

## KAZAKHSTAN

*By Interfax-CNA*

**G**ross Domestic Product grew by 13% in Kazakhstan in 2001, the highest GDP growth in the CIS. Industrial production was up 13.5%, agricultural production grew 16.9%, investments in fixed capital were up 21%, transport services were up 11.3%, and communication services increased by 33.6%. Kazakhstan's economic growth in 2001 was fuelled largely by a rise in investment, an increase in small business activity and growth in domestic demand for agricultural products.

Growth in the minerals industry was 17%, mainly as a result of an increase in production of oil and associated gas (13.9%), coal and lignite (5.4%), non-ferrous metal ores (5.3%), and natural gas (3%). Production was up in other sectors of the mining industry as well (40%).

Kazakhstan exported US\$267.4 million worth of precious metals in 2001, 30% less than in 2000. The country also exported 822,600 t of ferroalloys, 3% less than in the previous year. Ferroalloy exports grew by 7% in value to US\$315.1 million. Exports of flat ferrous rolled products, including tin-plate, fell by 3% in volume to 3.18 Mt, and 24% by value to US\$577.2 million. Lead exports fell by 16% to 131,200 t and 15% by value to US\$54.7 million. Exports of refined copper grew by 2% to 399,200 t but fell 9% by value to US\$609 million; unprocessed zinc exports were up 2% at 235,800 t but down 20% by value to US\$157.7 million; and unprocessed aluminum exports fell by 43% to 46,700 t and 40% by value to US\$36 million.

Investments in the use and development of mineral resources in Kazakhstan amounted to US\$4.75 billion in 2001. Foreign investments were US\$3.78 billion (79.7%), and Kazakh investment reached US\$965.9 million (20.3%). The principal sum of investment (84%) was directed towards the extraction of priority mineral raw materials - hydrocarbons

(74%), polymetals (6%), copper (4%), coal (5%), iron and manganese (4%), gold, chromite, uranium and bauxite (1% each). Foreign investments in the extraction of minerals reached US\$1.308 billion and Kazakh investments were US\$228.9 million. Investments in geological exploration totalled US\$738.2 million, comprising US\$697.5 million in foreign investments and US\$40.7 million from Kazakh sources.

As of January 1, 2002, 1,203 companies were engaged in the development of mineral resources in Kazakhstan. Of them, 58% were involved in extraction, 29% in combined extraction and prospecting, and 13% in prospecting and exploration.

Kazakhstan plans to begin privatising strategically important enterprises included in the so-called 'blue-chip' group in 2002. These enterprises will chiefly include non-ferrous metallurgical plants with state-owned stakes, such as Kaztsink and Ust-Kamenogorsk Titanium-Magnesium Combine.

In January 2002, Kazakhstan officials announced that the government will hold talks and sign an agreement amending and enlarging the production-sharing agreement on the northern sector of the Caspian Sea, concluded by Kazakhstan and a group of foreign investors in 1997. This decision was made after BP and Statoil transferred their stakes (respectively 9.52% and 4.76%) in the Agip KCO consortium (formerly OKIOC) to other contractors. Agip KCO currently includes Eni (the project operator), British Gas, ExxonMobil, Inpex, Phillips Petroleum, Shell and TotalFinaElf. The consortium was formed in 1997 to explore Kazakhstan's Caspian shelf. It drilled two wells into the East and West Kashagan structures and began drilling a series of evaluation wells. Consortium officials themselves have

refrained from estimating the hydrocarbon reserves in the contract territory. Outsiders have estimated the Kashagan field contains 50 billion barrels of oil.

### Iron and Steel

Kazakhstan decreased iron-ore production by 5.1% to 14.14 Mt in 2001, against 14.89 Mt in 2000. Output of iron-ore concentrates increased by 5.7% to 13.52 Mt. Production of iron pellets totalled 6.11 Mt, down 8% from 2000.

Kazakhstan's exports of iron-ore commodities were down 4.5% year-on-year to 8.66 Mt in 2001. This included 4.93 Mt of pellets and 3.73 Mt of concentrate. Almost all the exports went to the Magnitogorsk Metallurgical Combine in Russia. Kazakhstan exported 100,000 t of pellets to China.

