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**November 2004**

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# Kazakhstan

*Kazakhstan is important to world energy markets because it has significant oil and natural gas reserves. As foreign investment pours into the country's oil and natural gas sectors, the landlocked Central Asian state is beginning to realize its enormous production potential. With sufficient export options, Kazakhstan could become a major world energy producer and exporter over the next decade.*

*Note: Information contained in this report is the best available as of November 2004 and is subject to change.*



## GENERAL BACKGROUND

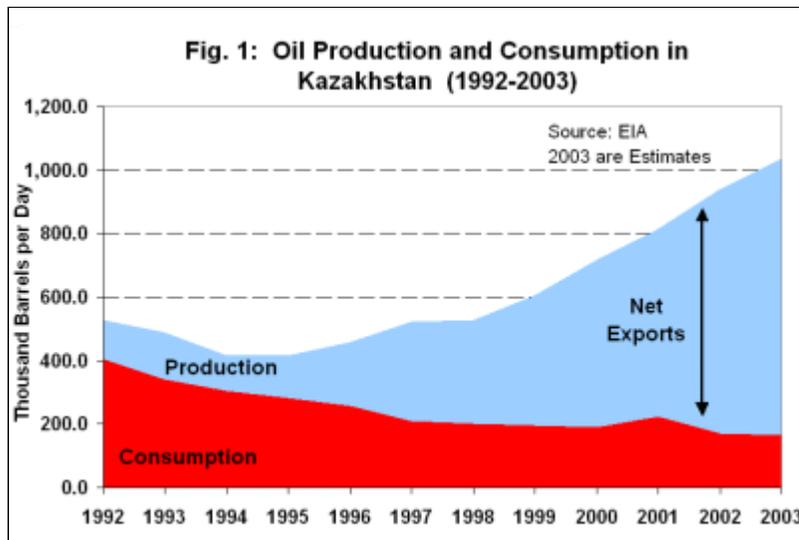
Kazakhstan has the Caspian Sea region's largest recoverable crude oil reserves, and its production accounts for approximately two-thirds of the roughly 1.5 million barrels per day (bbl/d) currently being produced in the region (including regional oil producers Kazakhstan, Azerbaijan, and Turkmenistan). Accordingly, Kazakhstan has Central Asia's largest economy. Kazakhstan's

nominal gross domestic product (GDP) grew by 20% in 2003, to \$29.0 billion, resulting in a per capita GDP of \$1,500 (roughly comparable to Guatemala and Jordan). This marked only the fifth consecutive year of significant economic growth in Kazakhstan since its independence in 1991.

Economic growth in recent years has been propelled by Kazakhstan's growing petroleum industry. The oil sector comprises roughly 55% of the country's state budget revenues. Several economic research efforts conducted in 2002 and 2003 highlighted the growing danger of possible over-reliance on the oil sector, with some analysts predicting that without more investment into the country's non-oil sectors, Kazakhstan's economic capacity will be strained by 2007, thus stifling growth in the next decade. In an effort to reduce Kazakhstan's exposure to price fluctuations for energy and commodities exports, the government created the National Fund of Kazakhstan. As of the end of 2003, the National Fund held \$3.6 billion.

Kazakhstan's President, Nursultan Nazarbaev, has been involved in Kazakhstan's national politics since 1977 when he served as Secretary of the Central Committee of the Communist Party of Kazakhstan. In April 1990, he became interim president of the newly independent Republic of

Kazakhstan, and was later elected to the post in the country's first national elections, held in December 1991. Nazarbaev was re-elected in 1999 (after a 1995 referendum extended his term) and will be up for reelection again in 2006. The Kazakh executive branch was re-shuffled in June 2003 when then Prime Minister Imanghaliy Tasmaghambetov resigned from his position. A new Prime Minister, Daniyal Akmetov, has been appointed along with a new cabinet, including numerous holdovers from the previous administration. Parliamentary elections were held in 2004, during which the party led by Dariga Nazarbaev, the president's daughter, won 11% of the vote. Opposition parties have alleged authorities committed election fraud, and one month after the elections were over, the speaker of the parliament resigned because he accused the election of being "manipulated."



## OIL

Kazakhstan sits near the northeast portion of the Caspian Sea and claims most of the Sea's biggest known oil fields. Kazakhstan's combined onshore and offshore proven hydrocarbon reserves have been estimated between 9 and 17.6 billion barrels (comparable to OPEC members Algeria on the low end and Qatar on the high end). The country is no longer a minor world oil exporter as it was during the late 1990s, and it is poised to become an even more significant player in world oil markets over the next

decade.

