country has more than 400 coal deposits, of which a third are classified as brown coal or lignite deposits. Karaganda has traditionally been Kazakhstan’s main coal producing region and to the northeast of it are the Ekibastuz coalfields, some of the largest in Kazakhstan. The other locations include Maykubinsky as well as Kushokinskoe, Borlinskoe, Shubarkol, Karazhyrinskoe fields and several other smaller deposits. Russia is the largest export market, followed by Ukraine. However, since independence, Kazakhstan’s coal production has decreased by 35%. Some of the causes of this can be attributed to a poor safety record, but the more important issue is the lack of foreign investment in this sector.

Kazakhstan’s largest coal producer, Bogatyr Coal, owned by the American company Access Industries Inc., produces about 35% of Kazakhstan’s total coal output and develops northern Kazakhstan’s Bogatyr and Severny coal fields. It is also Kazakhstan’s largest exporter to Russia. This coal is mostly used in power plants in southern Russia. Production of coal in Kazakhstan is expected to reach 150 million mt/y by 2020 and Karaganda will play a crucial role. “Unfortunately, mining facilities do not operate at 100% capacity, which also means that we will be able to step up our production if necessary,” said Nurmukhambet Abdibekov, governor of Karaganda region.

.....
37,5 billion mt

PROVED COAL RESERVES

.....
 One of the biggest investors in Temirtau, a small mining town in Karaganda, is ArcelorMittal and the company has a great interest in further development of this industry. “ArcelorMittal Temirtau initiated an extensive program to modernize its production processes and increase efficiency. Since the entire economy of Termirtau depends on this facility, this has a great positive effect on the well being of the town and the region. In 2015, the company finalized reconstruction of the third blast furnace, and now the power of the furnace is 20% more than what it used to be before, which will al-

Image: KATKO JT

low the company to produce up to six million mt of steel a year,” added Abdibekov.

Kazakhstan has enormous coal reserves, which can be used for both export and to power the country’s industrial base.

...

Phosphates

Kazakhstan is in the top ten of countries with significant phosphate reserves. The country’s long history with phosphates dates back to Soviet times when it was the center of production for the region. The main producer is Kazphosphate with an annual capacity of 120,000 mt/y. Most of the deposits are in the Karatau basin. Kazakh companies are also interested in making more value-added products and are slowly moving away from the dig-and-ship mentality. “Kazphosphate is looking to upgrade its processing capabilities in order to create a range of value-added products, which will allow us to export them to new markets,” said Mukash Iskandirov, general director of Kazphosphate.

In 2013 Russia’s EuroChem received a mining license to develop phosphate deposits in Zhambyl region that may affect Kazphosphate’s dominant position in the market. “There are 45 explored phosphate deposits in the south of Kazakhstan; Kazphosphate is working on six of them. EuroChem has a license for the development of two deposits. We are happy to see new players coming to Kazakhstan, because we understand that they improve the overall economic wealth of the country. We think that in the near future we will see more players from Russia and other countries entering the market,” added Iskandirov.

EuroChem has ambitious plans in Kazakhstan. “We are developing mining of phosphate ores and will continue the development and construction of the deposit until 2018 when we will reach our production capacity of 640,000 mt/y. Current development of the base for raw material will allow us to do so. We want to finish the first phase of the project by the end of 2015 and begin production of phosphate rock. We are planning to finalize construction of the chemical plant by 2018 and begin production in 2019,” said Dmitry Valishev, general director of EuroChem-Karatau.

Kazakhstan’s considerable reserves of phosphate are attracting new investors leading to the diversification of its market players.

...

Lead and Zinc

Kazakhstan is fourth in the world in terms of its proven reserves of zinc and third in lead. The on-balance reserves are 35 million mt of zinc and 17 million mt of lead. These polymetals are concentrated in East Kazakhstan, Karaganda, and Kyzylorda regions. Zhairam, Kazzinc, Kazakhmys, Shalkiya zinc and NC SEC Saryarka are the biggest developers. Estimated reserves are 136 million mt of zinc and 58 million mt of lead according to Dr. Dzhanureyeva. New exploration is badly needed, as the currently developed deposits’

reserves life does not exceed 10 to 15 years. Exploration is being conducted on nine sites around Kazakhstan and the increase in reserves was one million mt and 1.9 million mt of zinc and lead respectively over the last 15 years. The output in 2014 was 93,000 mt of lead and 447,000 mt of zinc. 2015’s investments in the production of lead and zinc will grow to \$1.13 billion, of which \$3.2 million will go to exploration according to Dr. Dzhanureyeva. The biggest investors are Kazzinc, Vostoksvetmet, Kazakhmys, Nova-Zinc and Shaimerden.

.....
17 million mt

PROVED LEAD RESERVES

.....
35 million mt

PROVED ZINC RESERVES

...

Chromium and Manganese

Kazakhstan holds the world’s second largest reserves of chromium behind South Africa and also has the third largest reserves of manganese. ERG is the main player in this market in Kazakhstan. “Kazchrome represents the ferroalloys division which comprises four mining objects and two metallurgic plants. Chrome ore extraction is carried out in 10th Anniversary of Kazakhstan’s Independence Molodezhnaya and Yuzhny mines. Manganese ore is extracted in Tur mine. At Aktobe, ferroalloys plant we completed construction of the fourth smelting shop. The cost of construction is estimated to have been about \$850 million,” said Azamat Bektybayev, ERG’s vice president for production.

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 represents a significant development. “Voskhod Chrome’s integration process into YILMADEN Holding was flawlessly 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 YILMADEN Holding.

Yildirim’s investment signifies an increased interest from investors outside the CIS, a trend that is likely set to continue. •



Gerard Fries

General Director
KATCO JV

alone. In Kazakhstan, we have reached a cumulative production level of 20,000 tons in 2014 and will reach 30,000 tons at the end of 2016. KATCO was recently ranked 48 among the 500 largest companies in Kazakhstan.

Is KATCO currently involved in any exploration to increase its resource base?

When we began operations in 2000, KATCO was engaged in exploration. In fact, we inherited Soviet Union exploration, so there were already identified reserves. KATCO completed its exploration phase in March 2015 and is currently obtaining new reserves for exploitation that will be added to our existing reserves.

How does KATCO minimize the negative impact of mining on the environment?

KATCO is committed to minimize the impact on the environment of its operations. The company takes the environment into account at all stages of its mining projects. KATCO utilizes technology that has existed for half a century. On areas that have been operated then closed and remediated, we have observed regrowth of surface vegetation, implying no environmental issues. KATCO takes care to protect the surface of the steppe as the ecological aspect of our business is very important to us. For the subsurface, the wells plugged with cement after operation to prevent any leakage, and we ensure no contact is made with potable water aquifers. KATCO is equipped with tools to control all chemical parameters and radioactivity to prevent any contamination. Kazakhstani regulations are extremely stringent and will probably be tighter in the future and of course we respect them.

Does KATCO have difficulty searching for qualified employees in Kazakhstan?

Two-thirds of KATCO staff (around 1,265 employees) come from the South Kazakhstan Oblast and more than 51% from the Sozak district. Nevertheless, it is indeed difficult to recruit skilled workers. Local akims (heads of local government) are keen to have everyone from their region work in the uranium industry, but KATCO has stringent staff requirements. However, if they want young people to be educated, KATCO is always ready to assist and provide university grants.

How do you maintain profitability given the low price of uranium and how has the recent devaluation affected your operations, if at all?

First of all being profitable is necessary for KATCO's shareholders. We are striving to optimize each process, but there is no miracle solution. KATCO is involved in R&D, as both AREVA and Kazatomprom are interested in developing innovative technologies and solutions. There are no major or minor savings, but rather a day-to-day fight to improve our operations.

There are two sides to devaluation. Given that KATCO is selling a commodity at a price in U.S. dollars and costs are mainly denominated in tenge, devaluation mathematically improves our cost of production. However not all equipment are local, implying that there is an impact on imported goods and materials, which we are expecting to see very soon. As far as social stability is concerned, we have a permanent dialog with our employees and we take into consideration the social impact of the devaluation in our regular discussions with the staff and the employees representatives.

What could help attract foreign mining companies to Kazakhstan?

One of the more complex elements for operators is the existing purchasing rules. Subsoil use rules are complex, encourage local producers, and make it difficult for a subsoil user to operate. As far as KATCO is concerned, safety is our first priority, and according to the rules we are not permitted to 'blacklist' suppliers that we consider unsuitable in terms of safety, and we are obliged to select the cheapest supplier, even among local suppliers. KATCO would like a supplier's safety record to be a criterion to discriminate between good and bad suppliers, but this is not yet permitted. Also quality is not recognized as a selection criteria, and it remains difficult to introduce quality criteria in our technical specifications. Additionally, in order to attract investors, an open and stable framework is needed, which is difficult given the complex and changing purchasing rules. Finally, a pool of skilled workers is also necessary: KATCO is working on this aspect, and has signed several agreements with major local universities. •

●●● KATCO's history dates back to 1996. Please introduce us to KATCO and any historical milestones that have shaped its presence in Kazakhstan today.

KATCO is a joint venture between a French state-owned company, AREVA (51%), and Kazatomprom NAC JSC (49%). KATCO signed a subsoil use contract in 1999 for 40 years until 2039. We are active in the South Kazakhstan Oblast, in the Sozak District. Almost all currently operating uranium mines are located in South Kazakhstan and Kyzylorda Oblasts except one in North-East Kazakhstan. After industrial production start in 2005, an agreement was signed allowing KATCO to produce 4,000 tons of uranium production per year, which we did successfully in 2013 and 2014, and are continuing to do. KATCO is the largest In Situ Recovery (ISR) mine in the world since 2009, and represents 6% of the world's production



Aleksander Uvarov

General Director
BETPAK DALA

both Akdala and South Inkay, 20,000 mt have been extracted in total.

How does the present price of uranium impact the company's plans to increase production?

According to the company's development strategy, there are no plans to increase production. Actual reserves at Akdala mine will be enough for five years; in addition, prospecting works were started to increase the raw materials source in 2015. The contract on uranium production at South Inkay is valid until 2027 and prolongation of the contract is planned for more than 10 years, in connection with new reserves discovery. The low spot price of uranium has an impact on production economy, but we have continued to make profit by optimizing expenses and applying new technologies.

In 2018, Kazakhstan plans to begin constructing two nuclear power plants. Will production of uranium increase as a result?

Kazakhstan has been the world's leading producer of uranium since 2009 and now extracts 35% of total world uranium production. In 2007, Kazakhstan was the third largest producer after Canada and Australia, but today extracts more than Australia and Canada combined.

The Fukushima Daiichi nuclear disaster in 2011 negatively affected uranium consumption, but in such countries as China, Turkey, and India, in Africa and in the Middle East, construction of new power plants has been ongoing because these projects require more than 10 years to realize. Thus, it is unlikely that construction of nuclear power plants in Kazakhstan will affect the global price of uranium, but it will provide a moral boost, as the country will demonstrate that it can consume uranium as well as extract it. This decline in demand for uranium will pass, the industry will start developing again, the need for energy will be increased, and demand for uranium will rise accordingly.

How does JV Betpak Dala LLP minimize the impact of its mines on the environment?

The international community has proclaimed that drill hole ISL is the safest method of uranium production. Development and implementation of the new progressive method of mine development with

drill hole ISL allows uranium to be extracted without extracting ore mass and surrounding formations to the surface, thereby significantly reducing the impact on the environment. The essence and the main advantage of the method is refusal from burden removing, shaft sinking, shaft tunnels, and other mining operations that cause irreparable loss to the ecology.

JV Betpak Dala LLP developed and approved the policy statement of the company in the field of quality, environment protection, occupational safety, and labor protection. The system on integrated quality management, occupational safety and health protection and ecological management is implemented. The system on occupational health and safety management system is in operation, according to which the systematic production control is carried out.

Bioreactors of utility fluids that have a storage pond are involved in the economical and rational use of water resources at Akdala and South Inkay. The storage pond is designed for collecting cleared utility fluids with the subsequent use for economical needs, watering of green plants, and washing firm and moistening porous surfaces. The main methods of processing water are biological cleaning, cleaning pressurized filtration, and electrolysis unit on production drains in environment. JV Betpak Dala LLP does not produce wastewater that is released into the environment.

What are the company's plans for the next five years?

In 2014, the partnership launched a satellite at Akdala, the second stage of kiln house at South Inkay was constructed, and now all extracted uranium is reprocessed at own production facilities. The management of the company constantly works to improve the everyday life of its mine employees. In 2015, a rotation camp for 120 places at Akdala was put in operation, and a rotation camp at South Inkay was expanded to 80 places. The partnership has been working on cost saving of production, introducing advanced methods, and new technologies. The geological department of the company confirmed the uranium reserves at site No. 4 of Inkay and Akdala. The main work of all technical personnel is directed at cost saving of products and making the maximum net profit. •

●●● Please tell us about JV Betpak Dala LLP and about its role in the holding of NAC Kazatomprom JSC?

The enterprise was established in 2004 on the basis of the Akdala mine, and the development of the South Inkay mine began in 2007. These mines are located in Sozak Region in southern Kazakhstan. Initially, it was planned to get 1,000 metric tons per year (mt/y) of uranium at Akdala mine, and 2,000 mt/y of uranium at South Inkay mine. Since 2012, JV Betpak Dala LLP reached design capacity production and began to extract 3,000 mt/y of uranium. Akdala mine was the first mine in the world which extracted in one year 1,000 mt of uranium by method of drill hole in-situ leach (ISL). In 2014, Kazakhstan extracted 22,300 mt of uranium, with JV Betpak Dala LLP extracting approximately 13% of this amount. In 2014, South Inkay produced 10,000 mt, and, since the beginning of operations at



Dmitry Valishev

General Director
EUROCHEM-KARATAU

ters (cm). In 2014, we extracted 175,000 mt and transported 816,768 cm of ore. In 2015, we are planning to mine 220,000 mt. So far our work is going well.

We are developing mining of phosphate ores and will continue the development and construction of the deposit until 2018. We will reach our production capacity of 640,000 mt per year. Current development of the base for raw material will allow us to do so. We want to finish the first phase of the project by the end of 2015 and begin production of phosphate rock. We are planning to finalize construction of the chemical plant by 2018 and begin production in 2019.

How does Kok-Djon differ from EuroChem's assets in other jurisdictions?

Kok-Djon is one of the largest deposits in Karatau phosphate basin. It is divided into four parts: Kis-Tas, Kesiktobe, Aktum and Araltobe. The length of each is 11.2 km, 12.5 km, 7.8 km, and 9.5 km, respectively. At this stage, EuroChem-Fertilizers is developing the Araltobe area and plans to move on to Kesiktobe in the near future. One of the key features compared to other deposits in Karatau basin is the fact that both of the above-mentioned areas are abandoned in P2O5. According to GKZ the total reserve at Araltobe is 27.567 million mt with an average content of P2O5 - 28,2%.

Before beginning to work in Kazakhstan, EuroChem had only one phosphorous deposit in Murmansk region, Russia - Kovdorsky GOK. Unlike the Karatau deposits, where there is only phosphate, the Kovdorsky deposit has three minerals, namely iron ore, apatite, and baddeleyite.

What are the unique features of the technology that you are using?

We decided not to use a traditional scheme of having a beneficiating phosphates after mining, and because of the fact that Karatau basin phosphates are difficult to beneficiate, we have very little waste material. This is why we designed a special technology and the final production will be is dicalcium. This technology has never been applied at this scale.

Depending on the type of the final product, extraction of P2O5 will be between 89% and 95% without prior beneficiation and concentration of phosphates. Thus, in order to receive the planned amount of the final

product, we will need to produce around 1.3 million mt of ore. If we were to use traditional technology, we would have to produce 30% more. We want to mine this resource as long as possible and one of our key focuses is to recycle all the raw material into good quality production and be able to sell it to our customers. We are also looking to have zero waste in our production process.

Apart from creating new jobs, what role will EuroChem play in creating socio-economic benefits for the local population?

Not long ago, Karatau and Zhanatas were considered ghost-cities. Before EuroChem's arrival to Zhanatas, only 10,000 people were actually living there compared to the 15,000 people registered as residents. After we began working in the region, the population increased, and many people returned.

One of our companies is registered in Zhanatas, which means we are paying taxes to the local budget. Also according to our subsoil contract, we are supposed to transfer \$40 million before the contract expires for socio-economic development of the city and revamping its existing infrastructure. From 2012 to 2014, we transferred \$15 million for the development of Karatau and Zhanatas. We develop a special program together with the local authorities, where we identified key strategic investment areas where this money was most needed. Thanks to the money that we transferred to Zhambyl region, many houses were restored and are now offered to young specialists. A large amount of abandoned buildings were either destroyed or renovated, the roads now have asphalt, and heating has been restored. Many schools and kindergartens have been renovated in Zhanatas and Karatau.

Further development of local towns will be closely related to the development of our production facilities. We will be providing gas for local residents, while also supplying our facilities. Providing steady water supplies will be related to the construction of water facilities for our production. •

●●● In 2010, EuroChem won licenses to develop two deposits in the south of Kazakhstan. Why did the company enter the country?

EuroChem is looking to become a global company, which means it cannot ignore Asian markets and Kazakhstan in particular. In Kazakhstan, we were able to combine our interests and the presence of a resource base for our production facilities, as well as capital resources for construction of chemical and processing facilities. The investment climate also attracted us to enter this market.

Tell us about the progress at Kok-Djon deposit.

In October 2013, in accordance with the working program of our mining contract, we began mining and extraction of phosphate ore at Araltobe site at the Kok-Djon deposit. We mined 5,000 metric tons (mt) of ore and transported 239,191 cubic me-



Mukash Iskandirov

General Director
KAZPHOSPHATE

neighboring countries, keeping our transportation costs as low as possible. Our key export markets are Russia, Uzbekistan and Turkmenistan. Kazphosphate is looking to upgrade its processing capabilities in order to create a range of value-added products, which will allow us to export them to new markets.

In 2011, Kazphosphate began developing production of fertilizers out of phosphate ores through modernization and upgrade process of its equipment. We bought 13 Belaz dump-trucks with capacity of 130 tons and purchased new excavators and other equipment. We plan to completely renew our equipment in the next four to five years. In 2013 we finalized construction of a sulfuric acid plant which will allow us to produce 650,000 mt/y of monohydrate. In order to assimilate production of sulfuric acid, Kazphosphate has also started reconstruction of production of wet-processed phosphoric acid, which is crucial for production of phosphate fertilizers. By 2016, we should be able to produce up to 500,000 mt/y of phosphate fertilizers, and by 2020 we will reach one million mt/y for local and foreign markets.

How do you assess the competitiveness of Kazphosphate on local and international markets?

Today, phosphate fertilizers are becoming an important regional product, and companies are expanding geographies of their exports. For example, many Russian companies dominate markets in India and Pakistan. Kazphosphate positions itself as a primarily Kazakh company and focuses on providing the domestic market with phosphate fertilizers. We maintain a leading position on the local market and continuously work on improving the quality of our product and services. Of course, we also explore new markets and increase our presence in neighboring countries.

In 2013, Russia's EuroChem received a mining license to develop phosphate deposits in the Zhambyl region. How the arrival of a new player changed the market for Kazphosphate?

There are 45 explored phosphate deposits in the south of Kazakhstan; Kazphosphate is working on six of them. EuroChem has a license for the development of two. However, they will also need to construct a processing plant, as their nearest facility is located in

Russia. This will require additional investment and may affect the final price of the product. We are happy to see new players coming to Kazakhstan because we understand that they improve overall economic wealth of the country. In the near future, we will see more players from Russia and other countries entering the market.

How do you approach the transportation of phosphates and mineral fertilizers, which often requires special logistical solutions?

Transportation of some products from processed phosphates is indeed requires special equipment, which in turn has an effect on the final price of the product. We need special railway tankers and other equipment to ensure safe transportation. We have over 500 tank containers that we use for transportation of our product to Europe and the United States, so we are not dependent on third parties. Kazphosphate was able to maximize the efficiency of its logistical operations, allowing us to maintain a competitive price for our products. Regardless on our efforts, up to 25% of the price composition of some of our products is transportation cost, and we do hope to reduce this share in the future.

Historically, Kazphosphate has been very active in its CSR commitments. Could you tell us about some of your recent projects?

Kazphosphate employs over 6,000 people; the average age of our employees is between 40 and 45 years. Having such a young employee base means that the company must pay special attention to education and training. We support our young employees, and offer additional training programs for them, as well as support their children's education. Over the past five years, we built housing facilities for our specialists, a camp, sports center and other facilities for our employees and their families to make sure they enjoy a comfortable life outside working hours.

What are Kazphosphate's strategic plans for the next five years?

We are planning to increase our levels of production, while also increasing our productivity to bring it closer to world standards. We want to make sure our employees have comfortable lives, and we will keep investing in improving conditions at our sites and nearby towns. •

●●● Could you tell us about key developments Kazphosphate has gone through in the past couple of years?