Sokolov-Sarbai Mining Production Association (SSGPO), Kazakhstan's biggest iron-ore producer, produced 12.32 Mt of ore in 2001, 7.9% less than in 2000. Production fell owing to repairs at its ore milling complex and higher natural monopoly prices. The association mined 28.77 Mt of crude ore, down 4.5%, processing 28.69 Mt. SSGPO stripped 54.26 million m<sup>3</sup> of overburden in 2001, 3.8% more than in 2000.

SSGPO completed the first stage of an upgrade at the tailings dump and a water system at its wet magnetic separation plant. It also completed a railway crossing at the Sarbai open pit and a second rail track from the Kachar open pit to the central plant. SSGPO also renovated a third turbine generator to build up capacity at the local heat and power plant to 172 MW. It overhauled conical crushers used in ore concentration and restarted the Kurzhunkul open pit. In all, SSGPO spent Te1.3 billion on new equipment. SSGPO plans to invest US\$29 million in production-related areas in 2002. The association plans to mine 30 Mt of crude ore and produce 13 Mt of commodity ore this year.

By 2005, SSGPO aims to be producing 35 Mt of crude ore and 14.2 Mt of commodities,

including 6.9 Mt of pellets. SSGPO is a member of the Evraziyskiy Bank group, which also includes Aluminum of Kazakhstan, the company that controls Kazakhstan's alumina and bauxite industry, and Kazkhrom, the national chrome corporation. The Kazakh Government owns 39.5% of SSGPO and the company features on a list that the government has classified as potential blue chip companies.

Kazakhstan produced 4.69 Mt of steel in 2001, 2% less than in 2000. The country also reported a 2% drop in production of bars and other forms and semi-finished goods from iron or carbon steel to 4.67 Mt. Production of pig iron dropped by 2% to 3.91 Mt.

Ispat-Karmet, Kazakhstan's biggest steel mill, produced 3.63 Mt of raw steel and rolled products, not including molten steel, in 2001, 1.4% more than in 2000. The company is exporting metal to more than 60 countries, as Kazakhstan itself consumes just 6% of total output.

Ispat International, which runs the mill, invested about US\$600 million in the works and the city of Temirtau between 1996 and 2000. The corporation has signed a memorandum with the government that states that from 2000 to 2004 it will invest a further US\$640 million.

### Gold

Gold mining is one of the most important sectors of the non-ferrous metallurgy industry in Kazakhstan. This is because Kazakhstan's substantial gold reserves are the ninth largest in the world and the average gold content in deposits is 6.3 g/t. Kazakhstan has proven reserves of about 1,500 t, the third largest reserves in the CIS after Russia and Uzbekistan.

Gold exploration has been conducted in 225 fields, including 30 placers and about 60 fields that also contain copper, silver and other ores. The rest of the fields are gold lode fields. Kazakhstan's biggest gold fields are

Bakyrchik and Suzdalskoye in East Kazakhstan region, Vasilkovskoye in North Kazakhstan region, and Akbakaiskoye in Zhambyl region. The Ridder-Sokolnoye and Novoleninogorskoye fields have the largest reserves of complex ore.

In 2001, production fell by 2% to 4.38 Mt of ore containing gold, but rose 25% to 115,600 t of concentrates containing gold. Kazakhstan produced 16,569 kg of refined gold in 2001, 44% more than in 2000.

ABS-Balkhash, a major gold producer in Kazakhstan, has licences to develop gold deposits in the Karaganda (central Kazakhstan) and Zhambylsk (south) regions. Proven reserves at all the company's mines total 107 t. In September 2001, ABS-Balkhash Mining Co. signed an agreement with the government to produce 50,000 t/y of ore at the large Yubileynoye gold deposit in Aktyubinsk region in northwest Kazakhstan. Reserves at the deposit total 45 t of gold. Yubileynoye also has rich supplies of copper and the company may also incidentally recover copper from the ore as well as gold. ABS-Balkhash bought the property complex at the Yubileynoye deposit at the end of 2000. Previously the deposit was developed by the French company Cogema, which had expected to sell gold at US\$328/oz. Cogema thus found the project was not to its advantage and refused to develop the deposit.

Kazakhaltyn Mining and Enrichment Co. of Stepnogorsk in Kazakhstan's Akmola region produced 1.5 t of gold in 2001, 50% more than in 2000. The company intends to produce 3-3.5 t of gold in 2002. It will produce about 1 tonne of gold by introducing, in mid-year, heap-leaching facilities at the Aksu and Bestyube mines. In that way, the mines can produce dore bullion on site. The company is still considering this project. It plans to borrow money from Kazakh banks and thinks the costs can be recouped in a year.

