

## KAZAKHSTAN

*By Interfax-M&CN*

**K**azakhstan's economy grew faster last year than in the past ten years since the country gained independence. Industrial output was up 14.6% in 2000, GDP grew 9.6%, and capital investment increased by 29.4%. Inflation was 9.8% as had been expected. The economy expanded largely as a result of an increase in foreign trade, especially exports, which increased by more than 70%.

Production was up 21.5% in the mining industry as iron ore production increased by 80%, coal and brown coal production increased 30%, natural gas and nonferrous metal production increased by 20%, and crude oil and associated gas production rose 15.8%.

Kazakhstan boosted exports of precious, nonferrous and ferrous metals. The country exported US\$383.5 million worth of precious metals in 2000, 34% more than in 1999, according to the National Statistics Agency. Exports of refined copper and alloys totalled 393,500 t worth US\$669.1 million, respectively 11% and 27% more than in 1999. Exports also rose 12% and 22%, respectively, to 232,200 t or US\$198.2 million for unprocessed zinc; 580% and 520% to 82,100 t or US\$59.7 million for unprocessed aluminium; 17% and 33% to 1.36 Mt or US\$180.8 million for aluminium oxide and hydroxide. Ferroalloy exports rose 17% and 38%, respectively, to 845,300 t or US\$293.4 million. Exports of flat ferrous roll, including tinplate, increased 12% and 27%, respectively, to 3.263 Mt or US\$764.3 million, and lead exports jumped 41% and 33% to 155,500 t or US\$64.4 million. Kazakhstan also exported 5.34 Mt of iron ore worth US\$51.3 million, respectively 53% and 34% more than in 1999.

The Kazakhstan Government is due to approve a comprehensive programme to

develop the mining and metals industry between 2001 and 2005. The programme calls for growth in production throughout the sector, including for iron ore, copper, zinc, chrome, lead, gold and silver. It reflects the state of the ore base, mining and metals enterprises, plans for their development and investment in selected branches. One of the main targets is the construction of an aluminium smelter in the Pavlodar region. Japan's Mitsui and Canada's SNC-Lavalin have presented an initiative to build the smelter, which would produce about 240,000 t/y of aluminium and cost in the region of US\$800 million.

In November 2000, the State Property and Privatization Committee announced that the government was getting ready to sell parts of its stakes in several major metallurgical companies. The terms for the sale would depend on the state of the market. The government would be selling the shares directly to the buyers, and each deal would be subject to a separate government order to approve it. The enterprises are: Ust-Kamenogorsk Titanium and Magnesium Combine (15.5%); Kaztzink, the national zinc corporation (27.7%); Aluminium of Kazakhstan, the company that controls Kazakhstan's bauxite and alumina industry (31.64%); Sokolov-Sarbai Mining Production Association (SSGPO), Kazakhstan's biggest iron ore producer (39.5%); and Kazkhrom, the national chrome corporation (31.37%). The biggest shareholder in Aluminium of Kazakhstan, Kazkhrom and SSGPO is the UK-registered Shodiev Group, which is represented in Kazakhstan by Kazakhstan Mineral Resources Corp. (KMRC). Aluminum of Kazakhstan, Kazkhrom and SSGPO are co-founders of the Evraziisky Bank group of companies. Switzerland's Glencore International owns Kaztsink via its daughter firm, Kazastur Zinc AG. Belgium's Specialty

Metals Co. owns 65.67% of the Ust-Kamenogorsk Titanium Combine.

### Iron and Steel

Kazakhstan boosted iron-ore production by 68.8% to 16.2 Mt in 2000, compared with 9.6 Mt in 1999. Output of iron-ore pellets increased by 136% to 6.6 Mt. Kazakhstan's exports of iron-ore products were up 123.7% in 2000 to 9.07 Mt. According to Rudprom, the Russian agency that collects statistics on CIS iron-ore producers, this comprised of 5.15 Mt of pellets and 3.92 Mt of concentrate. All of the exports went to Russia. The growth in exports is attributed to rising demand at Russian steel mills. SSGPO delivered its iron ore products to Magnitogorsk Metallurgical Combine (MMK) in Russia's Chelyabinsk region.