Kazakhstan produced approximately 1.0 million barrels per day (bbl/d) of oil in 2003 and consumed just 165,000 bbl/d, resulting in net exports of 865,000 bbl/d. Analysts, press reports, and the Kazakh government estimate summer 2004 production at around 1.19-1.28 million bbl/day. Markets for exported Kazakh oil are growing rapidly, and current infrastructure helps deliver oil to world markets at the Black Sea (via Russia) and at the Persian Gulf (via swaps with Iran), as well as some additional traffic northward to Russia via pipeline and rail.

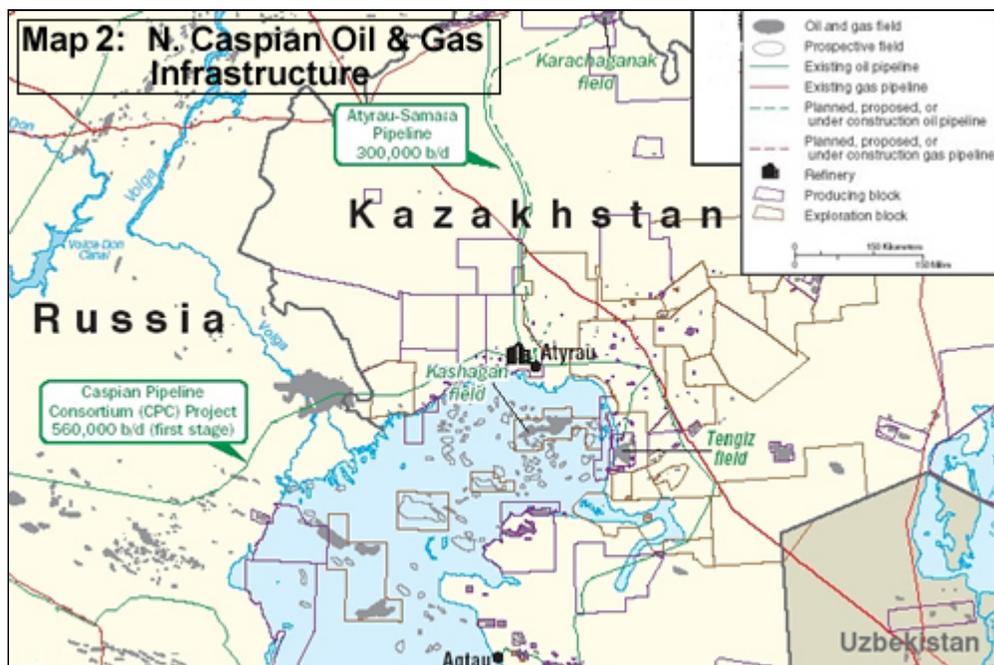
Between 1999 and 2003, Kazakhstan's oil production grew year-on-year by approximately 14%, resulting in a doubling (roughly) of oil production since independence (see Fig 1). Conversely, other major economic indicators declined markedly during the decade since independence (including GDP, and the production and consumption of natural gas, coal, and electricity--see below). Increased oil production has been the result of an influx of foreign investment into Kazakhstan's oil sector. [International projects](#) have taken the form of joint ventures with Kazmunaigaz (formerly Kazakhoil), the national oil company, as well as production-sharing agreements (PSAs), and exploration/field concessions. Independent analysts expect production levels of 4 million bbl/d, and the Kazakh government estimates production levels of around 8 million bbl/d by 2020. Most of this growth will come from three enormous fields: [Tengiz](#), [Karachaganak](#), and [Kashagan](#).

In June 2003, the government of Kazakhstan announced a new Caspian Sea development program, which called for new offshore blocks to be auctioned beginning in 2004. However, in the last year,

the government has introduced new restrictions to new production sharing agreements (PSAs). First, the government-owned oil and gas company KazMunaiGaz will own at least half of any PSA and act as contractor in all offshore PSAs to be concluded in Kazakhstan. Also, the introduction of a new tax structure in January 2004 included a so-called "rent tax" on exports, a progressive tax that increases as oil prices grow. The new structure also includes an excess profit tax and a minimal governmental share of oil to be produced under new PSAs.