In 2014 Kazphosphate celebrated its 15th anniversary. The company has gradually developed into a full-fledge producer with a focus on exports, and achieved its full production capacity. We are now prepared to grow even further. Currently, we have a turnover of \$400 million, and by 2020 we want to reach \$1 billion. Kazphosphate supplies its products to over 30 countries around the world. We export to the European Union and the CIS. In recent years, we began exploring the US market, and today American exports account for 7% of the total export volume of the company. The company's activities cover three main segments: mining and sale of phosphate, production of yellow phosphorous, and production of mineral fertilizers.

Phosphates have low value, which is why we only sell it domestically and to the



Dr. Alp Malazgirt

CEO
YILMADEN HOLDING

and Asia, YILMADEN plans to expand its global network to include Africa and Latin America. The Holding continues to hunt for international opportunities and investments to develop its capabilities and productivity while placing sustainability at the heart of all its strategies, decisions, and actions.

Can you give us an overview of Voskhod Chrome in Kazakhstan?

In 2013, YILDIRIM Group made headlines when it acquired the chrome assets of the Russian mining giant Mechel, including the Voskhod assets situated in northwestern Kazakhstan. The Voskhod chrome ore mine and chrome concentrate plant is comprised of a state-of-the-art underground mine and a modern ore processing plant. The mine's total reserves are approximately 20 million metric tons (mt) with a chrome-to-iron ratio of 3.5 to 3.8, one of the highest in the world.

In addition to providing chrome concentrate for chrome chemical, chrome metal, and low carbon ferrochrome producers, the company also sources raw materials for the Tikhvin Ferroalloy Plant in Russia. Voskhod's current beneficiation utilization is one million mt of raw ore, with a capacity of 1.5 million mt.

How successfully have you been able to integrate Voskhod Chrome into the Holding?

Voskhod Chrome's integration process into YILMADEN Holding was flawlessly 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. A \$50-million capex program was initiated, and all new underground mining equipment was procured from top-notch suppliers, leading to a dramatic improvement in uptime, at over 80%. The introduction of innovative mining techniques such as selective drilling and blasting also resulted in substantial improvements in the ore grade going into the processing plant, which in turn improved plant efficiency and led to record-breaking levels of concentrate production.

Can you tell us about your planned exploration activities?

In 2014, operational exploration, grade control, and reconciliation projects that comply with international standards were completed at the Voskhod mine, while the deposit's resources and reserves were revaluated in compliance with the JORC code. As a result of these efforts, an additional 1.5 million mt were added to the existing reserves to bring Voskhod's total amount of remaining proven chrome ore reserves to nearly 20 million mt.

Can you please highlight the improvements achieved in beneficiation techniques?

In 2014, Voskhod Chrome conducted tests with new beneficiation equipment such as shaking tables to modify the spirals currently used at the plant. The results indicated that it is possible to increase the yield by another 5 to 8% while achieving a reduction in tailings loss. The tailings pond currently has about 600,000 mt of material that can be recovered to obtain chrome concentrate with a grade of 53% chromium oxide (Cr2O3). In order to reprocess the tailings with an improved beneficiation circuit, Voskhod Chrome signed a contract with the Kazmekhanobr State Scientific Production Association of Industrial Ecology in Almaty, who are currently finalizing the project for Voskhod Chrome's new beneficiation plant with shaking tables.

What are your plans and expectations for the next few years?

Previous exploration and drilling done at Voskhod Chrome's Karaagash deposit have revealed four million mt of resources that comply with JORC standards. The company's production plans for 2015 and beyond will include the addition of these resources to its existing reserves. At Voskhod Chrome, the sublevel caving method is used for production at the mine. In 2014, geotechnical analysis conforming to international standards was completed. Starting in 2015, the gap between levels will be increased from 20 meters (m) to 40 m, which will further increase Voskhod Chrome's annual ore production capacity. Construction for Voskhod Chrome's new beneficiation plant for high-grade tailings will begin in Q2 of 2015, and the plant will be operational by the end of the year. •



Aaron Crouch

Audit Partner
DELOITTE

There is demand across all our service lines. M&A is showing signs of increased activity; the auditing business is constant; and we currently have some very large consulting projects with the big mining players. One of the key minerals in Kazakhstan is uranium, and China, due to its 15-year policy of building and commissioning domestic nuclear reactors, is actively interested in exploiting that. Japan also has reactors they are looking to start up. For this reason alone, China and Japan should create a surge in the demand for uranium. Copper is another key mineral in Kazakhstan where demand globally is outstripping supply. Iron ore is also an important mineral for the country; however, there is supply competition from Australia. Kazakhstan also has a wealth of gold, silver, zinc and coal.

What changes has the updating of Kazakhstan's mining code brought to the mining industry?

From our viewpoint, the changes to the code, which were designed to encourage foreign investment, have yet to affect the mining industry. Any change will probably be noticed when we carry out our 2015 audits. To date, mining has generally been seen as a "second-class citizen" with oil and gas receiving all the attention. Arguably, however, reductions in oil prices should increase the profile of the mining sector. If we want to see real development in Kazakhstan mining, the big international mining corporations are going to have to start investing in the country's resources.

What other steps could the government take to encourage international investment?

Historically, Kazakhstan's government has an excellent record in joint ventures with international oil and gas and uranium players. This gave leverage for the Rio Tinto/KazGeology copper porphyry ore exploration in the Karaganda province of Kazakhstan and should encourage other international mining companies to invest in the country's resources.

How does Almaty compare to Australia and Canada in terms of mining innovation?

For innovation, Kazakhstan is a follow-up player in the mining industry, but has adopted up-to-date technology in uranium extraction; however, some of the older mines

do need updating. There is less emphasis in Kazakhstan on mining automation as labor costs are low compared to Australia and Canada.

With low labor costs in Kazakhstan, have companies working in the country been less impacted by the global decline in mining operations, and, with the new railway line through Turkmenistan, Uzbekistan and Kazakhstan, will demand increase from neighboring countries for iron ore?

The real costs are felt at the key specialist levels, which would apply to all global projects. The cost of base labor is less of an influence on margins. Kazakhstan's proximity to China gives the country a competitive advantage with easy transportation routes. The new railway line will have little effect on iron ore demand as the big iron ore users, i.e. steel producers, are in eastern China. Iron ore is available in China, but it is of a poor grade. Chinese iron ore producers receive between \$110 per metric ton (mt) and \$130/mt, compared to the global price of \$50/mt, suggesting that the Chinese government is subsidizing iron ore prices to create jobs in China's steel mills. Arguably, long term, we could see a drop in iron ore demand from China as it will have exceeded capacity in steel and the government could withdraw subsidies from either iron ore producers or the steel mills.

What are the main challenges facing new investors in Kazakhstan's mining sector?

The challenges are a shortage of infrastructure and human resources, primarily skilled workers. International companies will invariably bring their own skilled labor. Skilled labor is available in Kazakhstan, but the vast majority work for local companies, are limited in their ability to speak English, and work according to the old Soviet code of resource determination, which no longer meets international standards.

How do you see Deloitte's role in Kazakhstan evolving over the next five years?

Deloitte is handling large projects and fashioning a positive reputation in the marketplace. Being a global company, we are known to international clients who will use our broad spectrum of services, including due diligence, consultancy and engineering technical work. Our goal is for Deloitte to be the preferred choice. •



KAZAKHSTAN'S EQUIPMENT AND SERVICE SUPPLY CHAIN



“We may say that geochemical tests are in fashion, which is attributed to the active geological performance of local mining companies including junior companies funded by foreign enterprises. Though in terms of revenue and the bottom line performance, the trade inspections as well as technological inspections are more attractive.”

- Azer Mammadov,
Managing Director,
SGS Kazakhstan and Caspian Sub-Region

SEEKING QUALITY AND INFRASTRUCTURE

The Evolving Market for Supplying Mining Equipment in Kazakhstan

As Kazakhstan is looking to attract new international players to join the ranks of its main domestic players like Kazzinc, ERG, Kazakhmys Corp. and Kazatomprom, services and equipment suppliers are never far behind. Already boasting a presence of successful operation, local providers like Kazgiprotsvetmet, Vostokshahtostroy, Iskander and Vostok Prom Geo have a clear advantage in terms of being domestic which facilitates forming partnerships and knowing the local culture. However, these domestic companies must not feel too comfortable as tough international competition has not only already established itself in Kazakhstan, but further players are already eyeing the market as it could become the next destination with a mining boom.

As local companies are more skilled in the Kazakh customs, it may be a good idea for foreign players to partner with local ones in order to increase their chances of success in penetrating the market.

•••

Equipment Supply

Kazakhstan's equipment supply market has been characterized by companies being more concerned with price rather than the quality and durability of their equipment. However, a change is underway as companies are adopting Western methods of operating. Today some of the main equipment providers are, indeed, Western. Some examples are Sandvik and Atlas Copco. "In 1997, Sandvik entered the Kazakh market by acquiring Tamrock, one of the world leaders at the time in supply of equipment for mining operations whose office was established in Kazakhstan. Through this acquisition, Sandvik initially entered the mining sector in Kazakhstan with equipment for underground excavation although its current portfolio has extended to surface drilling, blasting, crushing, screening equipment and its support. Arguably, Kazakhstan has the fastest growing resource market in Asia and the former Soviet Union countries which is attracting Sandvik among oth-

ers," said Dmitry Vorozhtsov, general manager of Sandvik.

Atlas Copco has extensive experience in the Kazakh market and has introduced cutting edge technology to Kazakhstan. "In 2013, Atlas Copco expanded its product portfolio by acquiring MEYCO Equipment. Due to the downturn in mining activity, there will be some rationalization and changes to the product line. The MEYCO factory has been transferred to Sweden with the competence center remaining in Austria. Atlas Copco has sold a MEYCO Potenza to Tajikistan and also introduced this technology in Kazakhstan at Ust-Kamenogorsk," said George Apostolopoulos, general manager of Atlas Copco.

There has been some concern over the entrance of Chinese equipment providers and their impact on the market in terms of increasing competition; however, this may be truer for other Central Asian nations rather than Kazakhstan. "Chinese competition in Kazakhstan has not impacted much on Atlas Copco's mining business, but has bitten and is dominant in Uzbekistan, the rationale being a historic relationship between China and Uzbekistan. Competition in Kazakhstan is of an international source, i.e. Sandvik and Caterpillar. It is difficult to define precisely Atlas Copco's market share in Kazakhstan, there being many different sectors of equipment: for example, surface; underground; drilling consumables; and products that Atlas Copco offers but its competitors do not, and vice versa. Sandvik, due to its longevity in the market, is ahead of Atlas Copco on underground equipment; but Atlas Copco is ahead of Sandvik for the surface sector and drilling consumables. Over the three sectors, Atlas Copco has a market share of 35%, plus or minus 3%. Atlas Copco's after-market support is a great aid for maintaining its client base and securing new clients," said George Apostolopoulos, general manager of Atlas Copco Central Asia.

As the needs of Kazakhstan's companies are changing, the desire for quality products is also rising and this presents a good growth potential for Western equipment providers looking to expand to new markets.

Transportation and Heavy Goods Equipment

In 2014, President Nazarbayev introduced "Nurly Zhol" (Bright Path), a new economic policy that envisions massive state investment in infrastructure over the next several years. This is in response to geopolitical challenges such as low oil prices and sanctions on Russia. The funds for the projects will originate from Kazakhstan's National Fund, similar to Norway's Petroleum Fund, created with the sole purpose of saving for a rainy day. The fund has so far accumulated \$76 billion from Kazakhstan's exports revenues. The infrastructure plan looks to develop transport networks and logistics infrastructure to connect the country's macro-regions through roads, railways and even airlines. The greatest focus will be given to implementing major road projects: Western China – Western Europe; Astana – Almaty; Astana – Ust-Kamenogorsk; Astana – Aktobe – Atyrau; Almaty – Ust-Kamenogorsk and Karaganda – Zhezkazgan – Kyzylorda; Atyrau – Astrakhan. The government is also looking to explore opportunities to build or lease terminal facilities and dry ports and seaports in China, Iran, Russia and the European Union according to the Astana Times. More specifically for railways, the European Bank for Reconstruction and Development and a number of commercial banks are providing a syndicated financing package of \$300 million in support of a comprehensive modernization and restructuring program of Kazakhstan Temir Zholy, the country's rail operator, also according to the Astana Times.

In 2014, a railway connecting Kazakhstan, Turkmenistan and Iran was inaugurated opening up access to the Middle East and its ports in Iran for Kazakhstan and Turkmenistan. Iran and Turkmenistan, on the other hand, gain access to ports in China through railway connections leading through Kazakhstan. What has also received significant amounts of attention has been China's New Silk Road project that aims to connect China to Europe by reviving the ancient trading routes.

While Kazakhstan is undergoing a number of exciting changes

••

Since 2010, delivery times for CAT mining equipment have improved due to the opening of two CAT facilities in Russia - Tosno, St. Petersburg and Novosibirsk. As these trucks come from within the Customs Union, they have a price advantage over our competitors. Delivery of equipment is enhanced by the excellent railway infrastructure in Kazakhstan.

- Aman Shakenov,
Director, Mining Division,
Borusan Makina Kazakhstan

••

on the infrastructure front, companies operating as heavy goods equipment providers in the country are also expanding and are likely to grow further in both number and size as the industry continues to develop. Transportation and heavy goods equipment providers in Kazakhstan include Tamozy Machinery, Liebherr,

НОВЫЕ ТЕХНОЛОГИИ
ДЛЯ ЭКОНОМИИ И ПОВЫШЕНИЯ ЭФФЕКТИВНОСТИ
ОТ МИРОВЫХ ЛИДЕРОВ

DERRICK CORPORATION
 Замена гидроциклонов в циклах измельчения

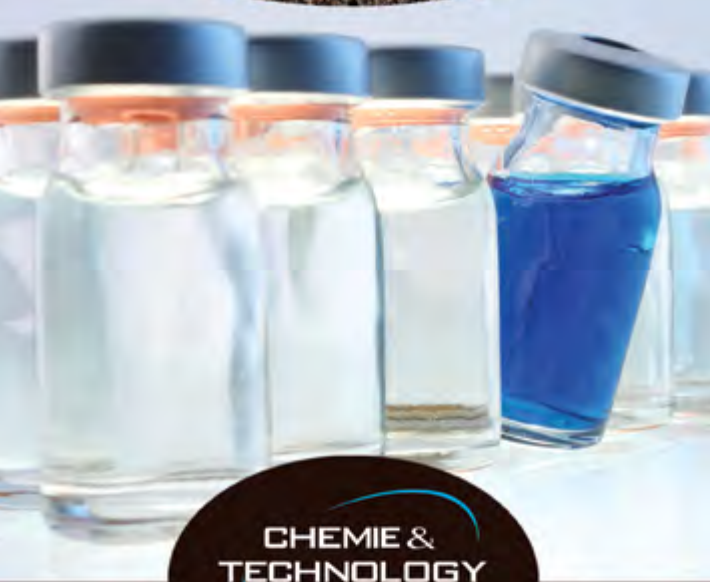
WestTECH
 Process Equipment. Process Driven.
 Технология пастового сгущения. Исключение дамб. Экономия свежей воды

TOMRA SORTING SOLUTIONS | MINING
 Не тратьте ресурсы на пустую породу. Исключите ее с помощью сенсорных технологий TOMRA

Официальные поставки в Россию и СНГ

ТРАНЕ ТЕХНИКК

www.thrane.ru, info@thrane.ru; www.thrane.kz, info@thrane.kz



CHEMIE & TECHNOLOGY

WE ARE ALWAYS ON YOUR SIDE!

Chemicals for the mining industry from world's most famous producers

Best price and top-quality

Warehouse allowing fast delivery

Test purchase available

CHEMIE & TECHNOLOGY LLP

address: 050020, L. Chaikina str.14, City Almaty, Kazakhstan

tel: +7 (727) 333 60 99 / +7 (701) 250 25 22

e-mail: info@cht.kz web: www.cht.kz

Chinese competition in Kazakhstan has not impacted much on Atlas Copco's mining business, but has bitten and is dominant in Uzbekistan, the rationale being a historic relationship between China and Uzbekistan. Competition in Kazakhstan is of an international source, i.e. Sandvik and Caterpillar.

- George Apostolopoulos,
General Manager,
Atlas Copco Central Asia

Volvo, Turkuaz Machinery, AK Machinery and others. One leader that stands out and has been present in Kazakhstan since 1999 is Borusan Makina, the representative of Caterpillar. "Borusan is a Caterpillar (CAT) dealer in Kazakhstan and Kyrgyzstan, and is part of a Turkish conglomerate for CAT operating in Turkey, Azerbaijan, Georgia, and the far east of Russia. Borusan is one of the biggest dealers of CAT in the CIS region. In 2011, we established a Components Rebuild Center (CRC) in Karaganda, and in 2013, we completed our equipment rebuild shop and further expansion is planned. Borusan enjoys over 50% market share in the mining sector for equipment supply within the model size with which we are in competition. We have an excellent customer portfolio for greenfield projects for varying commodities which allow for peaks and troughs," said Aman Shakenov, mining division director at Borusan Makina Kazakhstan.

"Since 2010, delivery times for CAT mining equipment have improved due to the opening of two CAT facilities in Russia - Tosno, St. Petersburg and Novosibirsk. As these trucks come from within the Customs Union, they have a price advantage over our competitors. Delivery of equipment is enhanced by the excellent railway infrastructure in Kazakhstan," added Shakenov.

However, the sheer size of the country does present a challenge for a number of companies. One example is the Almaty-based distributor of chemical solutions, Chemie & Technology. The company offers acids and drill fluids used at all stages of production. "Underdeveloped infrastructure certainly poses several challenges for us, and mainly affects the time of delivery. In turn, this can have a negative effect on operations of the mining companies we work with. We always try to work efficiently, process all orders in record times and minimize lead times. Because of the cost of our products includes delivery costs, we make sure we deliver the product in very short time," said Maxat Bekov, executive director of Chemie & Technology.

As Kazakhstan aims to further upgrade its infrastructure and heavy goods equipment providers are expanding in the country, the mining sector certainly looks to benefit from improvements in both transportation infrastructure and wider service offerings from equipment providers. •



George Apostolopoulos

General Manager

ATLAS COPCO CENTRAL ASIA

Can you outline the rationale behind Atlas Copco entering the Kazakhstan market?

Kazakhstan has a plethora of natural mineral resources, which was the rationale behind Atlas Copco entering the Kazakh market in 1992. The company's service offering includes mining and construction equipment, compressors and diesel generators, drilling consumables, warranty and post-warranty maintenance of all equipment, and plus training programs for its customers.

Does mining still contribute 80% to 90% to Atlas Copco's revenues in Kazakhstan?

In 2010, mining would have contributed 90% to Atlas Copco's revenue in Kazakhstan, peaking in 2013. In 2015, the Kazakhstan mining market has mirrored the global downturn for mining and exploration; the revenue contribution of mining for Atlas Copco in Kazakhstan is now 80%. The company is enduring the downturn, maintaining staff levels, and looking forward to an upturn in the mining market.

Arguably, it is not only the fluctuating mineral prices responsible for the mining downturn, but mining houses have allowed cost structures to become inflated; cost structures need to be looked at and reduced. 2017 could be a year of recovery for the exploration market; it would have suffered a three- to four-year downturn and the market's cyclical nature would suggest an improvement, supported by a McKinsey report on mining and construction.

How important is Kazakhstan to Atlas Copco in the CIS region and globally?

Atlas Copco Kazakhstan is the company's hub for six countries: Armenia, Tajikistan, Kyrgyzstan, Uzbekistan, Kazakhstan, and Mongolia. This group of countries places Atlas Copco Central Asia in the top 15 of Atlas Copco's mining customer centers globally.

Has Atlas Copco been affected by competition from Chinese equipment suppliers?

Chinese competition in Kazakhstan has not impacted much on Atlas Copco's mining business, but it has bitten and is dominant in Uzbekistan, the rationale being a historic relationship between China and Uzbekistan. Competition in Kazakhstan is from international companies, i.e. Sandvik and Caterpillar. It is difficult to define precisely Atlas Copco's market share in Kazakhstan, since there are many different sectors of equipment: for example, surface; underground; drilling consumables; and products Atlas Copco offers but its competitors do not, and vice versa. Sandvik, due to its longevity in the market, is ahead of Atlas Copco on underground equipment, but Atlas Copco is ahead of Sandvik for the surface sector and drilling consumables. Over the three sectors, Atlas Copco has a market share of 35%, plus or minus 3%. Atlas Copco's after-market support is a great aid for maintaining its client base and securing new clients.

Has Kazakhstan's infrastructure posed a problem for you?

Kazakhstan's infrastructure is an issue and the reason for Atlas Copco having service branches is to be close to its customers to facilitate a prompt service. Branches are at Ust-Kamenogorsk, Satpayev, Karaganda and Almaty, and for construction and compressors at Aktobe and Shymkent.

Can you describe your new product MEYCO Versa sprayer; have you introduced the technology to Kazakhstan?

In 2013, Atlas Copco expanded its product portfolio by acquiring MEYCO Equipment. Due to the downturn in mining activity, there will be some rationalization and changes to the product line. The MEYCO factory has been transferred to Sweden with the competence center remaining in Austria. Atlas Copco has sold a MEYCO Potenza to Tajikistan and also introduced this technology in Kazakhstan at Ust-Kamenogorsk.

Can you outline your commitment to sustainable productivity?