SSGPO mined 30.13 Mt of crude ore last year and produced 13.39 Mt of iron-ore products, a 79% increase on 1999. Sales grew 65% to 13 Mt, of which 6.55 Mt were pellets. SSGPO invested Te5 billion (US\$35 million) in production-related areas. It acquired seven Belarussian Belaz and ten Caterpillar (CAT-779D) dump trucks, new charging machinery, a loader, crusher, magnetic separators, drilling rigs, dump cars, a 60-t trailer and, for the Kachar open pit, EKG-8 and EKG-10 excavators. The association is shipping more than 1 Mt/mth of iron-ore to consumers each month. It is also despatching 500-600 rail cars of concentrate and pellets per day to the Magnitogorsk steel mill in Russia and to Ispat-Karmet in Kazakhstan.

By 2005, SSGPO is targeting annual production of 35 Mt of crude ore and 14.2 Mt of commodity ore, of which 6.9 Mt will be pellets.

The mining company Orken (formerly the Lisakovsky GOK for the Kostanai region of northern Kazakhstan) shipped 988,000 t of iron-ore concentrate in 2000, up 3.7% on 1999. The Lisakovsky GOK was built on the basis of one of the world's largest iron-ore

deposits. The plant has at its disposal a virtually inexhaustible raw material base with reserves of 2,760 Mt. All output was shipped to Ispat-Karmet. In 2000, Te147.3 million (US\$1 million) of investments were made at Orken, and these funds were mainly used to modernise production. In 2001, the company plans to spend nearly Te145 million on raising production. Currently, the company is upgrading its gravitation and magnetic separation plant.

Kazakhstan in 2000 produced 3.69 Mt of flat rolled steel, 16% more than in 1999. The figures were up 84% to 220,143 t for tin-plate and 31% to 364,527 t for galvanised roll. Kazakhstan produced 1.91 Mt of ferroalloys, 9% more than in 1999, and 4.78 Mt of ingots.

Ispat-Karmet, Kazakhstan's biggest steel mill, plans to launch a new galvanising plant in 2001. The company intends to invest US\$600 million in this and other capacity with support from the European Bank for Reconstruction and Development and the World Bank. However, the company plans to reduce its sales of hot roll and slab and increase sales of cold-roll and finished products. Ispat-Karmet does not sell metal in Kazakhstan itself. The company is wholly-owned by Ispat International, a member of the LNM Group. It controls a metallurgical complex and 15 coal mines with the combined capacity of 18 Mt/y of coal (reserves are given as 1,570 Mt). It also operates a 435 MW heat and power plant.

### Gold

Gold mining is one of the most important sectors in Kazakhstan. This is because, at about 1,500 t, the country's proven gold reserves are the ninth largest in the world (with an average gold content of 6.3 g/t). These reserves are the third largest in the CIS (after Russia and Uzbekistan).

Gold exploration has been conducted in 225 districts. Kazakhstan's biggest gold fields are Bakyrchik and Suzdalskoye in the east, Vasilkovskoye in the north and Akbakaiskoye

in Zhambyl region in the south. The Ridder-Sokolnoye and Novoleninogorskoye fields have the largest complex ore reserves.

Kazakhstan did not refine gold on its territory prior to gaining independence but now has three refining enterprises - Ust Kamenogorsk Metallurgical Combine (part of Kaztzink), Balkhashmys (part of Kazakhmys), and Tseliny Mining and Chemical Combine. The average rate of gold refining since the collapse of the Soviet Union has been 8 - 9 t/y, but last year production increased by 20% to 11.52 t.