All of Kazakhaltyn's three gold mines - Aksu, Bestyube and Zholymbet - are working at full capacity. Three ore mills are being renovated.

Kazakhaltyn is owned by Askam Corp., which bought its assets in June 1999. The mines were idled for four years until 2000. Overall A+B+C1+C2 reserves at Kazakhaltyn mines amount to 116.7 t with average grades of 11 g/t Au. Probable resources are 25.55 Mt of ore at 18.3 g/t (465 t of gold).

In autumn 2001, the Bakyrchik Mining Venture produced its first 4.2 kg of gold at the Bakyrchik lode in East Kazakhstan. Ivanhoe Mines, which owns 70% of the joint venture, said that the company aimed initially to produce 20,000 oz/y. It is currently processing ore using the carbon-in-leach method. In the second quarter of 2002, the venture plans to start open-pit mining, and to process 2 Mt/y of ore at 3 g/t Au. Geologists indicate that the deposit contains much more gold than was previously thought. Ivanhoe specialists think, that in time, gold production may increase to 40,000-50,000 oz/y. The Bakyrchik field's reserves have been estimated at 10.5 Moz (326 t) of gold. The ore has an average grade of 6.9 g/t Au. The deposit has not been mined since 1996 because of problems processing the ore, which have a high content of arsenic and carbon.

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

Kazakhstan reduced output of chrome ores by 22% to 2.46 Mt in 2001. Production of manganese ore grew 17% to 1.40 Mt and manganese concentrate fell 3% to 646,700 t.

Kazakhstan's chrome industry includes the Donskoy chrome mining complex (the former Soviet Union's biggest chromite ore producer in the Aktyubinsk region), the Ferrokrom ferroalloy works in Aktyubinsk region and the Aksu ferroalloy works in Pavlodar region. The sector's plants are represented by Kazkhrom, the national chrome corporation. Kazkhrom's units produce all types of ferrochrome, metallic chrome, high-grade ferrosilicon, ferrosilicon chrome and low-phosphoric silicon-manganese. It sells ferroalloys to all the world's leading markets, including the US, Europe and Southeast Asia, particularly Japan, Korea and Thailand. The government

owns 31.37% of the shares in Kazkhrom and legal entities own 59.06%.

The Donskoi GOK produces chrome ores at Kempirsai field in Aktyubinsk region, the biggest field in the CIS and one of the biggest in the world. The field holds proven reserves of 317.6 Mt. Donskoi's Amlaz-Zhemchuzhina, Millionnoye, Pervomaiskoye and No.21 fields contain more than 330 Mt of chromite. Donskoi GOK plans to invest US\$24 million in 2002.

In December 2001, Donskoi GOK officially launched the first stage in development of what will eventually become the world's biggest chrome mine. Donskoi will initially mine 2 Mt/y of ore at the 10 Years of Independence mine. Projected capacity is 4 Mt/y, and the mine will operate for about a century. The ore has a chromium dioxide content of 50%, which is unrivalled anywhere in the world. More than US\$130 million have so far been invested in the mine, and another US\$35.4 million will be needed over the next five years. This completes the switch from open-pit to deep mining by Donskoi.

The biggest consumers of ore are the Ferrokhrom (Aktyubinsk region) and Aksu ferroalloy plants and Aktyubinsk chemical compounds plant, all in Kazakhstan; and some Russian ferroalloy plants. Kazakhstan produced 1.13 Mt of ferroalloys in 2001 (up 3%), 145,800 t of ferrosilicon (up 9%), and 79,800 t of ferrochrome silicon (up by 43%).

In 2001, Aksu Ferroalloy Works increased production of ferroalloys to 852,200 t - up 7.4% from 2000. Capital investment for the year amounted to US\$15.5 million. In December 2001, the company launched furnaces No.16 and No.1 after major repairs. These furnaces specialise in the production of manganese alloys. Initially, industrial capacity at Aksu Ferroalloy Works was oriented towards the production of silicon and chrome alloys but in 1993, to strengthen its market position, the company began to produce new products - manganese alloys, which are currently in demand on the world market. In order to

develop this type of production, the company started to work at the Tur low-phosphorus manganese deposit in the Karaganda region. In the three years since, the company has invested US\$9 million in developing its ore base and plans to spend another US\$22 million on this by 2004. At the moment, Aksu Ferroalloy Works accounts for 21% of manganese concentrate production in Kazakhstan.