Atlas Copco's policy is that sustainable productivity is the foundation for any investment; the environment, health and safety issues and quality of work are the keys to its operations. Arguably, Atlas Copco leads the way in corporate social responsibility (CSR) too. Notwithstanding, Kazakhstan has yet to embrace the importance of CSR and health and safety.

Is the government doing enough to mandate rules and regulations for health and safety in the work place?

Arguably, the Soviet influence has installed the thought process that unless the government imposes rules and regulations, they have no importance. Government could be doing a lot more. It is still up to the individual companies to educate and train personnel to be conscious about health and safety in the work place.

Do you offer financing options for purchasing your equipment?

Atlas Copco's products give value for money; it promotes the importance of equipment life-cycle cost, efficiency and safety. We do offer finance packages at competitive interest rates to assist our customers. We aim to be flexible when it comes to the individual needs of every one of our clients, helping them acquire the necessary equipment to ensure that their operations run as smoothly as possible.

What are Atlas Copco's short-term plans in Kazakhstan?

In the short term, Atlas Copco has to traverse the bottom of the downturn in mining activity, look for an improvement in its business through focusing on after-market, become even more efficient, maintain close relationships with its customers, and be prepared for an upturn in mining activity. •



Aman Shakenov

Mining Division Director
**BORUSAN MAKINA
 KAZAKHSTAN**

Can you give a brief overview of Borusan Makina?

Borusan is a Caterpillar (CAT) dealer in Kazakhstan and Kyrgyzstan, and is part of a Turkish conglomerate for CAT operating in Turkey, Azerbaijan, Georgia, and the far east of Russia. Borusan is one of the biggest dealers of CAT in the CIS region. In 2011, we established a Components Rebuild Center (CRC) in Karaganda, and in 2013, we completed our equipment rebuild shop and further expansion is planned. This facility has got five stars certification from CAT and implemented six recognized best practices in equipment rebuild processes of CAT. Borusan's mining division accounts for 300 of its 800 personnel, and generates 60% of Borusan's revenue. We have a sales support team of five people, three key account managers, and an application team. 90% of our staff is dedicated to support services, i.e. technicians, service engineers. Borusan enjoys over 50% market share in the mining sec-

tor for equipment supply within the model size that we are in competition. We have an excellent customer portfolio for greenfield projects for varying commodities, which allow for peaks and troughs.

How much has your market share grown from 2010 to 2015? On a global scale, how important is Kazakhstan to Borusan?

Our market share of over 50% has remained constant between 2010 and 2015; we anticipate that it will stay at this figure for the next five years. Outside of Turkey, Kazakhstan is one of the most important investments for Borusan. One example is the expenditure of \$30 million for our components/equipment rebuild complex in Karaganda.

What is your strategy for staying ahead of your competitors and is your service offering comparable to Turkuaz Machinery?

Our CAT brand is powerful and we have a diversity of product offerings; our strategy is to offer a better service and build stronger customer relations. Turkuaz focuses on the excavator business, whereas Borusan can supply all equipment for the mine site, i.e. drills, mining trucks, mining shovels, wheel loaders, lighting towers, water pumps. Borusan's competitive advantage is that it offers a one-stop-shop for mining equipment requirements. CAT has a financing division; Borusan can supply a whole fleet of CAT machines, service and recondition equipment for a second life in our CRC facility together with CAT certification.

What financing options do you provide?

CAT Finance offers credit loans or a subsidiary who offers whole project financing covering non-CAT equipment, i.e. conveyors, rail solutions. There is also a leasing option for clients, popular with small mining companies.

Have delivery times improved since 2010 and has the lack of infrastructure in remote areas of Kazakhstan been a problem for after-sales service and maintenance?

Since 2010, delivery times for CAT mining equipment have improved due to the opening of two CAT facilities in Russia—Tosno, St. Petersburg and Novosibirsk. As these trucks come from within the Custom Union they have a price advantage over our competitors. Delivery of equipment is enhanced by the excellent railway infrastructure in

Kazakhstan. There is a difficulty in recruiting manpower; we liaise with local universities/colleges to overcome this problem and we hire locally. Part of our corporate social responsibility is to offer an internship program. In 2014, we interviewed 400 students in Kazakhstan for 30 job opportunities.

What is the split between your clients in Kazakhstan between domestic and foreign companies and what impact do you expect the new Mining Code to have on your client base?

Our customer portfolio is 70% domestic, 30% foreign most of which are Russian companies, for example: Severstal; Polymetal; United Company RUSAL; Russian Copper Company and EuroChem. We expect the new Mining Code to make life easier for mining companies enabling them to forward plan with more confidence. The new Code will make investment more stable and attract international mining companies, i.e. Rio Tinto and contract miners as Thiess.

Have you found mining companies reluctant to embrace new technologies and working practices?

CAT has a strong reputation in the mining industry with a proven record of reliability. Borusan is forming a new group within its mining team dedicated to introducing new technologies to the mining community, for example: tele-remote operation for LHDs improving safety in the workplace. We have recently introduced this to Kazzinc mining company. Borusan's objective is to take operators out of underground mines. We are also working on managing traffic for open-pit mines. Customers are more agreeable to change once feasibility studies prove that innovation is beneficial.

What are Borusan Makina's plans for the next five years?

Borusan Makina's five-year strategy plan is: work on efficiency; further improve its safety culture; increase customer support; and grow its market share for the introduction of new technology. Arguably, over the next five years, we expect steady growth in the mining sector in Kazakhstan; we will focus on work-efficiency of equipment with our customers. The versatility of CAT's portfolio enables us to diversify into other markets, i.e. engines to support energy, transportation and smelting works. We offer mining customers a one-stop-shop service. •

BORUSAN **CAT**

ТОО ИП «БОРУСАН МАКИНА КАЗАХСТАН»
 info-bmk@borusan.com www.borusanmakina.kz

8 8000 800 228 **БОРУСАН МАКИНА КАЗАХСТАН**
ВСЕГДА НА СВЯЗИ

Dmitry Vorozhtsov

General Manager
SANDVIK MINING AND CONSTRUCTION KAZAKHSTAN

ture of Kazakh mining market which is predominantly open-pit projects and remaining underground assets. Although working in the same market, the strategy of miners differs: if the main requirement for open-pit projects is equipment availability, the companies working in underground mining are primarily focusing on reduction of operating costs so we, at Sandvik, will have to leverage to satisfy both.

Has the competition from Chinese equipment providers affected Sandvik?

Currently, Sandvik in Kazakhstan is not affected by competition from Chinese companies. Potentially, Chinese competitors are a threat if the combination of factors applies: e.g. the ore grade reducing and metal prices remain low for long – these may trigger some companies working at the breakeven point to look at Chinese alternatives. Another example might be establishing a footprint of Chinese equipment through acquisition of Kazakh deposits by Chinese miners. This is what happened with the gold industry of neighboring Tajikistan. In general, big national miners do not wish to compromise reliability for cheaper options.

Can you give an example where a mining company has benefited in production and performance from using Sandvik equipment?

In 2002, Sandvik established a rebuild service center used for reconditioning of expensive components in the city of Satpayev. Currently, the service center in Satpayev is reconditioning over 400 components a year and helps to extend a lifetime of Sandvik equipment working at Kazakhmys mines. Availability of parts and technical competence, in conjunction with tight cooperation with Kazakhmys specialists, helped in cutting repair lead time to one to three days.

Has the lack of infrastructure in remote regions of Kazakhstan been an obstacle for Sandvik operating a 24/7 steel belt after sales service?

To overcome problems of operating in remote territories, Sandvik places equipment infrastructure near population centers. Availability of parts and service presence guarantees high equipment availability for our customers. We provide all types of services including field support, component rebuilds, contracts for technical maintenance and trainings. To give you an example – we have been maintaining

equipment at Nurkazgan mine (Kazakhmys) on a 24/7 basis with an availability of around 85-90%. Service performance at Nurkazgan mine is something we are really proud of.

Can you give an example of how Sandvik's economic, social and environmental responsibilities have been demonstrated in Kazakhstan?

Sandvik puts a lot of attention on EH&S. We have a three-year plan focusing on main EH&S KPIs and striving for cultural change. We managed to equip all our vehicles with GPS and measure the safe use of vehicles on a daily basis. The rebuild service center and service project at Nurkazgan regularly pass ISO/OHSAS audits. We live up to safe working environment standards and all Sandvik managers are to demonstrate EH&S leadership in work, home or on vacation. On the environmental part, we try to balance fun and responsibility and enjoy outside activities. In July 2015, Sandvik's office in Almaty will spend a day on beautification of the Ili River.

How do you maintain your market share and do you offer financing and leasing options?

Sandvik is the leading service provider in underground excavation in Kazakhstan and, since recently, has got a sufficient surface business in the portfolio. To compete, Sandvik maintains a high level of trust among customers by honoring its promises and offers flexibility i.e. commercial terms, equipment modernizations. We set up a right service and logistics footprint to guarantee high parts availability and excellence of technical services to make sure equipment is performing as well as it can. It is Sandvik's policy to employ and retain the best people, regularly appraise staff performance and make sure the overall efficiency of the organization is growing. Same as others, Sandvik does payment extension i.e. leasing, renting, trials, etc. The final form of extension is always a deal specified to suit the needs of particular customers.

What are Sandvik's plans in Kazakhstan for the next five years?

Sandvik's five year plan will be to endure the current downturn in mining activity, continue its direct operations with our customers and grow overall efficiency. It has now created a solid platform to service the needs of major mining houses for surface and underground projects and attracting new customers is the next logical step. •



Alexandr Anchugin

Director
KAZZINCMASH

What are the main types of equipment that Kazzincmash produces and who are your main clients?

First and foremost we produce equipment for mining, processing and metallurgical sectors. Our products include cone crushers, drum mills, ball mills, separators, pumps, special shovels for steel, spaceports, etc. We also supply equipment for the energy sector. We have our own laboratory and specialized equipment, which allows us to know the exact properties of metal and to set the current characteristics required by the client. We work with Kazzinc, as well as with other companies in Kazakhstan. We work with Corporation Kazakhmys, and are looking to also create partnerships with Donskoy GOK. In the south of the country we work with road construction companies. In the beginning of 2015 we won a tender to supply crushers to First Non-Metal Company in Russia. Our prices and lead times were more attractive for the client. We were able to supply this crusher within four months. Our production has almost no waste. Thus, we are also maintaining our competitiveness because we have our own technology for production of equipment and highly qualified staff. At Kazzincmash we are using Russian, German, Japanese and Czech equipment.

Kazzincmash was the first company in Kazakhstan to produce an ultra-fine grinding mill. What is the advantage of this type of equipment?

Ultra-fine grinding has been used extensively among beneficiating companies as a method that allows for a higher degree of extraction. Kazzincmash is the first company in Kazakhstan and the rest of the CIS to produce an ultra-fine grinding mill, which can easily complete with similar equipment from international manufacturers. Ultra-fine grinding mill MUI-450 - a type of mill, designed for fine and ultra-fine continuous grinding and dispersion of solid particles in liquids by grinding up material suspension using solid balls - bead. The uniqueness of this mill is that, unlike analogues, the material is like it is in open air. Thus oxidation occurs naturally, which is why less amount of reagents is needed to recover valuable components.

How do you collaborate with Kazzinc and how important are other mining companies for Kazzincmash?

We work with Kazzinc as well as other mining companies in Kazakhstan. In the past,

80% of the orders were coming from Kazzinc, but we want to bring this percentage down to 50%. Kazzinc, as our parent company, wants us to be competitive on the market, which is why we participate in tenders, even when we work with Kazzinc.

How would you assess the machine-building sector in Kazakhstan?

Kazzincmash is a member of the Kazakhstan's Machine-Building Union. We hold various forums for machine-building professionals and see strong potential for the development of the mining sector. Currently, we supply 10,000 metric tons (mt) of casting to the Kazakh market, while the deficit on the market reaches 200,000 mt, which is currently being imported; hence we see a lot of potential. It is important to find those niches, where we can take leading positions and strive to produce more products that are in demand in Kazakhstan.

Kazzincmash is one of the main production plants in the mono-town of Ridder. What steps is the company taking to retain current employees and attract new ones?

There are many families where people have been working at our production plant for generations, and we highly support this tradition. We are always happy to see our employees bring their children and grandchildren to the factory. Thanks to the continuous modernization of our equipment and technology that we use, we can offer more interesting positions to our employees. We do our best to ensure an adequate salary for our employees, one that would correspond to their input and would justify their perspectives about future, which is exactly what attracts new employees. We invest a lot into training our staff - teaching them how to work with various equipment and tools and we continuously work on increasing the level of their professionalism. We believe that our employees play a decisive role in our production process and we are doing everything to ensure favorable working conditions for them. •

●●● **Can you outline some of the reasons why Sandvik entered the Kazakhstan market?**

In 1997, Sandvik entered the Kazakhstan market by acquiring Tamrock, one of the world leaders at the time in supply of equipment for mining operations whose office was established in Kazakhstan. Through this acquisition, Sandvik initially entered the mining sector in Kazakhstan with equipment for underground excavation although its current portfolio has extended to surface drilling, blasting, crushing, screening equipment and its support. Arguably, Kazakhstan has the fastest growing resource market in Asia and the former Soviet Union countries which is heavily attracting Sandvik among others.

How important is Kazakhstan to Sandvik on a global scale and what is your expansion strategy in the region?

Kazakhstan sufficiently contributes to total revenue of Sandvik Mining so it is important. The strategy of Sandvik is aligned with fu-

●●● **Kazzincmash has a very long history. Can you tell us about its most recent developments?**

The facility has first been mentioned in 1915 as Ridder forging and mechanical workshop with foundry and molding areas. In 1946 by an order of the Non-Ferrous Metals Ministry it was decided to design and repair the mechanical facilities of Leninogorsk polymetallic industrial complex. In 2004 Kazzincmash, an affiliated company of Kazzinc Ltd., was set up within the machinery and repair plant. From then on, we began integrating modern methods and innovative technology in the production process. We began to work efficiently and now we are one of the best machine-building plants in Kazakhstan. The facility is using the newest equipment, technology and software, which allows us to produce high-quality products in a very short period of time.



Nils Chr. Thrane

●●● President
THRANE TEKNIKK

ny's needs. Thrane then established a Russian company with a Russian partner. In 2011, Thrane again had to expand its footprint and established its Kazakh company to service its customers' needs, and now has offices in Almaty and Karaganda. The Russian and Kazakh markets are similar in their format but work to a different agenda. Thrane's position is in the grey-zone between consulting and equipment supply; it consults with clients for new solutions to improve operations, i.e. capacity, quality, energy saving, etc. Thrane's portfolio has three main products: sensor-based sorting for ore, fine screening, and paste technology. Sensor based sorting for ore offers bigger capacity and considerable savings by sorting out waste rock before it enters the beneficiation plant. The next step in the beneficiation plant is milling—traditionally used with cyclones; this method, however, generates low efficiency, and Thrane has now introduced a fine screening concept to replace cyclones. The energy saved from the screening concept will give a 30% to 50% increase in capacity, or from a green perspective liberate the energy for other uses. Another new technology that Thrane is dealing with is paste technology. Current tailings consist of 30% solids and 70% water stored in tailings ponds; solids sink to the bottom, and the water is pumped and re-cycled. This storage method requires large dams, is expensive and environmentally dangerous, and a lot of water is lost in the process. Paste technology consists of 70% solids and 30% water and does not require large dams; water can be circulated straight back to the plant without losses, an ideal system for countries such as Kazakhstan where water is precious.

How reliant is your Russian office on the research and development (R&D) done in Norway? How much do you benefit from your partnerships with WesTech, Tomra Sorting Solutions, Derrick Corporation, and others?

Thrane's in-house R&D initiatives are partnered by Norway and Russia; both parties' expertise is amalgamated. Thrane could not exist without its external partnerships; we rely on a triangle of partnerships between Thrane, external partners, and our customers.

What is the level of maintenance and after-sales service offered in Kazakhstan

and have you seen improvements in recent years in terms of outsourcing?

There is a big difference between Kazakhstan and Europe in the level of maintenance and after-sales service. In Europe, it tends to be sub-contracted, but in Kazakhstan, this remains in-house and more people have to be employed, and arguably, the level of service is not always to the required standards. Outsourcing could benefit Kazakhstan, but, to date, there has been no firm action. The lack of infrastructure in Kazakhstan can be a challenge, but it has not halted Thrane's ability to carry out its after-sales service and maintenance.

Have you experienced difficulty in introducing new technologies?

Universities in Kazakhstan are top-heavy with older people who can be resistant to change. Companies are reluctant to be the first to take the initiative and risk of introducing new technology; albeit they do have younger people in situ who are more likely to welcome new proven technology. Europe is more accommodating towards new technology. The mentality in Kazakhstan is quite risk-averse where personal responsibility for failure is avoided in the case of introducing something new in a company's operations. In Europe, this is understood to be a calculated risk, but with potential for success that can save a company time and money in the long run. So, the project will move forward without risk of personal consequences.

What are Thrane's competitive advantages in Kazakhstan?

Thrane specializes more in new technology than its counterparts. Larger competitors concentrate more on big turnkey projects, but Thrane focuses on established and new plants. In Kazakhstan, Thrane would like a breakthrough and acceptance of its new technologies. It is only a matter of time before the pressure on companies to reduce production costs per metric ton aligns with Thrane's new technologies. The current downtime in mining operations affords a company the time to try new technology. ●

●●● **Can you give a brief overview of Thrane?**

Thrane Group consists of companies located in Norway, the UK, Russia and Kazakhstan with close partners in the United States, the United Kingdom, and Germany. Thrane Group brings the best solutions based on know-how, equipment, and design. Thrane & Thrane Teknikk was established in 1954 and has been supplying quality products and solutions to the industry since then. The group now has activities in Russia, Kazakhstan, the Ukraine, Norway, and the United Kingdom. New products and know-how from all over the world are regularly being added to ensure that everything from complete projects to individual products and solutions uses the latest and best technology on the market. Thrane's first business in the region, i.e. Russia, was in 1991, which was followed by a representative office in 1998. Business escalated, and by 2005 the representative office model no longer satisfied the compa-

Ugur Basturk

●●● General Director
AK MACHINERY

●●● **Can you please give a brief overview of AK Machinery and its developments in the last three to five years?**

AK Machinery began in 2007 in Kazakhstan and was the first serious dealer for Volvo Construction Equipment investing not only in sales but also after-sales and parts services. In 2014, AK Machinery ended its association with Volvo and took on a dealership with Hidromek from Turkey; the rationale being that Hidromek had more desire to invest in the construction and mining sector in Kazakhstan as part of its global expansion. Hidromek recently purchased 97% of the factory in Thailand that manufactures Mitsubishi's motor grader. 2015 will be a year of gaining insight between AK Machinery and Hidromek; the company's association with Hidromek has inaugurated extension into Uzbekistan and Turkmenistan, previously covering just Kazakhstan and Kyrgyzstan.

What levels of mining and exploration activities are you seeing in Kazakhstan?

It was difficult to work with Volvo Construction in the mining sector as its product range was unsuitable; due to this, AK Machinery lacked exposure to the mining sector so its knowledge was limited of mining and exploration activity in Kazakhstan. With Hidromek's dealership, AK Machinery has enlarged its product offering and will be more active in the mining sector, especially to the suppliers and explorers who are big players in Kazakhstan with specialized requests. Products that the company is supplying to the mining sector are: excavators; Putzmeister concrete mobile pumps; Atlas Copco bit mining attachments; Guris of Turkey concrete batching plants; LasZirh tire protection chains; and Inan Makina MTB hydraulic breakers. Focus is now on establishing new contacts in the mining sector; the company has existing customers in the construction sector. AK Machinery is currently restructuring, closing some regional offices and appointing local agents who are being product-trained, and financed by AK Machinery, Turkey; this will give more points of contacts for clients.

What percentage of AK Machinery's business comes from mining and construction?

Currently, the mining business is 30%, and construction is 70%. After the marketing of the company's mining services, it is confident that the mining business will significantly increase. Today's economic climate has adversely affected construction, the company is 50% down on its construction business; however, even with low commodity prices mining is stable. The company is pushing other distributors to further expand its mining portfolio; its objective is to become a one-stop-shop that will be mirrored for its construction business.

What is AK Machinery's competitive advantage?

AK Machinery's competitive advantage will be its one-stop-shop, supported by a team of expertise for sales, parts and after-sales superior to its competitors, as are AK Machinery's financing terms, i.e. cheap credit from Turkey. The company has retained its staff who, over the years, has built a wealth of expertise and consultation capabilities to offer its customers.

AK Machinery has also established long-term agreements with its clients, especially for maintenance. Good customer service equals repeat business.

What are the challenges of working in Kazakhstan and its mining industry?

Kazakhstan's geographical size, its infrastructure and bureaucracy i.e. customs time delay, makes it a challenging country to work in; however, the country's infrastructure is slowly improving, and AK Machinery is optimistic that there will be a reduction in bureaucracy.

How will the new Mining Code change Kazakhstan's mining sector?

Investment is increasing in the mining sector; Kazakhstan's minerals are under-explored, and AK Machinery's objective is to be a service provider for entrepreneurs coming to the mining sector. The government's new Mining Code will help stimulate mining activity; any company entering the mining sector will need the type of expertise/consultation that AK Machinery can offer. Its strategy will be to segment: specialists for mining and specialists for construction.