Some specialists said that last year's production was the highest possible given current low world market prices, the high cost of production, and the shortage of foreign investment. If more money is invested in the industry gold production could soar by four to five times. But an estimate of the cost of developing new mines and rehabilitating old ones has shown that Kazakhstan would need about US\$1 billion in investment to accomplish this.

ABS-Balkhash produced 2.1 t of gold in 2000 (1.39 t in 1999) and Pustynnoye Mining and Metallurgy Enterprise, a division of the company, produced 244.6 kg, compared with 151.6 kg in 1999. ABS-Balkhash is based in Karaganda region and is licensed for seven gold fields - Yenbekshi, Ush-Shoky, Myn-Aral, Sayak-IV, Sholkyzyl, Pustynnoye (all in Karaganda region), and Moynkum (Zhambyl region). Yenbekshi, Sholkyzyl and Pustynnoye are open-pit mines and the others are underground operations. They contain 107 t of proven gold reserves, and the company can produce up to 7 t/y of gold. It refines the gold at its own plants - Balkhash, which can refine 150,000 t/y and Priozersk, which can refine 300,000 t/y.

The big Vasilkovskoye gold lode in Kazakhstan's Akmola region will not go fully on stream before 2002 because it is taking longer than anticipated to set up a joint venture with Israel's Leviev Group, which will

be represented by its Dutch subsidiary Floodgate. Leviev is supposed to have a 60% interest in the joint venture, as per a government resolution of August 2000. The government will own 40%.

Leviev Group has estimated that the Vasilkovskoye project would absorb US\$134 million, including the construction of mill and rail tracks, in the first 3.5 years. The ore would be processed by KazSubton, which produces uranium yellowcake for the national nuclear corporation, Kazatomprom. Transporting the ore to the uranium plant would add US\$1/oz to the cost of producing gold. The new joint venture would produce 5-6 t/y of gold, using either a heap-leaching method or a new bacterial leaching method designed by Kazakh specialists.

In February 2001, Andas-Altyn, a subsidiary of Canada's Eurasia Gold Corp., commissioned a mining and milling plant for up to 1.5-2 t/y of gold in east Kazakhstan. The company built the complex, which has a desorption facility, in seven months using US\$1.2 million in two-year credits from TsentrKredit, a Kazakh commercial bank. The funds should be recouped in three years. The complex will work at half its capacity in 2001 and achieve full capacity after two years. Andas-Altyn has been mining oxidised ore at two sites in East Kazakhstan - Central Mukur and Miyaly - since the mid 1990s. The mines hold proven reserves of 6.5 t and 2.5 t of gold, respectively. Last year, the company mined more than 1 Mt of ore, 150% more than in 1999, thanks to an expansion project. It intends to raise ore production gradually, buying new equipment. In 2001, gold production is slated to rise 50%. The company, whose average cost of producing gold is US\$171/oz, uses an ion-exchange sedimentation leach method. The resin obtained, which contains 4.5-5 kg/t, is sent to the desorption unit where it is turned into dore bullion.

Altyn Aimak, a Kazakh mining and metals corporation, plans by the end of 2001 to start

an experimental facility to recover gold from ores with a high level of impurity at the Bolshevik gold lode in the east of the country. The company has come up with a new leaching method to treat the ores, which have a high arsenic and carbon content. It will take seven to eight months to build the facility, during which time Altyn Aimak intends to mine ore at the deposit. It would cost US\$10 million to deliver the Bolshevik project, with some of the money coming from a state programme to develop the gold industry. The government has promised a repayable US\$1.5 million loan in 2001 and US\$500,000 in 2002. The company is also seeking a five-year bank loan.

Bakyrchik Gold, a Canadian-Kazakh joint venture (90% held by Canada's Indochina Goldfields), was created at the Bakyrchik GOK that is developing the field of the same name located 110 km from Semipalatinsk. A combine was built in the 1970s to produce 7 t/y of gold, and the field holds an estimated 200 t of gold. The ore is found at a depth of 1.2 km, and is fairly rich, with a content of 9.4 g/t Au. The biggest problem in developing the field is the high content of arsenic and carbon in the gold deposits. This complicates the extraction process, and means that the tailings pose a serious threat to the environment.