Ferrokhrom, a ferroalloy works from Kazakhstan's Aktyubinsk region, was expected to reduce output by 16% in 2001 to 250,000 t owing to a drop in world prices. It produces high- medium- and low-carbon ferrochrome. It supplies its products to the US, Western Europe and Japan. In October 2001, it obtained international ISO-9002 quality certification.

In December 2001, Ferrokhrom commissioned a 37 MW steam-turbine costing US\$8 million. The company acquired Akturbo, its local electricity provider, for US\$28 million. The new turbine will cover 35% of the ferroalloy producer's electricity shortage. Until recently, it had relied heavily on Russian electricity suppliers. The unit cost of its products will now decrease by 30%.

Ferrokhrom has also started to recycle low-carbon ferrochrome slag under a contract with the Kazakh Government. The slag will be used mainly to produce lime-and-sand brick, but it may also be used to produce asphalt. Initially, the works will process up to 30,000 t/mth of slag, recovering about 500 t of metal-related byproducts. The works has 5 Mt of slag to treat by 2016. The slag has been stored since 1943 and the heaps are 13 m high and cover 38 ha.

Zhairemsky GOK, a mining complex in Kazakhstan's Karaganda region, was expected to sustain production of manganese concentrate in 2001, but in 2002, this will increase by 60% over current levels of 600,000 t to 1.0 Mt/y, as new deposits go on stream and production at existing deposits increases. Zhairemsky currently holds licences to 15 manganese deposits in Kazakhstan. Manganese ore



production should rise from 1.0 -1.2 Mt to 1.5 - 2.0 Mt/y. Zhairemsky has been delivering a US\$50-million investment programme for two years now. Nakosta AG, a Swiss firm, owns the controlling interest in the company.

Zhairemsky mines (by open pit) low-phosphoric iron, manganese and ferromanganese ore fields, and mono-barite. Operations include: the Zhairem Dalnezapadny mine (capacity 5.3 Mt/y of ore); Ushkatyn-III (capacity 2.5 Mt/y); the Zapadny mine (plus an associated railway depot, construction and installation depot and crushing and sorting complex); and the Saranskaya enrichment and experimental enrichment plant. Zhairemsky possesses known reserves of 19 Mt of lead-zinc ores and 1,000 Mt of manganese ore.

By 2004, Zhairemsky plans to launch a facility costing US\$176.3 million for producing ferromanganese. The complex would have four units: the existing Ushkatyn-III open pit and a new ore mill, agglomerating plant.

### Mineral Fuels

Kazakhstan is the former Soviet Union's third-biggest coal-producing country behind Russia and Ukraine. In 2001, it produced 76.3 Mt of coal, 5.4% more than in 2000. Output of brown coal increased by 8.5% to 2.7 Mt. Kazakh coal production is centred on the Karaganda and Ekibastuz basins. Karaganda, in north-central Kazakhstan, mines coking coals of high quality which are supplied to both domestic and Russian steel industries. Ekibastuz, in northern Kazakhstan, produces mainly coal for use in Kazakh and Russian power plants.

Total geological reserves of coal in Kazakhstan amount to over 113,000 Mt, with 85% of coal fields located in the northern and central regions of the country. According to a balance sheet of fuel and energy resources developed by the Economics and Trade Ministry's economic research institute, the republic plans to increase coal production to 97.7 Mt by 2005, of which

about 60 Mt will be used domestically and over 30 Mt will be exported.

Kazakhstan's Bogatyr Access Komir (BAK), a subsidiary of US company Access Industries Inc., is developing the Bogatyr and Severny coal fields in northern Kazakhstan, and slightly reduced output in 2001. Production dropped because the company lacked train cars to transport coal and reduced demand by Kazakh consumers. In 2001, BAK started to test a bucket-wheel excavation and conveyor transport system in conjunction with German specialists. Efforts continued to build and introduce weighing and proportioning equipment at the Udarnaya and Molodyozhnaya stations that serve the Severny mine. Also, the Bogatyr mine's coal complex is being electrified.

BAK plans to invest more than US\$500 million by 2015 to develop production. Most investment would be used to change the current technology used at the mine, including overburden removal. Some of the money will be used for environmental work. BAK planned to produce 35-36 Mt of coal in 2001, 40 Mt in 2002 and 50 Mt/y by 2005.