Where do you see AK Machinery in Kazakhstan in three to five years?

AK Machinery will have greatly increased its turnover, expanded its mining business; and developed a network of local agents in Kazakhstan with at least one in each city to facility customer satisfaction have developed a network of local agents in Kazakhstan with at least one in each city. This is actually one of our primary goals to have agents representing AK Machinery all over Kazakhstan. Our strategy is not to open offices that may still be far from our clients, but to have agents who are right there on the ground ready to help. We seek to train them to provide consultation and immediate assistance to clients even in remote locations. They will be receiving plenty of support from our head office and other locations around Kazakhstan. These are our plans for the foreseeable future. ●

Alisher Kamilov, Daniyar Ismuratov & Yuriy Pelmenev

AK: Marketing and Communication Manager
DI: Regional Group Trucks Sales Manager
YP: Regional Group Trucks Sales Manager
VOLVO GROUP KAZAKHSTAN

local mining companies favor the cheaper option of operating Chinese trucks. Volvo Group Kazakhstan is trying to change the mindset of mining companies on Chinese trucks, highlighting the long-term reliability of Volvo/Renault trucks. Arguably, when Chinese trucks begin to develop faults, mining companies will switch to the known quality of Volvo/Renault.

What are Volvo Group future expansion plans in Kazakhstan?

DI: The company's expansion plans will depend upon the global market situation, especially for natural resources. Currently, mining companies are cutting budgets, for example Kazakhmys and ERG, and waiting for an improvement in commodity prices. There is potential business for Volvo Group when the market improves; meanwhile Volvo Group will pursue the smaller companies who perform short-term sub-contract work, but the investment in a Volvo Group trucks versus the cheaper Chinese truck is an issue. Volvo Group's strategy to overcome the price differential is to promote the reliability of its trucks by loaning them to mining companies for test drives.

How do you handle competition from western companies, i.e. Scania; and what is your market share?

YP: Competition in the mining industry is tough, i.e. from Scania, a company that is well established in Kazakhstan's truck market, offering service workshops and financial solutions for its customers; however, Volvo Group's mining product portfolio is one of the best in the world. Volvo Group's market-share target in Kazakhstan is 20%; Scania's market share has risen from 10% to 20% year-over-year.

What kind of financing and leasing options does Volvo Group offer?

AK: Volvo Group Kazakhstan do not offer its own financing solution in Kazakhstan, but works with the leading companies in Kazakhstan to provide financing for its customers; in 2015, Volvo trucks have been delivered to a mining company in Karaganda under a leasing agreement, generating a profitable return for the company. There has been a gradual move towards investing in western trucks on the rationale that although investment is higher, they are more reliable with a longer lifecycle than Chinese trucks.

What after-sales service and maintenance do you offer to your customers?

DI: Mining companies prefer to have on-site maintenance; Volvo Group will arrange a mobile workshop. The geographical size of Kazakhstan and the remoteness of mining projects does not facilitate servicing Volvo and Renault tippers, for instance, from its centers.

Can you highlight some of the biggest challenges that you have encountered when working in Kazakhstan? Is the quality of fuel a challenge?

AK: The challenges for Volvo Group Kazakhstan are: finding finance solutions to match a customer's expectations and the price differential between Volvo/Renault trucks and Chinese trucks. The implementation of the Euro IV emissions standard in Kazakhstan could benefit Volvo Group, as current Chinese trucks would arguably fail this emissions standard; an opportunity for Volvo Group trucks to increase its market share. Fuel quality is not a big issue for Volvo/Renault trucks provided that it is purchased from a reputable distributor.

How important is Kazakhstan to Volvo Group's global operations; do you have plans to expand into other central Asian countries?

AK: Kazakhstan is perceived by Volvo Group as having the most potential of the countries in the Central Asia region; Kazakhstan's development rate is the highest in the region, and unlike the remainder of Volvo's global locations, enjoyed the major investment of a new workshop. The company has agents in the region and full working importers in Turkmenistan, Azerbaijan, Armenia and Georgia. Volvo Group has shown a growth rate of up to 15% to 30% in any one year.

What are Volvo Group's plans for the next five years?

AK: To further expand business in Kazakhstan, selling more trucks and recruiting more local people.
DI: Expand business especially in the transport sector in tandem with the construction of the new Silk Road, the Western Europe-Western China highway. Volvo Group has a positive forecast for the next five years in Kazakhstan. •



Alexey Strikha

Regional Director Kazakhstan, Ukraine, Uzbekistan
METSO KAZAKHSTAN

How much does the mining industry contribute to Metso's revenue in Kazakhstan? Has this changed since the decline in commodity prices?

At the moment, Kazakhstan represents a relatively small portion of Metso's global revenue, but we hope to grow. Along with other equipment providers, Metso is following global trends. When metal prices and investor interest are high, we receive as many orders for capital equipment as for services. When they are low, the services share prevails.

What is Metso's market share for the sale of mining equipment in Kazakhstan?

This is an interesting question because every year is different. Overall our market share is major, within the high quality, Metso caliber of equipment. However, at the moment, low-cost equipment providers keep considerable market share where Metso is not represented.

Considering many local companies are not ready to invest in Metso's equipment over cheaper products, how are you trying to change this mentality?

There are two global approaches. Junior companies try to keep capital expenditure as low as possible, while majors prioritize reliability and quality. Nevertheless, the market is global, and today with a large number of mines around the world, quality is becoming progressively more important. This is why we expect a market-wide shift towards higher quality products. Our customers also have certain obligations to their end users. For example, Metso serves concentrators who provide raw materials for steel plants. Our customers want to feel confident that their products will be delivered on time for further processing. This is difficult to achieve with unreliable, low-quality equipment.

Does Metso have any specific training programs in place for operators of your equipment?

Of course, training is also our primary focus. Industry professionals continuously go through Metso's training courses. Decades of close customer collaboration have transformed us into a knowledge company; we have facilities around the world where electricians, operators and customers can come and train. All local operators have access to these resources, which are available in every country to different extents.

Given the size of Kazakhstan, how does Metso efficiently provide its services and solutions across the country?

This is Metso's main challenge in Kazakhstan, especially because we are relatively far from the main sources. Hence we invest significant efforts into securing a local presence and availability. Metso has established numerous service facilities and placed engineers as well as satellite stocks in remote locations. This is the only way to do business in Kazakhstan, thus we invest quite heavily to do so.

How would you characterize the investment climate in Kazakhstan, specifically in the context of mining?

The government dedicates a lot of attention to the mining sector and serves as the primary driver of the industry here. The adoption of the JORC, for example, signifies their commitment to attract and diversify the range of investment. The country was the first in the CIS to do so, making the transition from local to international standards a giant step. This move is part of a positive trend and demonstrates the administration's focus, which is important for the mining community. From our perspective, Kazakhstan is open to change.

Where do you see Metso in the next three to five years?

Metso has a relatively solid installed base of equipment. Our main focus is to maintain this existing installed base and improve it as much as we can. Since metal prices are low at the moment, investors are reluctant. Metso will continue to focus on its aftermarket activities, which are built from technological excellence, experience, and the highest safety standards. Additionally, there are infrastructure projects underway due to presidential programs. Most sites are located in remote areas, making infrastructure development crucial. Regardless of the global situation, the Kazakh government will continue to develop projects, which provides Metso with opportunities. Additionally, there are many greenfield projects that Metso is working on, which may take anywhere from one to five years to complete. Thankfully, there remains a significant amount of work to be done, and Metso is putting all of its resources and knowledge forward to keep going strong. •

Can you please give a brief overview of Volvo Group in Kazakhstan, the rationale behind its presence in the region and its association with Renault?

AK: In 2008, Volvo Group was established in Almaty, Kazakhstan and today, it has offices in central, west and south Kazakhstan. The rationale behind Volvo's presence in Kazakhstan is that it is a developing country with many opportunities for truck producers. In 2013, Renault Trucks (merged globally in 2001) were introduced into the Volvo Group Kazakhstan portfolio as well. Previously, the French truck producer was represented by another dealer, Turkuaz Machinery.

What percentage of your business comes from the mining sector?

AK: Most of Volvo Group Kazakhstan's turnover stems from transport, specifically long-haulage trucks. Mining is minimal as

Why did Metso choose to enter the Kazakhstan market?

The answer is very simple: the raw material base is excellent in Kazakhstan. You can find almost every mineral in this country.

Please walk us through Metso's most important products that are used by the mining sector, including any new technologies in the pipeline.

Through our knowledge and experience, Metso continuously works on the development of many products. We are introducing a range of new equipment to the Kazakh market, providing solutions to our customers. Single pieces of new technologies are not always wanted nor demanded by the miner. Hence we are developing an integrated solutions which we provide to customers rather than just a unique piece of equipment.

INNOVATIVE SERVICE SOLUTIONS FOR MINERS IN KAZAKHSTAN

Service companies are providing a wide range of software, technology, engineering, laboratory, consulting, and financial solutions to support the resurgence of Kazakhstan’s mining industry.

●●● Mining Software

Foreign companies usually provide mining software, although some local or Russian ones also play a part. Some of the companies operating in the country are MICROMINE, RJC Group, Geovia (part of Dassault Systèmes), and GeoMineProject. It has been noted that international software providers should lower their prices for smaller Kazakh companies, as they may find them somewhat out of their price range.

“The biggest issue related to the integration of new technologies and software in Kazakhstan is the poor awareness of these technologies among the older generation of specialists. At the same time, young specialists that have the skills to work with new technology do not have the experience of working at mine sites, thus they have no experience in integration of such technologies,” explained Georgiy Freiman, chairman of the board of directors of GeoMineProject.

To address this problem, companies can become involved with education and training. “MICROMINE also works with local service companies and educational institutions where it supplies solutions free-of-charge to benefit students studying geology of mining. For example: in the coming months, MICROMINE will be traveling to East Kazakhstan’s technical college to instruct lecturers on its solutions. When a company purchases a MICROMINE solution and lacks in-house expertise, a training program is obligatory to maintain standards,” said Arman Anapiyaev, business development manager at MICROMINE.

International software providers not already in the country should keep Kazakhstan in mind as the country is well on its path to become the next mining hotspot.

●●●

Innovative Solutions

Despite the country finding itself in need of foreign investment both financial and technological, Kazakhstan’s people are well educated and hungry to succeed. Since Soviet times, the country has fallen behind in terms of innovation and creativity, but, nevertheless, pockets of local innovation continue to thrive. 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 enjoy substantial success in providing their technology to their clients. “Our center unites academic and industrial institutes in the sphere of mining and mineral processing in Kazakhstan. It was considered that the Soviet organizations were not working efficiently in terms

of industrial application of scientific developments and the role of our Center was to improve this situation, ensure scientific development, strengthen the scientific and technical potential of the country and thus aim for technological breakthroughs in Kazakhstan. At 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 that 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,’” said Abdurasul Zharmenov, general director of the National Center on Complex Processing of Mineral Raw Materials of the Republic of Kazakhstan.

Another interesting provider of innovative services that has just recently entered the Kazakh market through a joint venture with Kazgeology is the Canadian company Geotech. The new venture, named KazGeotech, is a provider of geophysical airborne surveys and, despite being in the country for only about a year, is already greatly in demand by the most important companies. “The technology KazGeotech uses is patented by Geotech: Z-Tipper Axis Electromagnetic system; and Versatile Time Domain Electromagnetic system. KazGeotech has recently introduced a fixed-wing aircraft survey for Rio Tinto in Kazakhstan,” said Said Sultanov, director of KazGeotech.

Thrane Teknikk is yet another example of an innovative solutions provider, one that has had a long presence in Russia, but has only entered the Kazakh market fairly recently. “Thrane’s portfolio has three main products: sensor-based sorting for ore, fine screening, and paste technology. Sensor based sorting for ore offers bigger capacity and considerable savings by sorting out waste rock before it enters the beneficiation plant. The next step in the beneficiation plant is milling, traditionally used with cyclones; however, this method generates low efficiency and Thrane has now introduced a fine screening concept to replace cyclones. The energy saved from the screening concept will give a 30% to 50% increase in capacity, or from a green perspective, liberate the energy for other uses,” said Nils Thrane, the company’s president.

Kazakh companies and institutes are themselves initiating improvements with a wide range of applications, notably in Kazakhstan’s biggest industries such as oil and gas and, increasingly, mining.

●●●

Engineering, Laboratory and Consulting Services

There is a slow but steady trend among companies in Kazakhstan to use EPCM providers, which has not been the case historically. Local companies like KPSP are partnering with international ones that have extensive experience. These types of partnerships are crucial to help develop Western practices in Kazakhstan. “There are large companies that have access to the newest technology and have the capacity to invest. Shareholders of KPSP decided to bring the company to a new level and to begin collaboration with Fluor, a large international engineering firm. Fluor was happy to work with us and now we are work-

ing together on the TengizChevrOil project. For us this is a very new format of work and we are very much looking to earn the respect of our American partners,” said Abzal Akhmetzhanov, first deputy general director of KPSP.

Another area of expertise necessary to develop and grow the market is testing and laboratory services. SGS has a well established presence in Kazakhstan. “We may say that geochemical tests are in fashion, which is attributed to the active geological performance of local mining companies including junior companies funded by foreign enterprises. Though in terms of revenue and the bottom line performance, the trade inspections as well as technological inspections are more attractive,” said Azer Mammadov, managing director of SGS Kazakhstan and Caspian Sub-region.

SGS also offers the Belarus-Kazakhstan-Russia Customs Union conformity assurance certificate. This has proved a popular service, especially since the Eurasian Economic Union continues to have a positive impact on the whole of CIS. “The key advantage for our customers obtaining such certificates rests with overcoming technical barriers upon trade in the Eurasian Economic Union (EEU), which includes Kazakhstan, Russia, Belarus, Kyrgyzstan and Armenia. The common rules and requirements practiced on the territory of the EEU allow use of these certificates in any EEU country without any additional authorization procedure. At the moment, not all requirements for this certification are being harmonized but intensive work is being conducted to form and set common requirements,” added Mammadov.

Yet another step to help bring in outside investors to conduct exploration is the transition of Kazakhstan from its own GKZ to the JORC standard in line with the international community. “In December 2014, Kazakhstan accepted an analog of the Russian code for auditing, NAEN, ‘Kazakhstan CRIRSCO’. The accepted code is an adapted ver-

sion of JORC, which allows public audit as well as GKZ reports, but under the condition that GKZ reports have the priority. Of course, this system will simplify work for a lot of companies, but at the same time we do hope that JORC is still going to enter the systems of mining companies in Kazakhstan very soon. Having two standards is excessive and complicates the understanding of the resource base among investors,” said Freiman of GeoMineProject.

There are a number of consulting companies present in Kazakhstan that provide services ranging from exploration to mine closure. These companies are an important element in developing the industry and their presence and expertise in due diligence and other services is required by the international players looking to invest in Kazakhstan. Kazakh companies understand that adhering to international standards is of vital importance to demonstrate to the world mining community that they can conform to its high standards. “SRK provides expert opinion and technical solutions based on internationally recognized best practices. If technical advice on local requirements is needed, SRK collaborates with local design institutes that are more specialized in meeting local design requirements. These local requirements differ significantly from international approaches, but we have become quite familiar with managing the two approaches in parallel, to minimize cost for the client and avoiding duplication of work where possible. A good example of this is in the field of geotechnical engineering. Precisely calculating the final safe pit slope for an open-pit project can result in a major saving of stripping costs,” said Tony Thornton, general director of SRK Consulting.

Ruslan Sevostyanov, general director at Wardell Armstrong agrees: “The mine design and mineral resource estimation standards and methodologies currently used in the FSU were inherited from the Soviet era and, having originally been tailored to Soviet economic realities,

НАМ ДОВЕРЯЮТ

ГЕОХИМИЧЕСКИЕ ЛАБОРАТОРНЫЕ ИССЛЕДОВАНИЯ

- Новейшее оборудование и высококачественные технологии
- Примеры проектов: мобильный участок мокрой химии на месторождении «Бенкала» и мобильный участок пробоподготовки в Усть-Каменогорске

ТОРГОВЫЕ ИНСПЕКЦИИ ПРОДУКЦИИ ПРИ ЭКСПОРТЕ И ИМПОРТЕ

- Независимая проверка количества и качества сырья и готовой продукции
- Признание сертификата SGS в любой точке мира

ТЕХНОЛОГИЧЕСКИЕ ИНСПЕКЦИИ: СКВОЗНОЙ КОНТРОЛЬ НА ПРЕДПРИЯТИЯХ

- Аутсорсинг функции ОТК, расчет баланса металлов
- Оптимизация процессов на базе лучших мировых практик

КОНТАКТ
 СЖС Казахстан ЛТД.
 т: (727) 258 82 50/51
 e-mail: sgs.kazakhstan@sgs.com
www.sgs.com

SGS – МИРОВОЙ ЛИДЕР В ОБЛАСТИ НЕЗАВИСИМОЙ ЭКСПЕРТИЗЫ, ИСПЫТАНИЙ И СЕРТИФИКАЦИИ

WHEN YOU NEED TO BE SURE

SGS

do not sufficiently cover the economic aspects of a mining project being developed in the modern economic environment. This has led to a situation when FSU companies seeking foreign investments have to significantly rework and amend their project designs to meet international standards. Therefore, our role in Kazakhstan as a consultant is mainly to use their geological, mining, metallurgical and environmental expertise to advise their clients on how to ensure international compliance of their businesses and meet the requirements of international investors.”

A variety of service providers are already in the country assisting both producers and explorers, but as the industry continues to grow, others should continue to enter this already expanding sector.

...

Professional and Financial Services

The limited options provided by the Kazakhstan Stock Exchange (KASE) have been of particular concern among investors in the country’s mining industry. Historically, the KASE has been used as an instrument to of-

fer shares by the government in larger companies. “We would normally become involved in financing at the initial public offering stage. Currently, there is little activity for us in this sphere. The Kazakhstan government is planning to make its stock exchange more effective by insisting that companies who list overseas and have their major assets in Kazakhstan list on it, with the rationale being to add value to the Kazakhstan stock market,” said Aaron Crouch, audit partner at Deloitte.

“The local market is still underdeveloped as the KASE is still not in a position where it can accommodate startup companies, although it is looking at ways to accommodate this. Mid-tier mining companies are still struggling to raise local finance. The local banking system is not robust or experienced enough to provide bespoke financing packages for developing mining companies,” said Tony Thornton, general director of SRK Consulting.

Kazakhstan boasts a very small, but thriving private equity market. Centurion Resource Group has actively pursued investors from abroad, especially the United States, to invest in projects in Kazakhstan. One of their investments was BAST’s Maksut copper-nickel project, which was the first small-cap equity

company listed on the KASE. Investors have enjoyed a 40% return on their capital and the production at Maksut is expected to begin in the fall of 2015.

One way to acquire financing besides the KASE or commercial banks can be through the Eurasian Development Bank (EDB), founded by Russia and Kazakhstan in 2006 and now including many Central Asian nations as its members. “One of the bank’s first projects was the development of the Zarechnoye Uranium Deposit, implemented by a joint venture between Russian and Kazakhstan entities. The EDB provided \$63 million to finance the project. Current production capacity of the mine is about 1000 metric tons per year of uranium. Later in 2006, the EDB, in syndicate with two German banks, West LB and Bayerische Hypo-und Vereinsbank, opened a \$120-million credit facility to finance the development of the Voskhod chromium deposit in Aktymbinsk oblast. The EDB’s share was \$60 million,” said Galymzhan Tajiyakov, director of Project Finance Group at the Eurasian Development Bank.

Meanwhile, the European Bank for Reconstruction and Development (EBRD) has invested roughly \$7 billion in the local economy. Half of these investments focused on the private sector including loans to mining projects. Some of the projects agreed to this year have been a 70 million euro loan to the first solar plant in Kazakhstan and a 42.5 million euro loan to upgrade Astana airport’s infrastructure. This brings EBRD’s investment in Kazakhstan to \$420 million in 2015 alone.

The lack of financing options should not put off international investors, as these are bound to develop along with the industry. There are, nevertheless, other issues that the government has the power to influence to help create a more accommodating business climate, including stable tax regulations. “Action by the government for the further development of legislation to provide more guarantees on the stability of legislation in respect of subsoil use and taxation in particular is needed. The government should establish an absolute limit for the maximum tax burden for a mining company, which would provide for more assurance to investors that regardless of different interpretation of tax legislation there will be an absolute limit above which their investments will not be taxable,” said Sergey Demytyev, audit partner at KPMG Kazakhstan and Central Asia. Changes like these would signal further improvements to the business climate and help boost investors’ confidence. •



Abdurasul Zharmenov

...