Indochina Goldfields will not resume production at the mothballed operation until it has seen what results Altyn Aimak achieves with its new bacterial leaching technology at the Bolshevik gold lode. Bakyrchik was halted because a roasting technology in use there could only achieve gold recoveries of 45%.

### **Chromium, Manganese and Ferroalloys**

In 2000, Kazakhstan increased output of chrome ore by 8% to 2.61 Mt, manganese ore by 21% to 1.14 Mt and manganese concentrate by 22% to 664,700 t.

Kazakhstan's chrome industry includes the Donskoi chrome mining complex in the Aktyubinsk region, the biggest chromite ore

producer in the former Soviet Union. Other producers include the Ferrokhrom ferroalloy works in Aktyubinsk and the Aksu ferroalloy works in Pavlodar region. The sector's plants are represented by Kazkhrom, the national chrome corporation.

Donskoi GOK produces chrome ores at Kempirsai, the biggest field in the CIS and one of the biggest in the world. The field holds proven reserves of 317.6 Mt. The Donskoi GOK includes the Donskoi, Tsentralny and Molodyozhny mines, a 5 Mt/y capacity mill and a 1.7 Mt/y capacity concentrator.

Donskoi GOK raised output by 8.4% in 2000 to 2.61 Mt. The GOK shipped 2.43 Mt of ore to consumers, 3.3% more than in 1999, and mine output was 3.21 Mt, of which 1.7 Mt came from the Molodyozhnaya mine (up 3%). A new underground development at Molodyozhnaya will increase output by another 250,000 t/y. The Tsentralnaya deep mine, which went on stream in 1999, produced 171,600 t of ore. The Poiskovy open pit, which also went on stream in 1999, yielded 1.14 Mt of ore in 2000, and the No. 16 open pit produced 196,100 t.

The biggest consumers of Donskoi ore are the Aksu and Ferrokhrom ferroalloy works, the Aktyubinsk chemical compounds plant and some Russian ferroalloy producers.

The Aksu Ferroalloy Plant increased ferroalloy production in 2000 by 3% to 755,433 t. Profitability was estimated at 15% for 2000. Aksu Ferroalloy Works of Kazakhstan has invested more than Te598 million in development of its ore base since the beginning of 1998 in a bid to achieve immunity from volatile world prices for raw and other materials. The Aksu works' own ore base consists of the Tur manganese deposit in the Karaganda region, and the Marganets mine amalgamation, which includes the Zhezda ore mill. The Aksu works has a state licence to develop the Tur deposit (the works has previously relied on other raw material

suppliers). An investment programme at Tur this year is seeking to reach an ore production capacity of 500,000 t/y from proven reserves of 12.5 Mt.

In January 2001, Aksu completed a plant capable of producing merchantable ferrochrome from slag, costing US\$51.8 million, as part of a technical upgrading programme. The plant launched a unit to process slag at the end of 2000. In the 30 years the plant has been in operation, it has accumulated about 5 Mt of slag. The process of producing ferrochrome and manganese alloys is due to the metal content of the slag of up to 4%.

Ferrokhrom increased production last year by 4.5% to 271,640 t and profitability was expected to be 8.2%. The Ferrokhrom ferroalloy works plans to introduce a new division for high-carbon ferroalloys in 2002. Kazkhrom will provide the capital. Kazkhrom also plans to invest US\$8.3 million in the modernisation of a gas turbine power plant at Ferrokhrom. In 1995-2000, Kazkhrom invested US\$33 million in Ferrokhrom. The money went on the modernisation of the Nos. 1 and 2 divisions, completion of an enclosed chrome ore storage facility and the Akturbo gas-turbine plant.