Eurasian Energy Corp. in Kazakhstan's Pavlodar region produced 16.46 Mt of coal in 2001, 2.9% more than in the same period last year. In the years to come, its Vostochny strip mine should achieve capacity of 20 Mt/y. The mine's biggest customers today are Aluminum of Kazakhstan, Karaganda Power and Akmola Heat and Power Plant.

Coal mines run by Ispat-Karmet, Kazakhstan's only steel mill, produced 9.7 Mt of coal in 2001, 18% more than in 2000. Productivity increased by 26% and production costs decreased by 13%. But these results reflect an effort to concentrate production at selected pits and to increase output at pit faces over the past two or three years. Five of the eight deep mines were in operation: Saranskaya, Abaiskaya, Kazakhstanstaya, Shakhtinskaya and Tentekskaya. Ispat-Karmet has invested US\$100 million in new equipment and overhauls at the coal mines.

### Oil and Gas

Kazakhstan currently has proven oil reserves of 2.200 Mt, with forecast reserves estimated at some 10,000 Mt. Natural gas reserves in the republic are estimated at 2,000 billion m<sup>3</sup>. This indicator may increase when Caspian reserves, which are currently unknown, are included.

The oil industry remains one of the main export industries in Kazakhstan. Steady demand for oil on world markets over the past few years and the industry's promise facilitated a constant increase in capital investment, both foreign and domestic. This enabled oil companies to increase production capacity and produce more oil.

Kazakhstan produced 35.67 Mt of oil last year, 16% more than in 2000. According to the statistics agency, the country produced 4.03 Mt of gas condensate (down 14% from 2000) and 513,000 t of associated gas (11% more). Natural gas production reached 8.47 billion m<sup>3</sup>. Kazakhstan exported 29.37 Mt of oil and gas condensate (12% more than in 2000) worth US\$3.98 billion (1% more).

Subsidiaries of state oil company Kazakhoil produced 6.57 Mt of oil and condensate, up 10.7% from 2000. Production by subsidiary Uzenmunaigaz totaled 4.17 Mt of oil (up 14.4%), including 32,770 t of condensate (down 16.4%) and Kazakhoil-Emba produced 2.4 Mt of oil (up 4.7%).

Nine enterprises with Kazakhoil participation produced 13.74 Mt of oil, up 20.6%. TengizChevroil produced most of this, or 12.48 Mt, up 18.9% from 2000. Other Kazakh oil producers extracted 19.66 Mt of oil (up 9.7%), including production by Mangistaumunaigaz of 4.41 Mt (up 5.7%), Aktobemunaigaz produced 3.26 Mt (up 25.9%), Karachaganak Petroleum Operating Co. produced 3.99 Mt (down 13.7%), and Hurricane Kumkol Ltd produced 3.62 Mt (up 8.5%).

Kazakhstan's weak export capacity is one of the factors that limits an increase in production. The low profitability of domestic

consumption of oil and the inconvenience of transporting it by other means makes increasing oil production less profitable and limits the rate of this increase. Kazakhstan has the Atyrau-Samara pipeline with capacity of up to 15 Mt to export oil to world markets, and the Caspian Pipeline Consortium (CPC) Tengiz-Novorossiisk pipeline that opened last autumn with first stage capacity of 28 Mt, which will be increased to 67 Mt/y.

The opening of the CPC system noticeably broadens the horizons for the Kazakh oil industry, despite the fact that most of the oil shipped through the pipeline this year will come from just one field - Tengiz. The Kazakh Ministry of Energy forecasts oil production in 2005 of 60.1 Mt and exports of 48.3 Mt, nearly one-and-a-half times more than in 2001. Analysts have said that Kazakhstan would produce 44.6 Mt of oil this year and export 34.7 Mt, produce 45.9 Mt and export 35.1 Mt in 2003, and 48.8 Mt and 37.6 Mt, respectively, in 2004.

### Bauxite and Alumina

Kazakhstan has the 17th largest bauxite reserves in the world, representing 1.1% of world reserves. The country has about 300 Mt of reserves, with a 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's bauxite production dropped by 2% to 3.67 Mt in 2001. Alumina output increased by 1.2% to 1.23 Mt.

Aluminum of Kazakhstan, the company that controls Kazakhstan's bauxite and alumina industry, produced 1.22 Mt of alumina in 2001, 1.1% more than the 1.21 Mt it achieved in 2000. The Krasnooktyabrskoye, Torgai and Severny bauxite mines in Kostanai region of northern Kazakhstan form the company's main ore base. This year, the company intends to raise production to an all-time high of 1.4 Mt.