General Director
NATIONAL CENTER ON COMPLEX PROCESSING OF MINERAL RAW MATERIALS, REPUBLIC OF KAZAKHSTAN

... **Can you please tell us about the role that the center has played since its inception?**

The inception of the center dates to 1992, when the President of Kazakhstan issued a decree that a network of national centers was to be created covering the priority sectors of the economy. Mining and metallurgy and nuclear energy were among these key sectors. The first center created under this decree was the National Nuclear Center, and the second one was ours, the National Center on Complex Processing of Mineral Raw Material of the Republic of Kazakhstan. Our center united academic and industrial institutes in the sphere of mining and mineral processing in Kazakhstan. The Soviet organizations were not working efficiently in terms of industrial application of scientific developments, and our role was to accelerate and improve this situation, ensure scientific development, strengthen scientific and technical potential of the country, and, thus, aim for technological

breakthroughs in Kazakhstan. In the beginning, there was not enough capital to support all the projects; 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 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 are implementing dozens of projects and developing innovative solutions that are now also being used across the world. Thanks to this, we can now communicate better with our clients and speak ‘the same language’. Moreover, when we speak about implementing projects in Kazakhstan, we are confident that nobody knows our mineral wealth better than we do.

Can you please tell us about the center’s structure, its divisions and the role that the central office plays within the organization?

The center has seven branches: Institute of Geology and Economics of Mineral Raw Materials, Almaty; D.A. Kunayev Mining Institute, Almaty; Zh. Abishev Chemicometallurgical Institute, Karaganda; Eastern Research Mining and Metallurgical Institute of Nonferrous Metals, Ust-Kamenogorsk; Kazmekhanobr State Scientific Production Association of Industrial Ecology, Almaty; Center of Metallurgy; and a subsidiary in Astana. The central office determines the general strategy of the company, develops scientific programs, and manages various projects, assesses new technologies and their industrial potential. Within the central office, we have research laboratories, design-construction department, testing and experiential section, which work on scientific and technology products development as well as branches, which also work on the creation of scientific products.

Can you tell us about your portfolio of clients?

We cooperate with many local companies, such as Samruk-Kazyna, ArcelorMittal Temirtau, Kazatomprom, Kazzinc, and foreign companies, such as POSCO, ThyssenKrupp, Hanwa Co., SMS Siemag, and

others. For example, we have developed technology for a lead factory for the Canadian company Teck Cominco. We have also done work in Italy, Bolivia, Brazil, and China. At the moment, we have close relations with ThyssenKrupp and POSCO, which is funding the construction of a production facility in Kyrgyzstan.

Can you give us an example of a technology that the center has developed and you are most proud of?

We have created technology for smelting of the ferro-aluminum-silicon and the ‘Kazhstanskiy’ alloy for deoxidation, modification and alloying of steel, based on the use of off-grade carbonaceous feed, which was truly revolutionary. Current technology is patented in 15 countries - Kazakhstan, Ukraine, Russia, Kyrgyzstan, United States, European Union, Algeria, Mexico, South Africa, China, South Korea, Hong Kong, Australia, and Japan. 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.

We also proposed a new technology for the production of ferrosilicon, which allows us to reduce the percentage of aluminum and titanium in the final product. At this stage in the implementation of the roadmap for the development of mining and metallurgical complex in Kyzylorda region, we are planning to construct a ferroalloy factory for the production of ferrosilicon with low content of aluminum and titanium.

How do you assess the current situation for foreign investors, and what are your future plans?

Today, foreign investors are not as eager to work in Kazakhstan as they were a couple of years ago. Despite the fact that the government is making certain amendments in the legislation to facilitate the work of foreign companies, it has also become stricter in some respects with international investors. By 2020, we are planning to increase the share of international sales to 50%. Today, only 5% to 10% of our sales come from abroad. •

CLEVER RESOURCEFUL SOLUTIONS

At Orica, we're focused on developing long-term partnerships which reduce total life cycle costs, improve productivity and enhance your licence to operate.

We combine our global R&D team's progressive thinking with the expertise of our technical team to find solutions that meet the daily challenges of your operation.

To find out more about our offer, contact our Kazakhstan office at (7232) 22 49 53 or visit www.órica.com

Blasting Systems

órica.com



Said Sultanov

Director
KAZGEOTECH

It is important to have a partner who is familiar with Kazakh regulations and employing local personnel within a multinational company; in these circumstances, joint venturing is the most efficient way of providing a service in Kazakhstan. A great example is Air Astana, which is 51% Samruk Kazyna, and 49% BAE Systems.

Which of your technologies are most applicable for Kazakhstan and what is the market demand for airborne surveys in the region?

Initially, fixed-wing surveys where big areas can be mapped are the most applicable for Kazakhstan. Once the client identifies prospective mining areas, the helicopter ZTEM and VTEM surveys can be used. From a VTEM survey, drilling can be carried out; this setup has been successfully used in Africa. Gravity survey is another available service for the oil industry. The demand for airborne surveys is growing; good results in identifying mining opportunities will stimulate further interest. Currently, it is the majors, i.e. Rio Tinto and Kazzinc, which are benefiting from the surveys.

When were your technologies patented and how long have they been available globally?

Airborne surveys came on-stream in the western world about 20 years ago. In Kazakhstan, these surveys were used in the Soviet Union. Technologies have advanced and today airborne surveys afford a better understanding of the geology; ZTEM technology gives the ability to see up to 2 kilometers (km) beneath the surface. During Soviet times, Kazakhstan was explored on the surface, but after a lull in activity during the 1990s, exploration has been increasing, especially for airborne surveys.

What is the cost of an airborne survey and how is it calculated?

The cost of an airborne survey is usually provided per line km. The cost depends on a number of factors, such as the size and the shape of the area, how far the base from the area, the type of the aircraft used, etc. The cost of the fixed-wing magnetometer/spectrometer surveys under "normal" conditions is usually in the range of \$28 to \$35 per line km; for VTEM surveys, \$150 – \$180 per line km; and for ZTEM, \$180 – \$210 per line km.

What are the advantages of having a joint venture with Kazgeology rather than being solo?

Are there any other geographical areas of Kazakhstan that you are focusing on in addition to eastern Kazakhstan?

In 2015, KazGeotech will continue its operations in eastern Kazakhstan during August. In the center of Kazakhstan, the company will conduct fixed-wing airborne surveys for Rio Tinto, and in the south surveys are being carried out on behalf of the government. Western Kazakhstan is still to be part of KazGeotech's portfolio; it is a known location for minerals.

What type of training programs do you have in place?

KazGeotech's programs are practical; its senior geophysicist teaches interns, who are university students and have a basic knowledge of electronics/engineering. Interns are carefully chosen; the current two interns are already operating solo the ZTEM project and are able to assemble and test the system before the geophysicist takes over. From September 2015, the company will be training interpretation geophysicist with the aid of software and accompanying instructor from Canada; only qualified geophysicists would be appropriate for this training.

What are KazGeotech's plans for the next five years?

KazGeotech plans to increase the mineral resources base of the country, train as many local people as possible in all its services (field operators, geophysicist, data interpretation, airborne survey pilots), transfer the technology into Kazakhstan and create more local jobs.

Over the next five years, with the financial assistance of the World Bank, KazGeotech's plan is to fly 2.7 million sq. km. of Kazakhstan; this initiative is supported by Kazakhstan's government. For 2016, KazGeotech plans to create its own aviation company, bringing in two fixed-wing aircraft and two Eurocopter B3s, making it a vertically integrated company. Currently, the company has one fixed-wing aircraft from Geotech, and when using ZTEM and VTEM, helicopters are chartered from Sky Services who has the only Eurocopter B3 in the country. Although we have an excellent relationship and I would always recommend Sky Service, we do not want to be dependent on someone else when it comes to providing good quality service to our clients. •



Global Oil&Gas



24th Kazakhstan International Oil & Gas Exhibition and Conference

4-7 October 2016
Atakent, Almaty, Kazakhstan

Find out more at
www.kioge.kz





Azer Mammadov

Managing Director
SGS KAZAKHSTAN AND CASPIAN SUB-REGION

What level of interaction do you have with the mining industry in Kazakhstan and which of your services are most in demand?

We operate in business-to-business industry and building long-term relationships with our customers is paramount, therefore in most cases we are partners to our customers, and this partnership has been built for years. We do interact with different companies in different market segments like geochemical and metallurgical tests, trade inspections, mobile on site laboratories, technological inspections etc. Speaking of demand, we may say that geochemical tests are in trend, which is attributed to active geological performance of local mining companies including junior companies funded by foreign enterprises. Though in terms of the revenue and the bottom line performance the trade inspections as well as technological inspections are more attractive, as these inspections are usually long-term or bigger in volume (bulk shipments).

In 2010, SGS forecasted a substantial increase of international companies' investment activity in the mining sector in Kazakhstan. To what extent have these predictions come true and what is your current expansion strategy here?

Unfortunately we did not witness increased investors' activity in the mining sector. Though exploration budgets from 2010 to 2012 were growing, they have since been declining. At the moment the Kazakhstan exploration budget is almost the same as in 2010. There might be plenty of reasons for that including different macro environmental factors but the most obvious one is legal and tax issues that foreign investors think of when entering this geographical region. Keeping this in mind the government is revisiting the concept of the local Mining Code which shall now resemble some similarities with the Australian mine code. As a company, we have our own mid and long-term visions and objectives, which also imply the investment of tangible resources to ensure that we deliver the exact types of solutions for our customer that at the end of the day will add value. When we say tangible resources we mean certain capital expenditures that we do for our customers in order to facilitate development of a certain stage in the project. Our expansion strategy is organic in most cases i.e. we grow by using our own experience and knowledge but we may

consider acquisition. Currently our main focus is trade inspections, geochemical tests and technological inspections.

SGS offers conformity-assurance certification for the Belarus-Kazakhstan-Russia customs union conformity assurance certificate. How has this improved your clients' operations?

The key advantage for our customers obtaining such certificates rests with overcoming technical barriers upon trade in Eurasian Economic Union (EEU), which includes Kazakhstan, Russia, Belorussia, Kyrgyzstan and Armenia. The common rules and requirements practiced on the territory of EEU allow use of these certificates in any EEU country without any additional authorization procedure. At the moment, not all requirements for this certification are being harmonized but the intensive work is being conducted to form and set common requirements. Taking into account that Kazakhstan has become a WTO member the technical requirements of EEU will have to be harmonized with WTO requirements and once done, this shall have positive impact on trade activity of WTO member countries. Occupational health and safety presents a number of shortcomings in Kazakhstan. What can SGS do to increase the overall safety of mining employees in the country? SGS services related to OHSAS 18001 standards (we deliver training courses and certification audits) contribute to make the mining industry healthier and safer. The purpose of this standard is to prevent incidents at work; this standard is especially applicable to high-risk mining operations. In Kazakhstan SGS certified with OHSAS standards such companies as JSC Katko, KazTransOil, and others.

What are your plans in Kazakhstan for the next five years?

Our plans are to grow and further diversify. We anticipate that the market will pick up and simply want to be at right time in right place. Our business style, based on partnership rather than on the client-executor philosophy coupled with highly skilled professionals in our team allows us to look into the future with optimism. •

●●● Since 2001, SGS has a structure of 10 business segments operating in 10 geographical regions. Can you give us more background on this arrangement?

This coincides with the vision of the company i.e. to be the most competitive and most productive service in the world. We have been building our competitive strengths for years and we obtained skills, knowledge and finance resources to deliver high quality services in most industries. The reason why we operate in different segments is attributed to the need of market development with service diversification. Thus we ensure growth of the business by being able to deliver a variety of services to different segments in the market. Geographical expansion is also part of market penetration and market development strategies, hence operating globally allows achieving economies of scale and business growth especially in emerging and developing countries where economic activity is growing.

Abzal Akhmetzhanov

●●●
First Deputy General Director
KPSP

Kazakhmys as subcontractors and develop a design for reconstruction of a beneficiation plant in Nurkazgan for processing of copper ore.

KPSP offers EPC services. How would you assess the readiness of Kazakh companies to work with just one contractor?

EPC format is an international standard of work in many countries, but Kazakhstan remains an exception to this rule. Luckily, we are now moving towards it. KPSP began working as the main design contractor for a glass factory in the Kyzlorda region, where we are a part of an EPC consortium. In order for us to fit within the EPC format, we created a construction department within our company together with SICIM, as well as a trading house. We see that there is a strong interest on behalf of our client for EPC services, because they make it a lot more convenient to work. We hope that in the next five years we will see more projects in this format.

Currently, many mining companies are looking to decrease their capital expenditure in view of lower metals prices. What solutions can KPSP offer its client base?

We continuously work with our clients to optimize capital expenditures. We are able to do this through several ways. We use construction materials that enable us to minimize the construction timeline. Secondly, we offer various complex solutions. We are able to run design and construction processes in parallel, which also decreases construction time. Lastly, we work on implementing 3D modeling, which allows us to get information about the project, which is used in construction and during operations of the project.

Can you tell us about your collaboration with Fluor and the advantages it presents to KPSP's employees?

There are large companies that have access to the newest technology and the capacity to invest in further development. Shareholders of KPSP decided to bring the company to a new level and collaborate with Fluor, a large international engineering firm. Fluor was happy to work with us, and now we are working together on the TengizChevroil project. For us, this is a very new format of work and we are very much looking to earn the respect of our Ameri-

can partners. Parallel to working on various projects with Fluor, we are also working on creating a corporate center for training of our staff. Thanks to the fund created by Fluor we were able to provide several students with grants.

Since 2012, KPSP has been collaborating with the Karaganda Technical Institute to create a corporate university. How have your employees benefited from this collaboration?

Today, we have three groups of specialists working at KPSP. The first group is the specialists who have very extensive experience and are typically older and approaching retirement or have already retired. The second group is employees between 20 and 30 years of age, who have little experience. The third group consists of specialists between 35 and 45 years, who are very productive and have extensive experience in the industry. Unfortunately, the third group is the smallest within KPSP and on the market as such. The main reason for this phenomenon was the difficult situation in Kazakhstan in the 1990s. A similar situation can be seen in Russia. This is why KPSP began working with Fluor and began collaborating with the Karaganda Technical Institute to train our specialists. We opened a special class, where our students can practice and increase their level of knowledge. Those students who perform best have a chance to eventually come work at KPSP.

What are your plans for the next five years?

We want to build a solid EPC company to follow industry trends. We want to become a mobile and highly qualified organization using innovative technologies, so that we can react to our clients' requests in a fast and flexible fashion. We want our clients to understand that KPSP can solve any tasks and overcome any presented challenge. What is also important is that we want for our company to be a good and interesting place for our employees to work. •

●●● How important is the mining industry for KPSP?

Mining companies are our main clients, and include Kazakhmys, ArcelorMittal Temirtau and other important players. However, in recent years prices for metals have significantly decreased, and consequently there was a decrease in investments in the mining sector. For this reason, regardless of the fact that we are based in Karaganda in the heart of Kazakhstan's mining industry, we are forced to explore other sectors, and now we are also involved in the construction process of a port in western Kazakhstan.

Could you give us an example of a project you worked on recently?

We are working on developing a project for a tailings storage facility for ArcelorMittal at Vostochnaya facility close to Abay city. We also designed an oxygen station for LindeGas at ArcelorMittal. We work with



Andrey Kharlashin

Director of Geology
RJC GROUP

In 2015, RJC significantly increased its presence in Kazakhstan. What are your plans for further development?

Indeed, in 2015 RJC significantly increased its presence in Kazakhstan by strengthening the local management team and actively participating in various marketing activities. We are strongly focused also on improving quality control, which allowed us to win new contracts at the Dolinnoye and Bakarchyk deposits. RJC participates in many regional exhibitions, which allows us to broaden its network of potential clients. Moreover, we are improving existing technology. We offer solutions for managing geological exploration and create data banks for geological data, which are very popular among our clients.

Can you introduce the AGR system and tell us about the advantages it offers to mining companies?

AGR 3.0 system is designed to assist mining projects in their different stages, during the exploration as well as drilling phases. AGR software consists of several programs, including work with templates, documentation, and data management. The design of this software allows the user to scale data management systems easily, and add new projects, deposits, and mining companies where necessary; thus, the client has a high-tech base for automation and organization of geological data. Application of AGR 3.0 system is a secure method to increase the effectiveness of mining operations through automatization of collections and processing of primary geological data, as well as unification of large volumes of data. Moreover, accessibility to his data becomes easier through the Internet. It also allows information to flow at a faster pace from site to project directors, which of course increases the speed at which executive decisions are made. Finally, our technology allows us to avoid mistakes related to human factors and simplifies operations at deposits where people work in different languages. AGR 3.0 software can be used to its full potential, from documentation of geological exploration data to data management. Today, six companies are using this system.

What clients are using the AGR system in Kazakhstan?

Our software AGR 3.0 is used by corporations like Kazzinc, Kazakhmys, and at the Raigorodok deposit. Moreover, our system

is used at Polymetal's deposits in Russia and Kazakhstan. This system has been implemented at 20 mines in Kazakhstan. Also, our latest developments have attracted the attention of state organizations in Kazakhstan, such as Kazgeoinform.

What companies is RJC cooperating with?

We work with many companies in Kazakhstan and take part in different tenders. Mainly, we work with geological exploration companies, service companies, drilling companies, and laboratories. RJC worked with TOO Archev, TOO Corporation Vostokpromgeo, TerraKad, Labwork Mining and others. We are interested in collaboration with private and state companies and are taking the necessary steps in that direction. We are currently in discussions with Kazgeoinform, a department of the Committee for Subsoil and Geology of the Ministry of Investment and Development.

What are the key challenges that the mining industry in Kazakhstan is facing?

The mining industry in Kazakhstan faces similar problems as in Russia, including the lack of a reliable state mineral base and qualified talent, as well as unwillingness among mining companies to use new technology. Companies need to invest more into modernization and optimization of processes to improve the quality of mining operations. However, this is a difficult process in an unstable economy. Kazakhstan is also quite slow in applying new technology when compared to more developed countries. This is related to the high cost of such solutions or to the fact that there are not enough qualified people to use these technologies. The lack of qualified specialists is more pronounced in Kazakhstan than in other countries.

What are your future plans in Kazakhstan?

We hope the mining industry in Russia and Kazakhstan will begin to recover from the current crisis. In the coming year, we are planning to strengthen our presence in Russia, Kazakhstan, and other countries. We will keep on improving our AGR system. One of our most ambitious projects is the acceptance of our work standards as national standards of primary geological documentation in Russia and Kazakhstan, as well as the creation of a national bank of geological data. •



Julia Yugay

Country Lead
ORICA KAZAKHSTAN

Can you please give us a brief introduction to Orica and tell us about the reasons behind the decision to enter the Kazakh market?

Orica Kazakhstan was established in 2000. It was registered in Almaty first in order to apply for all legal permissions and get all approvals for its further activities. Later on, in 2002 a branch of Orica-Kazakhstan was created in Ust-Kamenogorsk city, where the construction of the plant was started later the same year. In 2012 Orica purchased Minova, which included its branch in Kazakhstan. Minova produces anchors and supporting goods for underground mines, supplying to Kazakhmys Corporation and other underground mines in Kazakhstan. We saw an opportunity in the Kazakhstan market because of the growth of mining companies operating in the country. However, at the time, there were also some concerns with the level of safety in the local industry. We believed that our high standards

of safety, good-quality explosives and highly-trained personnel could bring real value to the local market.

How important is Kazakhstan to Orica on a global scale and can you give us an example of a recent large project you have completed here?

In comparison with Australia, the Americas and some others countries in Europe and Africa, Orica in Kazakhstan is still relatively small. This is not because demand is low, but rather because the local mining sector still tends to favor price over quality and performance. Miners still compare kilogram (kg)-to-kg and unit-to-unit prices, but not taking the picture of costs and performance as a whole. However, Orica can deliver a high value to local customers through our products that reduce the costs for charging, drilling, excavating, etc. Orica delivers value by improving safety, delivering cost savings, and enhanced blasting techniques.

Orica is focused on moving from being a supplier of choice to a true partner with our customers, delivering a range of services that improve our customers' overall performance in blasting and deliver optimization and safety. We are currently working with AltynAlmas at the Pustinnoe deposit, where we provide full range of services, including drilling and blasting. In this case the customer does not have to think about permits, magazines, routes for delivery of explosives; the mine gets the whole package and pay for the cubic meter of blasted rock. Under similar conditions we will soon start working with Kaz Minerals.

Orica is the global leader in commercial explosives and blasting systems and research and development (R&D) is crucial to your company. Can you give us an example of a new technology that has been introduced to Kazakhstan?

At Orica, we are committed to continually investing in R&D and constantly looking for new ways to enhance our customers' businesses. A couple of recent examples of technologies newly introduced to Kazakhstan include electronic detonators, which help to form a blast in a completely different manner, equipment for underground charging and blasting; and underground bulk explosives Subtek, which helps to charge up-holes and achieve high results in effectiveness and safety.

Orica has manufacturing facilities around the world in addition to integrated global and local supply chains. What manufacturing activities do you have in Kazakhstan?

Orica has two manufacturing plants in Kazakhstan. The largest one is located in Ust-Kamenogorsk, Kazakhstan. It produces cartridge explosives, non-electric detonators and emulsion matrix for bulk explosives. It was commissioned in 2002. The second one is located in Ekibastuz city. It was commissioned in 2012 based on the demand in that area. It produces emulsion matrix, which is a component for bulk explosives.

Orica is a member of the Dow Jones Sustainability Index, the Australian SAM Sustainability Index and the FTSE4Good Index. Can you tell us how your approach to sustainability has been applied in Kazakhstan?