Zhairemsky GOK (Karaganda region, central Kazakhstan), a major manganese ore producer, invested around US\$10 million to expand production, construction-installation and research operations, and purchases of equipment, double that of the figure invested in 1999. At present, Zhairemsky GOK is increasing expenditure on geological exploration operations with the aim of strengthening its natural resource base. Zhairemsky GOK employs open-pit mining to exploit low-phosphoric iron, manganese and ferromanganese ore fields, and mono-barite ore fields. Switzerland's Nakosta AG owns the majority interest in the company. In August 2000, the government sold the state's 4.62% share package in Zhairemsky GOK at

an auction for Te103.36 million to Olberg Holding AG of Switzerland.

### Mineral Fuels

Kazakhstan is the former Soviet Union's third biggest coal-producing country behind Russia and Ukraine. In 2000, it produced 72.4 Mt of coal, 28% more than in 1999. Output of brown coal increased by 33.3% to 2.4 Mt. The Kazakh coal production is centred on the Karaganda and Ekibastuz basins. Karaganda, in north-central Kazakhstan, mines coking coals of high quality and supplies both domestic and Russian steel industries. Ekibastuz, in northern Kazakhstan, produces mainly coal for use in Kazakh and Russian power plants.

In 2000, Bogatyr Access Komir (BAK), a subsidiary of US company Access Industries Inc. that is developing the Bogatyr and Severny coal fields in northern Kazakhstan, produced 23.1 Mt of coal, up 35%, and Severny 12.7 Mt, or 20% more than in 1999. By preliminary counts, BAK invested about Te4 billion (US\$28 million) in the Bogatyr mine in 2000. This included Te1.5 billion on capital construction and retooling. It bought a second mobile-transfer conveyor (able to shift coal to a conveyor height of 25-28 m) from Germany's Man Takraf.

Since the third quarter of 2000, BAK has also been running the adjacent Severny strip mine, which is owned by Russia's Unified Energy Systems. UES signed the Severny and the Bogatyr No. 9 field, which is also Russian-owned, over to BAK for one year originally, but has now extended this until 2003. The mine, which was started in 1957, can produce up to 15 Mt/y of coal.

Eurasian Energy Corp. (EEK) in Kazakhstan's Pavlodar region produced 16 Mt of coal in 2000, 44.3% more than in 1999. Coal and electricity output rose to meet increased demand from the corporation's main consumers the Aksu Ferroalloy Plant (Pavlodar region), Sokolov-Sarbai Mining Production Association, Ispat-Karmet steel

mill (Karaganda region) and a few new smaller users.

In October 2000, Eurasia Financial and Industrial Co. acquired the 78.93% state-held shares in the Shubarkolsky strip mine, an operation in Kazakhstan's Karaganda region. The company had acquired 100% of the Shubarkolsky Loading and Transport Enterprise in an earlier tender. Eurasia Financial and Industrial Co. agreed to pay all tax and other debt owed by the two enterprises. The Shubarkolsky mine was restructured as an independent company in January 1996. The state held 90% of the company's charter capital following the first share issue, and employees held 10% of preferred shares. The US company Global Mineral Reserves acquired a 13.2% stake in the mine through a second share issue in February 1997. The mine currently has charter capital of Te1.14 billion (US\$14.9 million). Shubarkolsky has been producing coal since the mid-1980s, and the field still holds an estimated 1.7 Mt of coal.

### Oil and Gas

Extractable oil reserves in Kazakhstan exceed 7,000 Mt. About 1,700 km<sup>2</sup> (62%) of Kazakh territory is oil rich and the republic currently has 160 oil fields, of which 60 are operational.

Production of oil and gas condensate in Kazakhstan amounted to 35.26 Mt in 2000, which was 5.2% over target and 17.3% more than in 1999. Also, last year the republic produced 8.866 billion m<sup>3</sup> of natural gas (5.1% over target and up 23% from 1999).