The company drafted a far-reaching development programme last year, which calls for the construction of 46 new facilities at a

cost of US\$60 million to raise alumina production eventually to 1.5 Mt/y. At the beginning of 2002, the company commissioned the main new facility, the No.5 calcination furnace, costing US\$6.5 million. It also introduced the latest mining equipment at its Torgai and Red October bauxite mines.

A new aluminum smelter is planned in the northern region of Pavlodar, where Aluminum of Kazakhstan is based. A feasibility study states that the smelter will be able to produce 240,000 t/y of aluminum. The project will begin once the capital has been raised. Costs are anywhere between US\$600 million and US\$1.2 billion and the project will not begin for a few years yet. Aluminum of Kazakhstan reached understandings with several foreign companies on possible financing, but the issue has not yet been resolved.

### **Copper**

Kazakhstan produced 34.97 Mt of copper ore in 2001, 7% more than in 2000. Concentrate output increased by 8% to 1.80 Mt, with a copper content of 470,100 t (up 9%).

Kazakhmys Corp., Kazakhstan's biggest copper producer, produced 418,400 t of refined copper in 2001, up 6% from 394,700 t in 2000. Its interests include: mines and plants in the Zhezkazgan industrial district; the Balkhash Mining and Metals Combine (former Balkhashmys); combined heat and power plants in 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 or controls via its subsidiaries more than 30% of the shares in Kazakhmys. Vladimir Kim, the head of Kazakhmys, is now trustee of 24.65% of Kazakhmys on the government's behalf.

In 2001, Kazakhstan's Government offered 15% of Kazakhmys Corp. to investors. In November 2001, it sold 10.35% of the shares in Kazakhmys Corp. for US\$65.2 million on the

Kazakhstan Stock Exchange (KASE). A local company, TOO Future Capital, which is a professional stock market participant, bought the shares. In December 2001, the government withdrew a block of 4.65% of its Kazakhmys shares from sale on the stock market.

In December 2001, Kazakhmys Corp. announced changes in its sales policy. The company will now sell its products on global markets through the UK firm Apro Ltd, rather than through South Korea's Samsung, its biggest shareholder. Apro, set up in London, includes several foreign trading companies, including Samsung. The new sales scheme is intended to give Kazakhmys a flexible entry into international copper markets, including China.

Kazakhmys Corp. intends to raise production-related investments this year by 15% to US\$163 million. The company will continue to build and put on stream new mines, including the Nurkazgan Samarskoye gold-copper field in the Karaganda region, begun in the summer of 2001, and the Yubileino-Snegirikhinskoye polymetallic field in the east Kazakhstan region, begun in December 2001. This year, Kazakhmys intends to restart the Karagaily GOK in the Karaganda region, which it runs and started to renovate in 2001. Karagaily used to specialise in polymetallic and lead-zinc ores, but it has idled operations for five to six years. It is thought Karagaily will process the ore mined at the Nurkazgan deposit. Other plans for 2002 include, by the summer, starting the Artemevsky deep mine and, by the end of the year, a new 100,000 t/y zinc smelter costing about US\$70 million in Balkhash, Karaganda region.

### **Lead and Zinc**

In 2001, Kazakhstan produced 5.51 Mt of copper-zinc ore, up 8%, and 5.76 Mt of lead-zinc ore, up 2%, 76,900 t of lead concentrates (up 8%), 37,700 t of lead in lead concentrate (down 4%), 622,800 t of zinc concentrates (up 6%), and 344,300 t of zinc in zinc concentrate (up 7%).

In 2002, Kaztsink, Kazakhstan's national zinc corporation, plans to increase zinc production

by 9.5% over 2000 to 270,000 t, thanks to a series of upgrades. In August 2001, it finished renovating the Ust-Kamenogorsk zinc smelter at a cost of US\$11 million. This is able to produce 167,000 t of zinc per year. The costs will be recouped over three years, providing world zinc prices are on the company's side. The smelter will use the latest technology to air-cool solutions before these are smelted.

Kaztsink will also finish upgrading the Leninogorsk zinc works, which will have a capacity of 104,000 t/y. This smelter will use less water for production purposes, putting less pressure on purification facilities and improving the quality of the water itself. In all, Kaztsink plans to spend US\$110 million on upgrades last year.