Orica has very high SHEC standards all over the world, including in Kazakhstan. This is not related only to our own plants and service centers, but also applies to how we work at customer sites, so our customers can be confident that our people on their sites are fully compliant with the highest levels of safety and environmental protection. The use of our explosives is also environmentally safe, as well as safe for people who use it. The use of emulsion in comparison with TNT-based explosives and others significantly improves the ventilation process, which improves productivity. We also have more advanced technologies that can reduce environmental impacts, such as electronic detonators, which enable reduced vibration.

What are your plans for the next five years in Kazakhstan?

Our plans for the next five years are to move from being a supplier to a partner of choice among our existing and new customers; introduce new technologies to Kazakhstan, so that we are not behind other countries; train and provide support to mining companies' personnel in how to improve safety, fragmentation, and the optimization of their blasting; and prove to our existing customers that we are a reliable partner in any mining conditions that they may face. •

Arman Anapiyaev & Ablaykhan Shapenov

AAA: Business Development Manager
 AS: Marketing Specialist
MICROMINE

●●● Can you give a brief introduction to MICROMINE and the rationale behind entering the Kazakhstan market?

AA: MICROMINE was established in 1986 in Perth, Western Australia and is a global company with 20 offices, one of which is in Kazakhstan, which opened in 2008. It is the hub for doing business in Central Asia covering Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan. The rationale behind MICROMINE entering Kazakhstan is the region's exceptional resource potential; prior to 2008, distributors carried out work

in Central Asia. There are no local companies in Kazakhstan selling software packages similar to MICROMINE; competition is international.

How important is Kazakhstan to MICROMINE on a global level?

AA: MICROMINE works with more than 12,000 companies globally. Especially in Kazakhstan, all mining companies use MICROMINE's software solutions in their production process, for example, subsoil and service companies, and companies providing local consulting at international standards.

Does MICROMINE have any expansion plans for Central Asia?

AA: MICROMINE has two types of business: providing and producing solutions for mining companies; and consulting by international standards. In addition to MICROMINE exploration and mine design software, it also has Geobank, a geological data base management system, and Pitram for mining solutions. With input from clients, MICROMINE's solutions are continuously being updated.

tion according to Kazakh standards. Today, GMP represents a group of companies and includes GMP Russia, GMP Canada and GMP's head office in Kazakhstan. In 2014 we opened offices in Canada and Russia. Also in 2014 we created GeoMineSoft, as a separate division within the company, which develops mining software.

On what project can we see GMP's software in use?

In 2015 we began working with Polymetal, which is working on Bakyrchik, the second largest gold deposit in Kazakhstan. Atlyntau Kokshetau is another client where we are integrating our own product, Mine-Vision, for database management system. We also began working with Kazzinc. MineVision is a database management system that offers centralized storage and management of data.

What mining software is the most in demand in Kazakhstan?

Datamine software is very popular in Kazakhstan and Russia. In some aspects, this software is less user-friendly, but the mining and engineering parts remain the best. However, in terms of resource estimation

Which of your service offerings are most commonly used in Kazakhstan?

AA: MICROMINE exploration and mine design software is the majority of service offerings used in Kazakhstan; the most diverse software package encompassing ten models which would be of interest to production companies and geologists.

Where will we find MICROMINE in Kazakhstan's mining market in five years?

AS: Within the next five years, MICROMINE's strategy for Central Asia will be to extend its service offering to other countries. MICROMINE has made tentative approaches to Iran via mining exhibitions where it received a positive response to its service offerings.

Do you have a final message about MICROMINE?

AS: Another important aspect of MICROMINE's Kazakhstan office is that it has a development department and a part of our product is developed here in Almaty. The Kazakhstan office employs local developers taking part in the development of software recognized all over the world. •

Datamine is not flexible enough, and Micromine is far better.

About two years ago, Leapfrog software was introduced, but it is too early to judge its popularity. Around the same time a new Chinese product 3DMine was introduced, which is the cheapest on the market and could develop a niche.

Often, price is the most important factor that affects choice of software. Currently, the most expensive product is Minesight, but because of its high price there is only one license currently in use in Kazakhstan. Datamine and Surpac are much cheaper, while Micromine is even lower on the price range but is less functional in terms of modeling mining production.

What is GMP'S development strategy for the next five years?

Our main task will be to expand the geography of our projects. We would like to increase the number of our projects in Canada and Russia. GMP will also continue to develop new software such as GeoSearch and MineVision. These programs will be translated into English, and we will be able to use them outside of Kazakhstan. •



AB

Marina Kochetova, Alan Bradford

MK: Managing Director, Leica Geosystems Kazakhstan
 AB: Regional Manager Business Development Central Asia

LEICA GEOSYSTEMS AND HEXAGON MINING DIVISION

●●● Can you introduce Leica Geosystems on a global level and tell us how much interaction the company has with the mining industry?

AB: Leica Geosystems mining is part of the recently formed Hexagon Mining Division a subset of the Hexagon Group. Hexagon is a €3 billion-plus organization that focuses on measurement technologies of all types and part of that concept is the mining division. The Hexagon Group is founded from a number of different companies and the organization has a prolific capability due to the individual and combined strength of these premium companies. Hexagon integrates these capabilities with the vision of end to end capability. Thus, within mining Hexagon wants and has the capability to be involved in projects from exploration to reclamation, a unique situation that none of our competitors come close to.

Leica Geosystems Mining is an integral part of the larger Hexagon Mining Division and is known for its strong involvement in the management of combined fleet systems. The Leica/Jigsaw-based Hexagon Fleet Management System (FMS) is arguably the best system in the world, it is very robust and capable of allowing companies to squeeze the best out of their operations. Then together with our mining planning capability based on the MineSight planning platform and our collision avoidance system based on the SafeMine System we have the combined capability that brings proven capabilities and technologies into either standalone applications or an integrated system.

Our vision is to be the first global provider of mining solutions connecting design, planning, measurement and visualization information to make smarter, faster decisions, while making the mine site more efficient and safer place to work. To achieve this we are offering the most comprehensive range of configurable technologies to monitor the entire mining value chain in the market.

Why did you decide to enter Kazakhstan and how has this market evolved over the last 20 years?

MK: Leica has been in Kazakhstan for almost 20 years. The business has been very successful and Leica has kept the number one position in the Kazakhstan market for the level of service and quality of products that we provide. The reason for entering the Kazakh market was to grow the business in this strategically important region. Currently Leica is the only company covering the whole cycle of all mining processes. Leica is in very close contact with our customers and the company is also taking care of its own people by running several development projects. Leica also recently introduced innovative and revolutionary new solutions that will optimize and improve several processes in mines. Leica expects these new solutions to improve our customers' capability through market feedback the company can only improve more.

Are Kazakh companies receptive to the new technologies that Leica/Hexagon have to offer?

AB: In this region we are seeing a generation change happening with companies not being satisfied older technologies and or with the status quo. These companies are led by the strong leaders and manag-

ers who realize the market and industry is and has changed, and also in a cost effective manner, realize a strategic alliance with Hexagon provides access to current and emerging technologies. This is what Hexagon/Leica offer. A true partnership, the world's best technologies, strong and skilled local support and commercial flexibility that allows all Kazakh companies the opportunity to access Hexagon's research and proven capabilities.

What are Leica's plans for the next five years in Kazakhstan?

AB: Hexagon/Leica have an amazing capability in Kazakhstan and the company's philosophy is to build on our strong capabilities and relationships for mutual success. The local Leica office already has established and proven strong relationships with many mining customers, the brand and team are highly regarded for their technical capability and support, and the extension into other technologies, based on local demand is a natural growth pattern. This situation is a unique foundation that many of our competitors fail to match.

Over the next five years, Hexagon/Leica wants to contribute to the technological advancement of mining in Kazakhstan. We are prepared to invest and establish an advanced local technology hub, training capabilities and exchange technical knowledge as part of investment back into the partnership process. Leica will also set up a specialist workshop for the company's hardware to train and employ people, which will also make it more cost effective for the mines in the region to gain access to new technologies.

MK: Leica wants to provide more complex solutions to our customers as to simplify their work. Kazakhstan is an emerging market and thus less prepared for these complex solutions than other mature markets. Leica's focus is now to develop our organization as to grow the Kazakh market to understand the value of the software that we can provide. •

Dr. Georgiy Freiman



AAA: Chairman, Board of Directors
GEOMINEPROJECT (GMP)

●●● Could you introduce us to GMP and its current projects?

GMP was created in 2009. Our employees are specialists in geology and mining with a lot of experience in the field as well as consulting. GMP focuses on developing innovative methodologies for resource estimation, promotion of software products among mining companies, and development of our own software for resource estimation



A ROUGH ROAD TO DIVERSIFICATION: KAZAKHSTAN'S CHEMICAL INDUSTRY



“Today, the volumes of production of chemicals are fairly low in Kazakhstan. However, we see that the government is actively working on increasing production levels and investing in the sector.”

- Maxat Bekov,
Executive Director,
Chemie & Technology

KAZAKHSTAN INVESTS IN ITS CHEMICAL SECTOR

A sense of optimism drives Kazakhstan's nascent chemical industry, identified by the state as a strategic growth sector, but major challenges remain.

Known for its colossal oil and gas reserves and abundant hard rock minerals, Kazakhstan is not typically associated with the production of chemicals. Beginning in 2014, however, the government has been supporting the sector as part of its efforts to diversify the country's economy. An industrialization program drafted in 2014 by the Ministry of Investment and Development identified chemicals as a key sector for development, and from 2015 to 2019, the government plans to invest public funds to support local chemical production. "Today, the volumes of production of chemicals are fairly low in Kazakhstan. However, we see that the government is actively working on increasing production levels and investing in the sector," said Maxat Bekov, executive director of Almaty-based chemical distributor Chemie & Technology. In the first half of 2014, Kazakhstan's imports of chemical products amounted to nearly \$1.1 billion, compared to exports of \$470 million. During this period, the most exported products included yellow phosphate, chromium oxide and hydroxide, phosphate fertilizers and other agrochemicals. The majority of production is limited to base chemicals manufactured by three state-owned refiners in Pavlodar, Atyrau and Shymkent. Other chemical producers include the Aktobe plant producing chromium compounds, the Ulba metallurgical plant, Kaustik, Orica Kazakhstan, the Termirtau Electrometallurgical Complex, Irtysh Rare Earths Co., KazAzot, KazPhosphate, and Nephtechim. Major chemical factories are strategically located to provide easy access to the CIS countries, China, and, with continuously developing infrastructure, the Middle East. While Kazakhstan's rich resource base and proximity to large export markets serve as advantages for becoming a major value-added chemical producer, several problems arrest the industry's growth. The most often cited challenge is outdated equipment. "There are several obstacles that impede the growth of the sector. First of all, this is obsolete equipment that has been in use since the Soviet

times and does not allow companies to implement effective production strategies," said Bekov. More than 80% of the country's fixed assets for chemical production are worn out. In order to counteract this weakness, the government is assisting in the modernization of major chemical plants as well as state-owned refineries in Atyrau, Shymkent, and Pavlodar to increase chemical production there. Projected investment in refinery modernization will total 720.9 billion Kazakhstani Tenge by the end of 2019. Related to the problem of outdated equipment is the lack of qualified human resources to operate new equipment. This is due to the emigration of trained professionals from the country over recent decades, as well as a gap in the education of specialists during the 1990s. Yet many of the companies that are established in Kazakhstan are transferring their knowledge to local specialists and students. "We constantly support local universities, schools and charity funds. All our social projects are aimed at helping either the younger generation or elder people to learn more about chemistry, science, improve people's lives, and develop their skills and knowledge," said country manager of Dow Kazakhstan, Igo Girnyk. Forming partnerships with international companies such as Dow and BASF can also help address the shortage of talent. "BASF invests in its human resources. The level of education is good here, but many Kazakh students do not have the opportunity to travel abroad. BASF is working with key decision makers to help link BASF to Kazakhstan and promote technology transfer from Germany," said managing director and head of country cluster Central Asia at BASF, Xavier Verfaillie. Bringing foreign companies to Kazakhstan is a priority and the government is holding negotiations with Lanxess, GreenDay, IndussGroup, and others to realize some of the pending projects slated for the chemical industry.



Kazakhstan is continuing to place its bets on petrochemicals as the new driver of its economy. Sooner or later we will have unlimited reserves of feedstock.

*- Saduokhas Meraliyev,
Chairman of the Board,
Kazakhstan Petrochemical Industries (KPI)*

The third and most recognized problem is the lack of investment. The government is hoping to bridge this gap in financing through the special economic zone (SEZ) in southern Kazakhstan, Chemical Park Taraz. The park will offer its members ready-made infrastructure, tax breaks and hiring assistance. Two additional zones designated for chemical production are also under construction in Atyrau and Pavlodar. The former will capitalize on proximate sources of feedstock from the Kashagan oil field to produce petrochemicals for export. "Kazakhstan is continuing to place its bets on petrochemicals as the new driver of its economy. Sooner or later we will have unlimited reserves of feedstock, and after 10 or 15 years, KPI and the SEZ will be booming," said chairman of the board at Kazakhstan Petrochemical Industries (KPI), Saduokhas Meraliyev. In line with its goal to diversify its national economy, Kazakhstan's government is keen on developing a range of industries including agriculture, mining, and construction, all of which require intensive use of chemical products. Hydrogen peroxide, for example, is heavily used by the mining industry. "Kazakhstan imported 20,000 mt of hydrogen peroxide last year, up by 10% from 2013. This implies strong demand and consequently huge potential for Evonik. We also produce cyanide, which is used by 99% of local gold mining companies in their processes," said head of the representative office Kazakhstan at Evonik, Serikzhan Sarbekov. In a similar vein, German industrial gas manufacturer Linde Gas came to Kazakhstan because of mining major Arcelor Mittal. "Linde Gas entered the Kazakh market in 2013 with a big project – an air separation unit (ASU) for Arcelor Mittal's plant in Termirtau. The new ASU is huge, with a capacity of 62,000 normal cubic meters per hour. Having such a big plant allows us to serve the Kazakh

market and export our products to Russia," said finance manager of Linde Gas Kazakhstan, Alexandra Tuzhilina. Other international chemical companies, such as BASF, recognize the sector's potential, and are looking to capitalize on the country's strong mining industry in the near future. "Mining will be a new challenge for BASF in 2016. However, we are already in convenient contact with Kaz Minerals for their main projects, Bozshakol and Aktogay. Frankly speaking, we are optimistic about the future of the mining sector in Kazakhstan, not withstanding low prices for commodities," said Verfaillie. Other opportunities may arise as a result of the Kazakh state program of accelerated industrial and innovative development, which calls for the reconstruction of various outdated plants as well as general infrastructure development. These upcoming infrastructure projects will also stimulate domestic consumption of chemicals. "As part of [the second phase of the industrial development program] some public funds will be put towards the continued construction of the shipyard near Aktau. [Italian company] Eni will begin construction of the shipyard, which will allow Evonik the opportunity to market its paints and coatings of marine containers and ships," said Sarbekov. Kazakhstan is home to a unique mineral resource base suitable for production of any chemical, boasts low labor costs, and a strategic geographical position to serve international markets. Both the government and the industry are working hard to revitalize chemical production, but without the entrance of international giants into the market, this process will take more time than expected. It is now time for both local and international players to recognize that the fruits of Kazakhstan's industrial wealth have yet to be harvested. •



Kazakhstan imported 20,000 tons of hydrogen peroxide last year, up by 10% from 2013. This implies strong demand and consequently huge potential.

*- Serikzhan Sarbekov,
Head, Representative Office, Kazakhstan,
Evonik Chimia*





Saduokhas Meraliyev

Chairman of the Board
**KAZAKHSTAN
PETROCHEMICAL INDUSTRIES
(KPI) INC.**

●●● **Please introduce us to KPI's development in Kazakhstan's National Industrial Technopark.**

KPI is a small company located approximately 45 kilometers (km) north of the city of Atyrau, within a special economic zone. The company's main goal is to build a polypropylene plant with a capacity of 500,000 metric tons (mt) of polypropylene production per year. Propane feedstock for production will be sourced from different oil fields such as Tengiz and delivered to our site by rail cars. KPI will process propane to obtain propylene and subsequently via polymerization, produce 500,000 mt of polypropylene of various types. Two technology licenses have been acquired, and feasibility studies are complete. Sinopec engineering group conducted front-end engineering, which has been verified. KPI has already conducted reconstruction work on Karabatan rail station for the company's future needs. Railroads to our site are al-

ready completed, along with a rail station outside. We have constructed a temporary water pipeline for construction needs, identified all long-lead items and completed all site preparation work. The project is ready to move into an active phase. KPI has a contract with Tengizchevroil for feedstock supply, as well as various contracts for utility supply. We are currently selecting EPC contractors and the plant will begin operations in about 42 months.

●●● **How developed is the petrochemical cluster, or National Industrial Technopark?**

KPI is just one participant within the petrochemical part. KLPE is the largest member, and its expected production is significantly greater than that of KPI, at approximately 1 million mt of various types of polyethylene per year. A second plant that is already in operation is Polymer Production, producing merchandise such as packing materials. A third plant is in early stages. KPI is at approximately the same stage as KLPE.

●●● **Will KPI's plant meet international standards in terms of safety and quality?**

The plant will certainly meet all international and local standards. We are looking to build a plant with mechanical availability of 97%. To achieve this target we have to be safe and stable. KPI has purchased all of its technology from leading vendors in the United States. We have visited several plants across the world including in the United States and China.

●●● **Which export markets will KPI primarily target?**

The main share of KPI's production will be exported to Europe. Kazakhstan will consume about 50,000 mt of polypropylene, or 10% of our total production. We will try to sell to China as well, but given Kazakhstan's large territory, logistics to China are extremely costly. Another problem is that western China is not heavily populated, meaning we would have to ship to southeast China, which is 5,000 km further and would increase transportation costs even more.

●●● **What are some other opportunities for the development of the petrochemical cluster?**

There are many ongoing projects in our country, and Kazakhstan is full of opportunities and ideas in the context of petrochemical production. Last week, Atyrau

refinery began producing polystyrene, a raw material for terephthalic acid. Once KLPE begins producing ethylene, which can be combined with polystyrene, a final product polyethylene terephthalate can be produced, which is very demanded by the market.

Secondly, Atyrau refinery started to produce 130,000 mt of benzene. Benzene is made into ethyl benzene, which is then processed into styrene and polystyrene. Years ago, there was a petrochemical plant in Aktau producing ethyl benzene and later styrene and polystyrene. Similarly in Atyrau there used to be a polypropylene plant with a small capacity of 40,000 mt. Frankly we have experience in Kazakhstan in this field.

●●● **Are you optimistic about the growth of the sector in the next three to five years? Where do you hope KPI will be in this timeframe?**

In four years, KPI should be a full-fledged production company. If this is the case there will be only one problem: product placement. If KPI successfully launches operations, with high safety standards and appropriate quality, this will be the only challenge left to overcome. Russia had produced 700,000 mt of polypropylene and in addition two years ago launched the same technologies in Tobolsk with annual capacity of 500,000 mt. Six to eight years ago, there were no difficulties with product placement. Now problems have arisen and are getting worse. But Kazakhstan is continuing to place its bets on petrochemicals as the new driver of our economy. When Kashagan operations begin, KPI will have been able to source feedstock from a distance of only 15 km, given Kashagan's proximity to our site. Currently they plan to produce electricity by burning liquid, but this is quite a luxury. Sooner or later, we will have unlimited reserves of feedstock, and, after 10 years or 15 years, KPI and the special economic zone will be booming. ●

Olzhas Zhumanov

Managing Director
CORROCOAT CASPIAN

●●● **The subsidiary Corrocoat Caspian was established in Kazakhstan in 2012. Please begin by introducing us to Corrocoat's presence here.**

Corrocoat itself is a large international company based in Leeds in the United Kingdom (UK). It is one of the leading engineering and manufacturing companies in coating. Corrocoat focuses on industrial coating, which protects industrial equipment, tanks, reservoirs and pipelines. In 2012, Corrocoat entered the Kazakh market through a joint venture. The company was launched at the end of 2013, but due to the seasonal nature of the business caused by harsh climatic conditions in Kazakhstan, operations began in the summer of 2014.

Corrocoat Caspian manufactures 16 of the company's range of 70 coatings. Every product is locally certified, demonstrating high local content. (This refers to the percentage of goods, works and services of Kazakhstan origin within the overall cost

structure.) Local content allows us certain preferences when we go for tenders with national and oil companies, and currently our products boast an impressive 70% to 77% of local content. Corrocoat Caspian is the only high-tech coatings manufacturer in Kazakhstan. We compete with international companies such as PPG, Hempel, 3M and Jotun. Our business is divided into manufacture and supply of materials, and application. We provide application and repair services for a wide range of companies in different industries, such as oil and gas, mining, chemicals, food and beverage, power, piping and marine. We supply materials to two types of companies: end users with their own application units (big oil and pipe companies) and service companies who work in application and have been dealing with imported materials of our competitors. However, our product is sophisticated, and we invest significantly in research and development. Globally, our main strength is product formula. While the majority of our coatings are vinyl Ester resins, some are polyester, acrylic and epoxy-based materials. All have glass flake fillings, of which Corrocoat is one of the leading manufacturers in the world. These protect water molecules from getting to the surface, prolonging service life of equipment and protecting against corrosion. Equipment coated with our product can remain operational for over 25 years.