Subsidiaries of Kazakh national oil and gas company KazakhOil produced 5.94 Mt of oil and gas condensate in 2000 (6.5% over target and up 7.4% year-on-year). In particular, Uzenmunaigaz produced 3.65 Mt of oil (9.2% over target and up 12.6% year-on-year) and 39,177 t of condensate (3.1% and 2.2% respectively) and KazakhOil-Emba produced 2.29 Mt of oil (2.5% and 0.1% respectively).

Nine companies with KazakhOil participation produced 11.4 Mt of oil in 2000 (1% under target and up 10.9% year-on-year). Most of this production was accounted for by Tengizchevroil - 10.5 Mt (0.7% under target and up 9.6% year-on-year).

Other Kazakh oil companies produced 17.92 Mt of oil last year (9.1% over target and up 25.7% year-on-year), including Mangistaumunaigaz - 4.17 Mt (1.7% and 3.3% respectively), Aktobemunaigaz - 2.59 Mt (2% and 12.3% respectively), Karachaganak Petroleum Operating Co. - 4.63 Mt (17.4% and 37.9% respectively), and Hurricane Kumkol Ltd. - 3.33 Mt (17.3% and 30.9% respectively).

Gas production by KazakhOil subsidiaries in 2000 amounted to 1.4 billion m<sup>3</sup> (2.2% under target and down 1.6% year-on-year). Companies with KazakhOil participation produced 2.14 billion m<sup>3</sup> of gas (1.3% over target and up 31.1% year-on-year). Other companies produced 5.32 billion m<sup>3</sup> of gas (8.8% and 28.2% respectively).

Kazakhstan will prepare a strategy in 2001 to develop its gas industry, including gas exports. Estimates of domestic gas consumption and the amount of fuel needed for technological purposes must be determined. A similar development strategy will be prepared for the oil industry.

Oil reserves on Kazakhstan's Caspian shelf could contribute to further growth in oil output. The reserves are estimated at 7,000 Mt, and future production on the shelf is expected to total 100 Mt/y, according to KazakhOil president Nurlan Balgimbayev. However, the OKIOC consortium conducting the drilling of the East Kashagan site is not yet prepared to make any estimates of oil reserves. An OKIOC general manager did not confirm or reject the Kazakh side's opinion of the reserves at the site.

### **Bauxite and Alumina**

Kazakhstan has the 17th largest bauxite reserves in the world with 1.1% of world reserves. It is second after Russia among CIS countries for bauxite reserves. Kazakhstan has about 300 Mt of reserves with bauxite content of 42% - 46%, but needs just 3.5 Mt/y. Current production can provide low-grade bauxites for more than 100 years and high-grade for the next 10 to 15 years.

Kazakhstan Aluminium controls Kazakhstan's alumina and bauxite industry. The Krasnooktyabrskoye, Torgai, and Severny bauxite mines in the Kostanai region of northern Kazakhstan form the company's main ore base. Krasnooktyabrskoye includes 12 bauxite mines, including three (Ayatskoye, Belinskoye, and Krasnooktyabrskoye) that are currently being developed. The Ayatskoye mine produces 400,000 t of ore a year and Belinskoye produces up to 1.2 Mt/y. Industry specialists consider Krasnooktyabrskoye to be the most promising, with reserves of more than 100 Mt. Development began in 1998 and has reached an ore output of 1 Mt/y. The Torgai mine, now known as Torgai Bauxite Mine, was created at the Amangeldy group of bauxite and fireclay deposits. The group includes the Arkalykskoye, Toktylgatskoye, Severnoye, Nizhne-Ashutskoye and Verkhne-Ashutskoye deposits. Arkalykskoye was the biggest of the Amangeldy mining fields with 28 Mt of bauxite and 25 Mt of fireclay. The field has been worked out and Verkhne-Ashutskoye and Nizhne-Ashutskoye are now being mined. The company has decided to develop the Severnoye field, and could also begin developing Kaktalskoye and Naurzumovskoye in central Kazakhstan, which hold an estimated 160 Mt of bauxite reserves.