Kaztsink plans to finish modernising the Zyryanovsk ore-processing plant in the East Kazakhstan region in 2002. The modernisation fell into two phases-1999 to 2000, and 2000 to 2002 - and was designed to increase capacity considerably. All obsolete equipment was replaced in the main division's section to process ores from the Maleyev deposit, and the concentrate thickener division. Some filtration equipment was also replaced. Germany's Engineering Dobersek GmbH has almost finished running in a hydrocyclone at the ore-milling section.

Kaztsink was set up at the beginning of 1997 through the merger of three major mine-and-mill complexes and metals plants: Ust-Kamenogorsk Lead-Zinc Combine, Leninogorsk Polymetals Combine, and Zyryanovsk Lead Combine. All are located in eastern Kazakhstan. The company also includes the Bukhtarma and Tekeli energy complexes, and the Tekeli lead-zinc combine. Switzerland's Glencore International AG holds the controlling stake in Kaztsink via its subsidiary Kazastur Zinc AG.

In September 2001, a Kazakh-Swiss joint venture Nova-Zinc, the company developing the Akzhal mine in Karaganda region, opened a heavy suspension plant. The Akzhal mine is

located in the Akchatau lead and zinc field. The US\$2.0 million plant took one year to build and will provide preliminary enrichment of zinc ore with metal content from 2%-3% to 5%-6%, to produce zinc concentrate.

### Uranium

Kazakhstan is home to 25% of the world's uranium reserves, 60% of these being located in the Suzak district of southern Kazakhstan. Kazakhstan mines about 3% of the world's uranium. Kazatomprom has said 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. Kazatomprom increased uranium mine output from 794 t in 1998 to more than 2,000 t in 2001. Kazatomprom controls Volkovgeologia (a geological organisation), Ulba Metallurgical Plant, Mine No.6 and the Steпноye and Central mines, all in southern Kazakhstan.

The Katco joint venture between Kazakhstan, France and Switzerland, is developing the Yuzhny and Tortkuduk sections of the Moinkum uranium field in southern Kazakhstan, and produced its first yellowcake. Moinkum is thought to contain 20,000-27,000 t of uranium. Katco, in which Kazatomprom owns 45%, France's Cogema 45% and Swiss-registered Zambezi 10%, will mine the uranium by an in situ acid-leach (ISL) method. The joint venture initially will have the capacity to produce 100 t/y of yellowcake, rising to 1,000 t in 2002. Cogema has so far invested US\$20 million in the project and plans shortly to invest another US\$7 million in an effort to raise production. But an additional US\$50 million is thought to be needed to achieve break even production.

In November 2001, Kazatomprom brought two new uranium deposits commercially on stream. One of them, South Moinkum, is in southern Kazakhstan and the other, South Karamrun, is in the Kyzylorda region. Kazatomprom also started to test an ISL unit



at the Akdala deposit, which is also in south Kazakhstan. Kazatomprom estimates that the South Karamrun, South Moinkum and Akdala deposits, between them, contain 53,000 t of uranium.

In December 2001, the Inkai joint venture between Kazakhstan and Canada's Cameco started to test-mine the Inkai uranium field, one of the world's biggest, in southern Kazakhstan. The section under tests had already yielded 35 t of uranium. Inkai will be an ISL operation. Mine construction is due to begin this year after a detailed feasibility study has been drafted, and the deposit should go fully on stream in 2004. International experts are conducting an environmental impact study. The deposit has been fully explored but the infrastructure is not yet in place. The joint venture, in which Kazatomprom owns 40% and Cameco 60% of the equity, was set up in

1998. It received its mineral development contract in 2000. The investment requirement over 25 years is estimated at US\$500 million to US\$600 million. Cameco, one of the world's biggest uranium companies, will raise the money. Inkai holds proven reserves of 280,000 t of uranium.

In January 2002, Kazakhstan, Russia and Kyrgyzstan registered a joint venture to prospect, extract and process uranium. The joint venture was set up by Kazatomprom (45% of the charter capita), the Russian company Atomredmetzoloto (45%), and the Karabalta mining complex in Kyrgyzstan (10%). Uranium extracted from the Zarechnoye deposit in southern Kazakhstan will be purified and concentrates will then be produced at Karabalta for Russian consumers. The deposit's reserves are estimated at 19,000 t of uranium.