●●● **Corrocoat Caspian is unique in that it locally produces innovative corrosion-resistant coatings in Kazakhstan. Why did Corrocoat set up production facilities here?**

Initially, Corrocoat was interested in launching solely an application business in Kazakhstan. However, because of the good market potential in Kazakhstan, we made a decision to establish a joint venture to create more than just a service facility. We imported the latest technology and set up a manufacturing facility. While the company is present in more than 30 countries, most are application facilities, and materials are delivered from the UK. Today, the only countries where Corrocoat manufacturing takes place are the UK, United States, India and Kazakhstan. Corrocoat Caspian has a license for almost all former Soviet Union countries except for Belarus. We hope to begin business with Russian companies next year.

●●● **Kazakhstan's Ministry of Investment and Development has identified chemicals as a**

strategic growth sector and plans to invest 80 billion tenge to support it. How effective have the government's efforts been in supporting the chemical industry?

The government has identified the chemical industry as a priority for development and created a free economic zone in Taraz. However, companies are not permitted to purchase land within these zones. They are government-owned, meaning that terms need to be renegotiated after a given number of years. There are also different types of government support programs, and we are trying to take advantage of some of them. Corrocoat Caspian is part of the government's industrialization road map for example, which allows us financing preferences.

However, local manufacturers require other types of support. One of the main concerns among small and medium-sized enterprises (SMEs) is import substitution. We are requesting that preference be given to local manufacturers to be granted contracts by national companies. As a local manufacturer I am able to secure contracts from international companies that recognize the Corrocoat name and quality. However, state companies prefer imports and do not grant local SMEs contracts. Corruption is rampant within these institutions, where there is a prevalence of informal schemes that are hard to change. With the help of NGOs such as the National Chamber of Commerce, we are slowly trying to reform the overarching mentality. Government officials as well as state-owned Samruk-Kazyna management are working to resolve them. Given the current crisis, the government needs to bolster local industry.

●●● **Where do you see Corrocoat Caspian in three years?**

Our target is to become the number one supplier of anti-corrosion coating materials in Kazakhstan in three years. To achieve this firstly we are engaging the government, Samruk-Kazyna and the National Chamber of Commerce to provide us with support as a local manufacturer. Secondly, we are working on a case-by-case basis with all of our clients. Corrocoat Caspian has passed pre-qualification tests for all major international companies. Now it is matter of participating in tenders and being competitive. ●

Serikzhan Sarbekov

Head, Representative Office, Kazakhstan
EVONIK CHIMIA



●●● **What led Evonik to establish a representative office in Almaty, given its strong presence and production facilities in Russia?**

Evonik constantly seeks to diversify and expand globally. Our Kazakhstan office belongs to the company's eastern European division, and is officially part of Evonik Russia, known as Evonik Chimia. The office here in Almaty was established in 2008 and is responsible for the whole of Central Asia. Until 2012, we primarily focused on agriculture, specifically in food additives, which comprised more than 90% of our business in the region. Since 2013, the main objective has been to diversify our activity. At present, we are involved in additional industries: agriculture, mining, oil and gas, paints and coatings, road construction and general construction. In Uzbekistan, we are also involved in the textile industry.

To what extent is Evonik involved in the mining industry in Kazakhstan?

Evonik has a portfolio of mining products, the main one being hydrogen peroxide. Kazakhstan imported 20,000 metric tons of hydrogen peroxide last year, up by 10% from 2013. This implies strong demand and consequently huge potential for Evonik. We also produce cyanide, which is used by 99% of local gold mining companies in their processes. Evonik is a partner of the Association for Mining and Metallurgical Enterprises in Kazakhstan.

What trends are driving Evonik's business in Kazakhstan?

The Kazakh government has been effective in promoting quite a number of national programs. For example, we are currently in the second stage of the industrial development program of Kazakhstan. As part of this program, some public funds will be put towards the continued construction of the shipyard near Aktau. One year ago an agreement was signed between Italian company Eni and KazMunayGas, and the former will begin construction of the shipyard, which will allow Evonik the opportunity to market its paints and coatings of marine containers and ships. Kazakhstan has a significant fleet of 300,000 tons. Secondly, the upcoming Expo 2017 is interesting for us in terms of construction. Polymers, paints and coatings are to be used in this industry, spurring demand for our products. Furthermore, the development of the chemical park in Taraz is also promising for Evonik. The chemical industry in Kazakhstan has a lot of potential, especially given that the state has funds to develop it.

What are some challenges that will prevent Kazakhstan's chemical industry from growing?

Firstly, Kazakhstan has a lack of specialists and obsolete equipment. Many local specialists migrated to other countries, and dur-

ing the 1990s there was a gap in educating specialists in industries such as healthcare and mining, for example. Now, there are two main groups of specialists in the country: an older generation that has significant experience but no exposure to innovation, and a new generation with no experience but brilliant knowledge of technologies.

Secondly, the geographical location of the country drives transportation costs up. Kazakhstan is located beyond all crossroads, and is landlocked, making it quite difficult to reach logistically. Additionally, the government is struggling with infrastructure development.

Thirdly, local mentality impedes transparency. For instance, it is not easy to cooperate with ministries and agencies, as there is a tendency to slow down processes in order to secure some personal benefit: these issues with compliance are absolutely unacceptable. In terms of transparency, there is more clarity in terms of procedures. A few years ago, a law was passed mandating all tenders to be held online in order to increase transparency. Quite a number of amendments have also been accepted to the national law on state purchases, which also helps companies. In general there is a positive trend, and Kazakhstan is more progressive than other Central Asian states.

Lastly, Kazakhstan is huge country with a relatively limited market in terms of population. Major producers look to the Russian market, with a population of 140 million, before looking to Kazakhstan, with a population of only 17 million. Thus, all investors view the Russian market as having the most potential. As the result of the first phase of the innovative industrial development program, from 2010 to 2015, the government has declared that more than 80% of projects were successful, attracting significant investment, knowledge and technologies. Personally I doubt the validity of this figure, which should be much less. At the end of the day there is low market demand and low export capability, along with time needed to grow the pool of local specialists.

Where do you see Evonik in the next three to five years?

Evonik will continue to be a strong player in mining, agriculture, paints and coatings, and construction. We have an expansive product line for oil and gas extraction as

well as polymers for oil and gas pipelines. We are approaching the Ministry of Investments and Development in the context of their development program, given the plan for cross-country specification, diversification and investment. We are also negotiating with another player to become the second alternative supplier of specialty

chemicals to national companies. Evonik is interested in pursuing opportunities Turkmenistan, and the textile market in Uzbekistan, and has also recently become a part of the German Economy's Union in Central Asia, which we plan to use as another channel to approach the chemical industry in the region. ●

Один звонок – множество специалистов.
We love your problems.

Для любой проблемы, связанной с поверхностями, у нас есть решение: креативность наших сотрудников. Наши специалисты тесно сотрудничают с клиентами. Это экономит время и даёт дополнительные стимулы. Результат: необычные решения для необычного применения.

Эвоник. Создавая новое.

www.evonik.com

EVONIK
INDUSTRIES



Maxat Bekov

Executive Director
CHEMIE & TECHNOLOGY

However, we do see that the government is actively working on increasing production levels and investment in the sector. There are several obstacles that impede the growth of the sector. First of all, this is obsolete equipment, which has been in use since the Soviet times, and which does not allow companies to implement effective production strategies. Fortunately, many companies have already started to modernize their equipment. The second problem is finding the right staff. It is very difficult to find qualified staff in the chemical sector, therefore training is of key importance for our industry. Our company invests a lot in different training for our employees.

How important is the mining industry for Chemie & Technology?

The mining industry is one of the most important sectors for Chemie & Technology. Currently, our mining clients represent 35% of our total volume of orders. Our clients are companies such as Kazakhmys and Kaz Minerals. We also closely work with uranium mining companies. Our products are used at all stages of mining from extraction to beneficiation and mineral processing. Mainly, we offer mining companies acids and drill fluids. Also, we offer our clients technical solutions, which allow them to save up to 30% during drilling process. Thus, we do not just offer chemicals to our clients, but allow them to make use of our complex solutions.

Last year, Chemie & Technology took part in the Mining Week exhibition in Karaganda. What products did you exhibit there?

Chemie & Technology is a distributor of a German brand ESCO, and we often exhibit its products at different exhibitions. Also, we showcased a unique cleaning product Glanz. We are the only company in Kazakhstan that has the rights for distribution of this product, which is ideal for removing rust from metal surfaces and is therefore an ideal solution for mining, chemical and oil and gas industries. This product can also be used to clean the insides of pipes and boilers.

What international brands do you represent on the market?

We work a lot with producers from Russia and China. This year we began working with Belarus. We can distribute these prod-

ucts at a very competitive price in Kazakhstan. Apart from distribution of international producers, we also export products from local producers. We export drilling fluids to Kyrgyzstan and Tajikistan.

We pay very close attention to quality when working with our suppliers. This is the main priority for our company, because our clients deserve only the best products of the highest quality. We often receive offers from producers from different countries and we always conduct very extensive research and check their methods of production and test the quality of the final product, and only after we have done all of these steps can we begin to work together. We are also very careful when we choose the product itself; we try to choose innovative products, which are not yet represented on the local market and can be useful for local industry.

Many mineral deposits in Kazakhstan are located in remote areas and are very difficult to access. How does infrastructure or the lack thereof affect your operations?

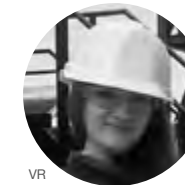
Underdeveloped infrastructure certainly poses several challenges for us, and mainly affects the time of delivery. In turn, this can have a negative effect on operations of the mining companies we work with. We always try to work efficiently, process all orders in record times, and minimize lead times. Because the cost of our products includes delivery costs, we make sure that we deliver the product in a very short time. Besides that, we are also responsible for the quality of the products that we deliver and we do everything to ease our clients' work.

What are your plans for strategic development in the next five years?

Chemie & Technology will continue to develop and expand the geography of its clients. We plan to increase the number of representative offices across the country to be closer to our clients. We will also look into providing more products for the mining and other industries. We hope to increase the number of products that we offer and clients that we serve. •



AT



VR

Alexandra Tuzhilina & Veronica Rozhko

AT: Finance Manager
VR: Sales Specialist
LINDE GAS KAZAKHSTAN LLP

Please introduce us to Linde Gas Kazakhstan. What are some important historical milestones since the company's establishment here in 2009 that have shaped Linde Gas' presence today?

AT: Linde Gas entered the Kazakh market in 2013 with a big project – an air separation unit (ASU) for Arcelor Mittal's plant in Temirtau. New ASU is huge: its capacity is 62,000 normal cubic meters per hour. Having such a big plant allows us to serve the Kazakh market and export our products to Russia. Also we continue to develop our sales offering in Kazakhstan: Linde Gas brings an ultimate quality advantage to the local market by producing high purity gases while having high safety standards.

Linde Gas' products are used in a diverse range of applications, in almost all industries. How important is the chemical industry to your business?

VR: So far Linde Gas Kazakhstan is not present in the local chemical sector. Most of our customers are in the fields of manufacturing, machinery and metallurgy, and we are currently making our entrance in the food sector. Though the chemical industry is not quite developed in Kazakhstan, we observe potential in this area. We are open for interesting projects and we are ready to contribute to the development of the Kazakh chemical sector.

How have you seen demand evolve for Linde Gas' products in Kazakhstan?

AT: Since Linde Gas entered the Kazakh market, it has showed stable growth, which we expect to increase in the future as well. VR: We definitely see future demand in the chemical industry. It is usually challenging to enter a new market, but, thanks to our high-quality products and innovative technologies, we will gain the chemical industry's confidence.

As an international company, are there specific safety regulations that you have to follow which are different from those of local companies?

AT: There is a certainly tremendous difference between international and local standards for everything from transporting liquids, to employees and documentation. Linde Gas Kazakhstan adheres to the same standards that The Linde Group mandates all over the world or the local standards in case the local standard is higher. Small local players on the other hand, are not as committed to follow safety protocols.

What are some challenges that impede Linde Gas' performance here in Kazakhstan?

VR: The big challenge for us is to compete with old ASUs which are still operating in many industries. Many of them have to be replaced by new ones due to safety, technical and economic reasons. Unfortunately we are observing today that many customers are reluctant to make changes in this area, especially due to large investments concerns. In order to accommodate this, Linde offers his customer supply contracts that do not require any investment efforts from their side. Linde builds and operates gas production units on-site, meaning that the production plant is placed at or next to an individual customer or several production plants may be connected to a pipeline

network which serve a number of customers located within the same industrial cluster or geography.

AT: Arcelor Mittal's ASUs were relatively old, which is why Linde was contracted to work on the project. Many companies continue to use air separation units dating back to Soviet times that need to be modernized. Within the chemical sector, however, we do not see a huge interest in committing to these modernization efforts yet. This is largely an issue of mentality, as local customers are not ready for outsourcing; they prefer to operate their own ASUs.

How has the recent devaluation of the tenge affected Linde Gas Kazakhstan's business?

AT: Considering we have export markets as well, we hope that the devaluation will bring good developments. Firstly, our market is now competitive with Russia again, meaning that our local consumers will shift from Russian products to local products. This is beneficial, because some of our customers were buying products from Russia. We also expect more activities from export-oriented local producers.

Who does Linde Gas Kazakhstan compete against here?

VR: We consider ourselves to be the market leader here. Our production unit is modern, efficient, and safe, and we are very competitive. Our main competitors are in Russia, because locals prefer low-priced products. It is much cheaper to deliver products from Russia to western Kazakhstan, than from our plant in Temirtau.

What new markets is Linde looking to enter?

VR: Linde is trying to enter Turkmenistan this year and is looking into Tajikistan and Uzbekistan.

Where do you see Linde Gas Kazakhstan in the next three to five years?

VR: We are going to develop our exports, perhaps to Siberia, because Linde is not present there yet. This would be appropriate geographically, given that the proximity of our plant in Temirtau to Siberia.

AT: Linde is also considering entering the cylinders business. Next year, we plan to launch the specialty gases sales. We have extensive plans for the future. •



Xavier Verfaillie

Managing Director
BASF CENTRAL ASIA

Three years ago, BASF began developing its activities in polyurethanes, gas treatment, and more recently in mining and paints for the decorative and automotive industries. Currently, we are focusing on regional market development and the implementation of a new established country concept, which outlines a strategy to triple the company's turnover in Kazakhstan by 2020. Within the strategy, we are concentrating on four main industries: oil and gas, construction, agriculture, and mining. Geographically, we are targeting and expanding our presence in Astana in order to be alongside our main customers and decision makers. Also, we are developing our presence Atyrau to cover the oil and gas industry. Presently, our company has close contact with the main oil and gas customers in order to expand our fruitful partnership and the sale of our gas treatment products, oil additives, and catalysts.

Given low commodity prices, are you optimistic that the mining sector will drive BASF's growth?

Mining will be a new challenge for BASF in 2016. However, we are already in constant contact with KAZ Minerals and their main projects: Bozshakol and Aktogay. We are optimistic about the future of the mining sector, notwithstanding low prices for commodities, which will change.

BASF is adapted to up and downturns; it is a diversified company with over 220,000 products in its portfolio. In Kazakhstan, our company is positioned as a leader in the construction industry. We also see potential for sales in the agriculture industry, which has room for development.

BASF is one of the few foreign chemical companies that has production facilities in Kazakhstan. Are there enough incentives for foreign companies to begin producing locally?

Investing in Kazakhstan is not easy due to the local conditions and the size of the country. The infrastructure is not developed enough for foreign companies to start operating across the country. There are still a shortage of warehouses, railway stations, and highways, making it difficult to store and deliver goods to customers. To solve this problem, Kazakhstan has to be well connected, after which it will be much easier for foreign companies to locate production here.

BASF, with some other international companies, has regular meetings with the ministries in order to discuss how to improve the investment climate, and they do listen to us. Despite some issues, it is easy to come to Kazakhstan and do business and I strongly believe in the country. Kazakhstan is ranked 137 in the world with regards to ease of doing business. The question is about the government's focus for the next few years. Will it be Europe, Russia or China? It is likely to be China, meaning we may encounter some difficulties. The resonance and acceptance of products from China in Kazakhstan is better than in Europe. This is because imports from Europe are taxed at 12% VAT, while agreements between Kazakhstan and Russia enable delivery at 0% VAT.

What is BASF's double-digit growth strategy in Kazakhstan?

First, BASF invests in its human resources. The level of education is good here, but many Kazakh students do not have the opportunity to travel abroad. BASF is working with the key decision makers to help link BASF to Kazakhstan and promote technology transfer from Germany. Secondly, we work to emphasize the quality and sustainability of our product. With Expo 2017 just around the corner, BASF hopes to be involved with the wind energy.

Are there any specific goals BASF would like to achieve within the next three to five years?

Our main goal is to create brand awareness around BASF's high quality and technology. We do not want to be only known for our involvement in construction. BASF boasts a range of many other products that we would like to make visible in the market. In the next four years, we have many projects in the oil and gas, pipeline, automotive, catalysts, mining and crop-protection industries. If everything goes accordingly, BASF may localize production of paint in Kazakhstan. We have a great deal of plans to be fulfilled within the next few years and despite the devaluation and difficult economic environment, BASF is continuing to experience double-digit growth. Hence, I am confident that we will achieve our 2020 goal. •

Andrey Lymar



General Director
3M KAZAKHSTAN

3M has been present in Kazakhstan for over twenty years. How has the company evolved over this time?

At 3M, we apply science in collaborative ways to improve lives daily. 3M established the first representative office in Kazakhstan in 1995. The Kazakh market is very interesting for us because of the country's mining and oil and gas sectors. It is a promising country with a great deal of op-

portunity. In 2010, 3M opened a subsidiary here, which was very timely and helped us increase our presence in the Kazakh market after the crisis of 2008. We strengthened our mining and marketing teams and prepared good education projects for the mining sector. Today, our staff of 30 focuses on the infrastructure and mining sectors.

Which of 3M's product lines is most represented in Kazakhstan?

3M products and technologies are improving lives all around us. 3M is the respirator that allows miners and welders to breathe easier; the reflective road sign that shines bright even on the darkest of nights, guiding us safely home; the local anesthetics that takes away our pain and discomfort in a dentist's chair.

In Kazakhstan, mining, oil and gas, and infrastructure comprise the majority of 3M's business. Our mining business is successful because of our personal safety solutions such as respirators and helmets. 3M bought Capital Safety and now offers fall protection solutions demanded by both the construction and oil and gas sectors. Within

infrastructure, 3M works mainly in electricity and coating. 3M is currently working on some projects in Pavlodar, offering interesting solution such as ACCR. ACCR conductors in general double the capacity of an electricity line in very short time.

Which segments are most attractive for 3M at present?

While 3M is doing quite well in mining, it is dedicated resources to the oil and gas sector, which has many untapped opportunities. A number of educational programs have also been launched, including a forum for drilling engineers that 3M hosted in Aktau a few months ago and shared our solutions to improve well productivity. We are committed to driving more education programs for our clients and the industry at large.

What are 3M's goals for the next three to five years in Kazakhstan?

3M has ambitious growth targets and many plans to drive presence in Kazakhstan. We are optimistic and project double-digit growth next year. •

Igor Girnyk



Country Manager
DOW KAZAKHSTAN

What was behind the decision to enter the Kazakh market and how important is the country to Dow on a global scale?

Dow has been working with customers in Kazakhstan for the past 17 years. In 2012 we announced the establishment of a representative office in Astana to expand our local presence and level of regional customer support to supplement our global innova-

tions in chemistry. With a local presence in Kazakhstan, we see significant opportunities to match our technologies to specific market needs as Kazakhstan pursues its stated goal of becoming one of the world's top ten oil and gas producers and exporters. We view this as a very exciting time for both Dow and the Kazakhstan oil and gas industry as it takes critical steps toward global leadership, including development of the Kashagan oil and gas field in the Caspian Sea, renovation of its three refineries, and ongoing expansion of its internal and export pipeline network. It is important to mention that we do not frame our business within the oil and gas industry only, as Dow offers various products for practically all industries and applications that exist in Kazakhstan. For example, we work closely with the customers from mining industry, construction and infrastructure, as well as agro business and plastics. Moreover, our presence here in Astana helps us a lot to address customers' needs timely and follow the market trends, so that we can offer the best solutions to our existing and potential customers.

Besides membranes and ion exchange technologies, Dow also provides a powerful portfolio of chemicals and solutions to address mine water management, including tailings and waste treatment, slurry management, dust control, grinding and milling, flotation and hydrometallurgy, focused on maximizing metal recovery utilizing select chemistries and polymer additives.

Can you give us an overview of the kinds of products that you offer to the mining industry in Kazakhstan?