Kazakhstan Aluminium produced 1.21 Mt of alumina last year, 4.9% more than in 1999. The company also produced 18,655 t of gallium and 47,956 t of aluminium sulphate. Kazakhstan Aluminium mines produced 3.73 Mt of bauxite, 3.4% more than in 1999.

Kazakhstan, which has not had primary aluminium smelters since Soviet times, some years ago decided to build its own aluminium smelter. In mid-2000, Japan's Mitsui and Canada's SNC-Lavalin Group Inc. announced an initiative to build an aluminium smelter in Kazakhstan's Pavlodar region. The Japanese company estimated it would cost US\$800 million to build the smelter, which would have the capacity to produce 240,000 t/y of aluminium. The consortium expects the feasibility study for the smelter to be ready by the end of 2001.

### **Copper**

Kazakhmys Corp., Kazakhstan's biggest copper producer, produced 394,722 t of refined copper in 2000, 9% more than the 361,800 t achieved in 1999. The corporation's Zhezkazgan and Balkhash smelters, both in the Karaganda region, produced respectively 144,000 t and 250,000 t of refined copper. Kazakhmys last year also produced 548 t of silver in granules, compared with 412 t in 1999, and 4,074 kg of gold in ingots, compared with 2,319 kg previously. The growth was fuelled by the introduction of new mines in the Karaganda region and in southern Kazakhstan, among them the Sayak and Shatyrol mines in the Zhezkazgan region. Kazakhmys also recycled more slag.

Kazakhmys consists of mines, factories and power stations from the Zhezkazgan industrial district, the Balkhash Mining and Metals Combine (former Balkhashmys), combined heat and power plants from Zhezkazgan and Balkhash, a copper wire rod mill, the Borly coal producer, VostokKazMed (West Kazakhstan region) and other enterprises. It is a shareholder or co-founder of Zhezkazgangeologiya and the Kazakhmys Pension Fund, among other enterprises. South Korea's Samsung owns 40% of the shares in Kazakhmys, the Kazakh Government 35%, employees 20% and investment funds 5%. The government-owned 35% stake is in the trusteeship of Vladimir Kim, the head of Kazakhmys.

In 2000, the corporation invested US\$82 million of its profits in production-related areas, including the ore-base. In 2001, Kazakhmys intends to produce 412,000-415,000 t of cathode copper and to invest US\$102 million in production-related areas. Kazakhmys plans to spend US\$575.7 million on an investment programme from 2001-2005.

Meanwhile, in September 2000, Cyprus-based East Point Holding won a tender for developing Kazakhstan's largest copper-molybdenum mine, Boshekul (Pavlodar region, north Kazakhstan). The company is to work out a development plan for the deposit. East Point Holding plans to involve St Petersburg's Mekhanobr and Moscow's Giprotsvetmet. The company will begin construction of a mine and a plant for processing 7 Mt/y of ore into standard concentrate. The company is to spend around US\$100-140 million on the work. Processing 7 Mt/y of ore will produce 35,000-40,000 t/y of copper concentrate, around 600 t of molybdenum, 1 t of gold, and 12-13 t of silver a year. The reserves at that level of output provide 23-24 years of work.

### **Lead and Zinc**

Kaztzink is the largest Kazakh lead and zinc producer and one of the leaders in the CIS. Kaztzink produced 5.15 Mt of ore in 2000 and processed 5.77 Mt. It produced 246,500 t of zinc and 143,600 t of lead, respectively 7.5% and 28% more than in 1999. Kaztzink also produced an estimated 383,800 t of copper, 5,845 kg of gold, and 296.250 t of silver.