Dow has a long heritage of helping customers extract value from their mining assets, with a broad spectrum of solutions that address production, processing and reclamation challenges. Our offerings include best-in-class ultrafiltration membranes, ion exchange resins, polymers and reagents for metal recovery as well as the full spectrum of water treatment applications and dust control management; mineral processing polymers used to disperse and stabilize high-solids mineral slurries; metal extraction additives to froth flotation and hydrometallurgy in precious or rare metals. •



INTO THE FUTURE



“For a long time, it was not considered prestigious to work in the mining industry, which is why today there is a serious lack of specialists in this sector. The government understands how crucial it is to develop talent across many spheres, mining, processing and services. We are working hard to change the perception of the mining industry in Kazakhstan; we aim to show Kazakhs that working for a mining company is a prestigious career.”

- Nikolay Radostovets,
Chairman,
Association of Mining and Metallurgical Enterprises (AGMP)

THE WAY FORWARD FOR KAZAKHSTAN AND THE GLOBAL MINING INDUSTRY

A number of issues are affecting mining companies, ranging from low commodity prices to mining safety to finding well-trained personnel. How Kazakhstan addresses these will shape the future of its mining industry.

●● Mining Safety

Mining safety is a problematic area for Kazakhstan, which in the past has had a poor record with health and safety in the mining sector, especially coal. As previously mentioned, the mining sector in Kazakhstan is labor-intensive, which increases the chances of workers getting injured. Kazzinc Holdings is one important player that has been strongly committed to improving workers' safety at its facilities. "SafeWork is a corporate program that has been rolled out over the last two years in all of Glencore's assets. Historically, these assets have had their own safety policies, and the SafeWork program is designed to unify safety policy in all aspects of the job, i.e. working at heights, electrical installations, with moving objects, etc. Any work fatalities at Kazzinc's operations will be brought to the attention of its entire workforce to improve training and prevent accidents from occurring again. The observation of the SafeWork policy is continuously monitored by Kazzinc and on-the-job safety training is constant," explained Nick Popovic, chairman of the board of directors of Kazzinc Holdings.

Despite a poor historical record, companies operating in Kazakhstan have come to adopt a zero tolerance approach to worker injuries and fatalities commonly found in Western countries. "In 2012, we identified a five-year program to decrease the number of ac-

cidents at our facilities. Every year, we invest significant amount of money to support this cause. This money is invested into modernizing industrial processes, creating safe conditions, purchasing of the most innovative personal protective gear, etc. Our goal is to improve all the indicators of industrial safety. We strive to achieve zero fatal accidents and reduce work accidents by 40%. We are improving our medical help standards as well," said Bakhtiyar Krykpyshiev, general director of Kazakhmys Corp.

It is not only the local producers that are apprehensive about mining safety, but increasingly foreign companies with various specializations have voiced their concerns. "Arguably, the Soviet influence has installed the thought process that unless rules and regulations are imposed by the government they have no importance. Government could be doing a lot more. It is still up to the individual companies to educate and train personnel to be health and safety-conscious in the work place," said George Apostolopoulos, general manager of Atlas Copco Central Asia.

Geomark, a company from Karaganda, has a specific attention to industrial safety on mine sites. Rustam Khodzhaev, director of Geomark, said: "The government has been controlling industrial safety since our independence. The main piece of legislation that is promoting these requirements is the Law on Civil Protection. Until recently, the Ministry of Emergency Situations was dealing with issues associated with industrial safety. Now it is the Com-

mittee of Industrial Safety along with its regional subdivision belonging to the Ministry of Investment and Development." Mining and industrial safety have been problems in the past, but Kazakhstan seeks to change this approach, as the industry has been both privatized and welcomes private capital from abroad. This provides yet another sign of a positive transformation.

●● Finding Talent

Globally, mining companies are experiencing a lack of qualified personnel, and the same can be said of Kazakhstan. One thing that is clear is that various incentives and schemes must be implemented to encourage young people to study geology. "For a long time, it was not considered prestigious to work in the mining industry, which is why today there is a serious lack of specialists in this sector. The government understands how crucial it is to develop talent across many spheres - mining, processing and services. We are working hard to change the perception of the mining industry in Kazakhstan; we aim to show Kazakhs that working for a mining company is a prestigious career," said Nikolay Radostovets, chairman of the Association of Mining and Metallurgical Enterprises (AGMP).

"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 the 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 the fields of geology, hydrogeology and geophysics. 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. 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," said Albert Rau, vice minister of Investment and Development.

In 2012, we identified a five-year program to decrease the number of accidents at our facilities. Every year, we invest significant amount of money to support this cause. This money is invested into modernizing industrial processes, creating safe conditions, purchasing of the most innovative personal protective gear, etc. Our goal is to improve all the indicators of industrial safety.

*- Bakhtiyar Krykpyshiev,
General Director,
Kazakhmys Corp.*

One company with a long history in Kazakhstan and focused around Ridder, a mono-city, is Kazzincmash. It is not an easy task to bring in specialists from out of town, which is why training them locally is indeed very necessary. "There are many families where people have been working at our production plant for generations, and we highly support this tradition. We are always happy to see our employees bring their children and grandchildren to the factory. Thanks to the continuous modernization of our equipment and the technology that we use, we can offer more interesting positions to our employees," said Alexandr Anchugin, director of Kazzincmash.

Finding qualified personnel has been an ongoing problem for mining companies globally and Kazakhstan has been no exception, but as a new generation is entering the sector, their skills are more in line with international standards. With further training being provided, Kazakh companies and universities are addressing the issue head-on. •

DO YOU HAVE VANCOUVER 2016 IN MINE?

Avez-vous Vancouver 2016 en tête?

CONGRÈS ICM 2016 CONVENTION

Leading Excellence | L'Excellence au premier plan

REGISTER as of January 4, 2016
INSCRIVEZ-VOUS dès le 4 janvier 2016

TECHNICAL PROGRAM

- Global Dimensions and Mining
- Rock Mechanics, Geology and Exploration
- The Mining Footprint
- Sustainable Organizations
- Innovations and New Ideas
- Excellence in Operations

LE PROGRAMME TECHNIQUE

- Dimensions mondiales de l'exploitation minière
- Mécanique des roches, géologie et exploration
- Empreinte écologique de l'exploitation minière
- Organisations durables
- Innovation et nouvelles idées
- Excellence opérationnelle

SAVE THE DATE: MAY 1-4, 2016
À VOS AGENDAS: 1 AU 4 MAI 2016

PLENARY
Plénière

TECHNICAL SESSIONS
Sessions techniques

WORKSHOPS
Ateliers

EXPO
CANADA'S MINING MARKETPLACE
CARREFOUR DES AFFAIRES CANADIENNES

→ CONVENTION.CIM.ORG



Terrance Powell

Almaty Advisory Board Chairman
CANADA EURASIA RUSSIA BUSINESS ASSOCIATION (CERBA)

A large number of the world's mining companies are listed in Toronto. Canada is world renowned for its mining sector and the country has a great reputation for mining technology and finance as a result. Like all mining companies, Canadian miners are always looking for new reserves and opportunities to grow their businesses. Until recently, Kazakhstan was an unknown commodity to many mining companies as the legislative conditions required for large-scale investment were not present. This is changing and the new mining laws expected in late 2015 or early 2016 should provide some comfort to potential investors in the sector. Conventions like PDAC certainly helped to open up Kazakhstan to Canadian mining companies by educating companies about the potential.

Rio Tinto, along with Kazgeology, recently invested \$6 million into the exploration of copper in Karaganda. What other steps should the government take to encourage similar deals?

Exploration is always the first and most important step in any successful venture in the extractive industry. Many of the country's assets were identified in the Soviet days but there is significant interest in and need for new discoveries. Kazakhstan needs international mining companies with more up to date technologies on hand to accomplish this goal. The government needs two things to happen if it wants to catch the international mining industry's attention. One is that they need to see that new discoveries being made. The second is a handful of test cases for the new legislation that shows the rule of law and sanctity of contract. Once these two events are married together we will see an increase in companies looking to invest in Kazakhstan's mining sector.

Kazakhstan is looking to upgrade its mining code. What changes will this bring?

Again, the legislation has not been approved and signed into law as yet so we are still in the waiting phase. However, in preparation for its enactment, we are seeing more interest in the country's potential with people coming to town for preliminary discussions.

What are some of the major challenges that foreign investors will face in Kazakhstan?

There is a general recognition that there are certain skill sets that the country needs to import, as it does not have the expertise yet. This challenge still exists to some degree in the oil industry though significant progress has been made there given the size of investment that has already been made by the multinationals. In terms of the government's efforts in developing local content, a similar effort needs to be made by foreign mining companies. The law on local content is very complicated and, in many instances, misunderstood and improperly applied.

Infrastructure also poses a challenge for the mining industry, as typically the projects are located in remote areas with minimal access to transport routes. Transport infrastructure will have to catch up as will social infrastructure if you assume the growth in workforces, both foreign and national, that is needed to exploit any deposits discovered. The education system and current industry have their flaws but if investment in the people and institutions are made you will see significant results as the Kazakh people are only waiting for the opportunity to show their talents.

There is a significant amount of Canadian service providers in Kazakhstan. How do these companies enter the country, operate here and what is the climate for them?

CERBA tries to support both Canadian and Kazakh companies in their cross border business activities. The best thing we can do is to promote dialogue between companies that are already doing business in Kazakhstan and/or Canada. Once the lines of communication are open we have accomplished our mission and look ahead to the next opportunity for us.

How do you see CERBA's role developing in Kazakhstan over the next five years?

In Moscow, half to two thirds of CERBA's members are Canadian companies. In five years, CERBA Kazakhstan will see the reverse, with more Kazakh companies as members than Canadian companies. That said, we could see a substantial increase in Canadian interest, if the mining industry in Kazakhstan grows as we hope that it will. •

●●● **Can you give a brief introduction to the Canada Eurasia Russia Business Association (CERBA) in Kazakhstan?**

The Canada Eurasia Russia Business Association (CERBA) has a large presence in Moscow and in 2011 it was decided to bring Kazakhstan in as a new chapter. Being relatively young and taking into consideration the smaller Canadian business community here, CERBA in Kazakhstan still has a smaller presence than in Russia or its sister chapters in Canada but we are seeing growth in our membership. As we all know, Kazakhstan has a significant oil and gas reputation as well as mining and agriculture potential which is spread out across the country.

In March, CERBA participated in the annual PDAC mining convention in Toronto. Have these conventions had an impact on the number of Canadian mining companies coming to Kazakhstan?

ONLY GOING TO ONE MINING INVESTMENT SHOW THIS YEAR?

MAKE IT PDAC

MARCH 6 – 9

PDAC 2016 CONVENTION HIGHLIGHTS

- Technical Program featuring **18 sessions by industry experts**
- Over **1,000 exhibitors** promoting technology, products, samples and claim results!
- Topical **Short Courses**
- Aboriginal, Capital Markets, Corporate Social Responsibility (CSR) and **Student Programming**
- **Popular networking events** such as Luncheons, Awards Evening, Receptions and Closing Party

REGISTRATION OPENS IN DECEMBER
www.pdac.ca/convention

Prospectors & Developers Association of Canada
International Convention, Trade Show & Investors Exchange
 Metro Toronto Convention Centre, Toronto, Canada



WHERE THE WORLD'S MINERAL INDUSTRY MEETS





“American Appraisal sees great potential in Kazakhstan, which it will be actively working to develop; it is confident that Kazakhstan will become a very business friendly country, and its future looks very positive. New mining legislation is expected to bring in more investors in this sector, but other sectors are set to grow alongside it, bringing jobs and further investment to Kazakhstan.”

- Yerlan Yeszhanov, General Director,
American Appraisal



“Given the current situation, it is important to note that we are not planning on reducing the output or downsizing. Despite the negative outlook for demand for iron ore materials, we're planning to maintain production to 32 million metric tons. At the same time, we're planning to increase ferroalloys, aluminium and Shubarkol coal output.”

- Azamat Bektybayev, Vice President, Production,
Eurasian Resources Group (ERG)



“We support the change of the system to international JORC. This change should have happened a long time ago. It is a difficult process, and we hope that the results will become visible soon. In December 2014, Kazakhstan accepted an analog of the Russian code for auditing NAEN, ‘Kazakhstan CRIRSCO’. The accepted code is an adapted version of JORC, which allows public audit as well as GKZ reports, but under the condition that GKZ reports have priority. Of course, this system would simplify work for a lot of companies, but at the same time we do hope that JORC is still going to enter the systems of mining companies in Kazakhstan very soon. Having two standards is excessive and complicates the understanding of the resource base among investors.”

- Georgiy Freiman, Chairman, Board of Directors,
GeoMineProject (GMP)



“As of today, there are many greenfield exploration projects in Kazakhstan being developed by both local companies and joint ventures, although exploration budgets have been reduced in the last few years, mirroring the global economic crisis. Still, the government is encouraging exploration to discover new deposits and increase the mineral resource inventory of the country. To this end, a few joint ventures with foreign investors were established to undertake geological prospecting and exploration in Kazakhstan, and WAI is extensively involved in one of these projects.”

- Ruslan Sevostyanov, General Director,
Wardell Armstrong



“3M established the first representative office here in Kazakhstan in 1995. The Kazakh market is very interesting for us because of the country’s mining and oil and gas sectors. It is a very promising country, and there is a great deal of opportunity here.”

- Andrey Lymar, General Director,
3M Kazakhstan"



“Nowadays, the Kazakh government realizes that prospecting and exploration should be a joint effort between private companies and the state. We can see that the Kazakh government is heading in the right direction today by preparing and implementing more liberal mining and exploration legislation for Kazakhstan, allocating funds to invest in risky early-stage project development, prospecting/ exploration, and establishing state companies that can facilitate exploration and mining activities on behalf of the government.

- Adil Aissautov, Technical Director,
WorleyParsons



“With a local presence in Kazakhstan, we see significant opportunities to match our technologies to specific market needs, as Kazakhstan pursues its stated goal of becoming one of the world’s top ten oil and gas producers and exporters. We view this as a very exciting time for both Dow and the Kazakhstan oil and gas industry, as it takes critical steps toward global leadership, including the development of the Kashagan oil and gas field in the Caspian Sea, the renovation of its three refineries, and the ongoing expansion of its internal and export pipeline network.

- Igor Girnyk, Country Manager,
Dow Kazakhstan



“One cannot discount the natural attributes that Kazakhstan has for renewable projects. A large number of foreign investors are also looking at solar and wind and are significantly interested in developing the sector. The new incentive laws passed in 2014 theoretically make it possible to access an interesting return via tax reliefs from some of these renewables projects, but we have yet to see much of the like. The state has made efforts to make these projects more attractive but more is needed; there is a lot of interest but extremely limited execution.”

- Anthony Nicholas Mahon, Partner, Tax & Legal,
Deloitte



“Kazakhstan is one of the most important emerging markets to western institutions where there is major appetite for government-supported projects. Having said that, we seized the opportunity and have gathered all components in order to be able to execute our projects. Therefore, KB Enterprises has signed an agreement with Siemens as an EPC contractor exclusively, in addition to securing the finance towards the project.”

- Taylan Karamanli, Managing Director,
KB Enterprises



“There are still many exploration and development blocks to be licensed in Kazakhstan. The government invests in the infrastructure to facilitate private investments. The challenge is that the mining sector currently faces some barriers and regulatory restraints. Investors want clarity and to be secured in their investment.”

- Galymzhan Tajiyakov, Director, Project Finance Group,
Eurasian Development Bank



GOVERNMENT AND ASSOCIATIONS	PAGES
ASSOCIATION OF MINING AND METALLURGICAL ENTERPRISES (AGMP)	18, 50, 107, 109, 115
CANADA EURASIA RUSSIA BUSINESS ASSOCIATION (CERBA)	14, 110, 115
GOVERNMENT OF KARAGANDA REGION	38, 57, 60, 115
MINISTRY OF ENERGY, REPUBLIC OF KAZAKHSTAN	11, 23, 26
MINISTRY OF INVESTMENT AND DEVELOPMENT, REPUBLIC OF KAZAKHSTAN	7, 10, 15, 18, 43, 44, 58, 86, 90, 96, 99, 101, 108, 115

LEGAL AND CONSULTING	PAGES
COLIBRI LAW	42, 43, 46
DELOITTE	22, 23, 67, 84, 113
EURASIAN DEVELOPMENT BANK	26, 84, 113
ILF CONSULTING ENGINEERS	21, 22, 29
MICHAEL WILSON & PARTNERS, LTD.	15, 42, 44
PWC MINING AND POWER SPECIALISTS, ASSURANCE DEPT.	27
SRK CONSULTING, KAZAKHSTAN	12, 55, 83, 84
WARDELL ARMSTRONG	83, 112
WHITE & CASE	13

POWER	PAGES
BATYS TRANSIT	26
CENTRALASIAN ELECTRIC POWER CORPORATION (CAEPCO)	20, 22, 25
DET NORSE VERITAS KAZAKHSTAN	28
KB ENTERPRISES	23, 31, 113
AES CORP, KAZAKHSTAN	22, 24

EXPLORATION AND PRODUCTION	PAGES
ARCELORMITTAL TEMIRTAU	34, 38, 39, 45, 57, 60, 85, 89
ALTAY POLYMETALS	16, 17, 36, 36, 43, 52, 59
BETPAK DALA	58, 63
EURASIAN RESOURCES GROUP (ERG)	34, 37, 112
EUROCHEM-KARATAU	61, 64, 65, 75
ILUKA RESOURCES	10, 33, 34, 42, 47, 51, 109
KATCO JV	15, 62
KAZAKHMYS CORP.	13, 18, 30, 34, 36, 40, 70, 76, 77, 89, 90, 91, 102, 108
KAZPHOSPHATE	34, 44, 61, 65, 96
KAZZINC HOLDINGS	36, 108
KB ENTERPRISES	23, 31, 113
RIO TINTO	10, 12, 15, 34, 49, 53, 59, 67, 75, 82, 86, 109, 110
SYRYMBET	48, 51, 54, 59, 60
YILMADEN HOLDING	61, 66, 56

SERVICES	PAGES
AMERICAN APPRAISAL	112
GEOMARK	45, 108
GEOMINEPROJECT (GMP)	82, 83, 92, 112
KAZDRILLING	13
KAZGEOTECH	82, 86, 87
KPSP	82, 83, 89
LEICA GEOSYSTEMS AND HEXAGON MINING DIVISION	93
MICROMINE	82, 92
NATIONAL CENTER ON COMPLEX PROCESSING OF MINERAL RAW MATERIALS, REPUBLIC OF KAZAKHSTAN	41, 82, 85
ORICA KAZAKHSTAN	43, 84, 91, 96
RJC GROUP	36, 82, 90
SGS KAZAKHSTAN AND CASPIAN SUB-REGION	54, 59, 69, 83, 88
WORLEYPARSONS	113

EQUIPMENT	PAGES
AK MACHINERY	35, 72, 79
ATLAS COPCO CENTRAL ASIA	2, 35, 70, 72, 73
BORUSAN MAKINA KAZAKHSTAN	35, 71, 72, 74, 75
KAZZINCMASH	68, 77, 109
METSO KAZAKHSTAN	43, 52, 81
SANDVIK KAZAKHSTAN	35, 70, 72, 73, 76
THRANE TEKNIKK	71, 78, 82
VOLVO GROUP KAZAKHSTAN	80

CHEMICALS	PAGES
3M KAZAKHSTAN	99, 105, 112
BASF	94, 96, 97, 104
CHEMIE & TECHNOLOGY	72, 95, 96, 102
CORROCOAT CASPIAN	99
DOW KAZAKHSTAN	96, 105, 113
EVONIK CHIMIA	97, 100, 101
KAZAKHSTAN PETROCHEMICAL INDUSTRIES (KPI) INC.	76, 97, 98
LINDE GAS KAZAKHSTAN LLP	15, 97, 103

This list contains those companies interviewed during the course of research for this publication and as such represents only a limited selection of the companies operating in the power, mining and chemicals industry of Kazakhstan. It should not be considered a comprehensive guide. GBR holds an exclusive and extensive database for Kazakhstan and the wider region. For further information on database access packages, please contact info@gbreports.com or call +44 20 7812 4511.

EDITORIAL AND MANAGEMENT TEAM

Project Director: Katya Koryakovtseva (katya@gbreports.com)

Journalist: Lubo Novak (lnovak@gbreports.com)

Journalist: Neha Ghanshamdas (nghanshamdas@gbreports.com)

Executive Editor: John Bowlus (jbowlus@gbreports.com)

Graphic Designer: Gonzalo Da Cunha (gdc@d-signa.com)

For updated industry news from our on-the-ground teams around the world, please visit our website at gbreports.com, subscribe to our newsletter by signing up to our VIP list through our website, or follow us on Twitter: @GBReports.

Additional copies of this book can be ordered through Elif Ozturk (elif@gbreports.com).

THANK YOU

We would also like to sincerely thank all the governmental bodies and associations that took time to share their insights into the market for their experience and knowledge.

MINISTRY OF INVESTMENT AND DEVELOPMENT OF THE REPUBLIC OF KAZAKHSTAN

invest.gov.kz

GOVERNMENT OF KARAGANDA REGION

karaganda-region.gov.kz/eng

ASSOCIATION OF MINING AND METALLURGICAL ENTERPRISES (AGMP)

agmp.kz

CANADA EURASIA RUSSIA BUSINESS ASSOCIATION (CERBA)

cerbanet.org



GLOBAL BUSINESS REPORTS