Kaztzink includes Ust-Kamenogorsk Lead and Zinc Combine (UKSTSK), Leninogorsk Polymetal Combine (LPK), and Zyryanovsk Lead Combine (ZSK). Kaztzink also includes Bukhtarminsk and Tekeliysk power facilities and Tekeliysk Lead and Zinc Combine. Thus Kaztzink has five mines, three beneficiation plants, two zinc smelters with a capacity of around 260,000 t of metal, a lead smelter with a capacity of 160,000 t, plus a sulphuric acid plant, refining facilities, rare-earth metals

production, repair plants, and a number of other facilities. Switzerland's Glencore International AG holds the controlling stake in Kaztzink via its subsidiary Kazastur Zinc AG.

The company invested US\$32 million in production last year, boosting output at the Maleyevsky mine to 1.5 Mt of ore. Most of the sulphide ores are contained in horizons that are 400-700 m deep and up to 100 m thick. At the start of 2000, Maleyevsk had reserves of 36.7 Mt of ore, with content of 7.75% Zn, 2.61% Cu, 1.18% Pb, 0.56 g/t Au and 78.3 g/t Ag. Capacity at the Tishinsky mine was increased to 1.25 Mt/y. Kaztzink also refurbished the Zyryanovsk mill, which processes ore from the Maleyevsky mine.

In 2004-2005, Kaztzink will begin development of the Novoleninogorsk and Obruchevsky fields in east Kazakhstan. The deposits will allow the company to create a balance between the mining and processing of its own mineral resources. The Novoleninogorsk and Obruchevsky deposits have enough reserves for 10-20 years of work for Kaztzink (precise tonnages will be determined by final exploratory work). The ore from the deposits will be processed at Leninogorsk Beneficiation Plant.

### **Uranium**

Kazakhstan contributes about 3% of the world's uranium production. Annual mine output averages 1,500 t. Kazatomprom estimates proven uranium reserves in the country total 926,000 t. Proven plus probable reserves are 1.65 Mt.

Kazatomprom is Kazakhstan's uranium import - export operator and is one of the ten largest uranium producers in the world. The association controls Volkovgeologia, a geological organisation in which it has 90% of shares; Ulba Metallurgical Plant UMZ (90%), Mine No. 6; and the Stepnoye and Central mines. Kazatomprom is also co-owner of the Inkai and Katco joint ventures, with Cameco and Cogema respectively.

In 2000, Kazatomprom increased uranium production by 15% compared with 1999. Kazakhstan extracted 1,500 t of uranium in 1999, and does not intend to increase its uranium production in 2001. If prices remain at the current level or continue to fall, Kazatomprom will have to freeze the development of uranium deposits in southern Kazakhstan at the experimental level. Meanwhile, Kazakhstan is preparing to develop three deposits in southern Kazakhstan - Akdala, Yuzhny Karamurun and Yuzhny Moinikum. The authorities are also considering forming a joint venture with Kyrgyzstan to develop the Zarechnoye uranium deposit, which is also in southern Kazakhstan.

The Kazakh-Canadian joint venture Inkai, in which Kazatomprom holds 40% and the Canadian company Cameco 60%, planned to begin extracting uranium at the Inkai deposit with 280,000 t of uranium in or around 2002. A total amount of investment required to develop this deposit over a 25-year period is estimated at US\$500-600 million.

In 2000, Kazatomprom invested about US\$36 million in developing uranium, tantalum and beryllium production. The concern began to produce niobium pentoxide and ferro-niobium pentoxide and produced its first beryllium ingots. Kazatomprom plans to reach capacity beryllium production at Ulba Metallurgy Plant in the second or third quarter in 2001. In addition, by the end of next year it plans to begin niobium ingot production at the plant.

The Kazakhstan Government has reiterated that it intends to privatise Kazatomprom by selling a large block of shares to a strategic investor. In the past, the government has discussed the possibility of selling shares in Kazatomprom to Germany's Nukem, France's Cogema and Canada's Cameco. Between them, these three companies control about 60% of the world's uranium market. The amount of stock that might be offered for sale is still being discussed. The Kazakhs believe the sale of state shares in Kazatomprom to the world's biggest uranium companies will help promote the country's uranium on the world markets.