### Tengiz

The Tengiz field is located in the swamplands along the northeast shores of the Caspian Sea (see Map 2). Recoverable crude oil reserves have been estimated at 6-9 billion barrels by consortium member [ChevronTexaco](#). Tengiz has been developed by the Tengizchevroil (TCO) joint venture (ChevronTexaco 50%, ExxonMobil 25%, Kazmunaigaz 20%, LukArco 5%) since 1993, and in 2002, the consortium produced 290,000 bbl/d, or approximately 35% of Kazakhstan's daily production. In January 2003, after contentious negotiations with the government of Kazakhstan, the TCO consortium members initiated a \$3 billion expansion project designed to boost production to approximately 450,000 bbl/d by 2006. According to ChevronTexaco, Tengiz could potentially produce 700,000 bbl/d by the end of the decade. Approximately 271,000 bbl/d were sent from the Tengiz field through the Caspian Pipeline Consortium (CPC) project to the Russian Black Sea port of Novorossiysk (see Map 2).



### Karachaganak

The Karachaganak oil and gas/condensate field is located onshore, in northern Kazakhstan, and near the border with Russia's Orenburg field (see map). Karachaganak is being developed by the [Karachaganak Integrated Organization \(KIO\)](#), a consortium led by Britain's [British Gas](#) (BG) and ENI (Italy). According to

BG, the field holds reserves of more than 2.4 billion barrels of oil and 16 Tcf of gas, recoverable over the 40-year life of the project. August 2004 oil and condensate production from Karachaganak averaged 210,000 bbl/d, representing 16% of total Kazakh production. The consortium members aim to increase output from Karachaganak to 265,000 bbl/d by the end of 2004, and to 500,000 bbl/d by 2010.

In previous years, almost all of Karachaganak's crude oil production was processed at Russian facilities associated with the Orenburg field located just across the border. In April 2003, a pipeline spur southward to Atyrau was completed that connects the Karachaganak field to Kazakhstan's primary export pipeline, the Caspian Pipeline Consortium (CPC) project. The new connection has enabled increased exports (50,000 bbl/d in July 2004) from Karachaganak, and has reduced the consortium members' dependence on Russian buyers.

## **Kashagan**

The Kashagan field is located off the northern shore of the Caspian Sea, near the city of Atyrau (see Map 1). Although the field is still being appraised, in June 2002 the consortium operating the field, the [Agip Kazakhstan North Caspian Operating Company--Agip KCO \(formerly known as OKIOC\)](#), estimated the field's recoverable reserves at 7-9 billion barrels of oil equivalent, with further potential totaling 9 to 13 billion barrels using secondary recovery techniques (gas injection, for example). Assuming proven crude oil reserves in the neighborhood of 8 billion barrels, the Kashagan field alone would hold roughly the same amount of oil as Brazil, South America's second largest oil producer. Oil production is not expected to begin until 2008 at initial levels of 75,000 bbl/d, with subsequent levels of around 450,000 bbl/d.

Costing approximately \$29 billion to develop, the Kashagan field has presented particular challenges for the developers. Kashagan contains a high proportion of gas under very high pressure, the oil contains large quantities of sulfur, and the offshore platforms require construction that can withstand the extreme weather fluctuations in the northern Caspian Sea area. In addition to the technological issues described above and a new tax structure introduced by the government this year, two other issues remain unresolved. Caspian ownership rights and export routes threaten Kashagan and Kazakhstan's other fields from reaching their full oil-producing potential. For several months, the Kazakh government has expressed interest in buying British Gas (BG)'s 16.7% share of the field. A series of Fall 2004 meetings between the consortium and interested buyers have ended without a final agreement, but Kazakh officials expect a market price for the share will be offered in the near future.

For a detailed map of the Caspian Region's oil and gas infrastructure please see [here](#).

## **OIL EXPORTS**

For the first eight months of 2004, Kazakhstan exported an average of 1.0 million bbl/d in three directions: northward (via the Russian pipeline system and rail network); westward (via the Caspian Pipeline Consortium Project and barge to Azerbaijan); and southward (via swaps with Iran). In sum, approximately 21% of total Kazakh oil exports in 2003 were sent via rail or sea, a decrease from 32% in 2002. Connections to ports on the Black Sea and the Persian Gulf have allowed some Kazakh oil (or proxy oil from Iran) to be traded on the world market. Efforts are underway to expand the country's export infrastructure (especially to the east) over the next decade as Kazakhstan's oil production increases. Starting in January 2004, Kazakhstan started taxing crude oil exports for the first time. Now, oil producers must pay taxes on oil exports in increasing magnitude as the world oil price fluctuates. The tax ranges from 1% when oil prices are around \$19/bbl to 33% if prices rise as high as \$40/bbl or more. All exporters except those in fixed price production-sharing agreements are liable to pay the tax.

## **Caspian Pipeline Consortium (CPC)**

The 980 mile long CPC connects Kazakhstan's Caspian Sea area oil deposits with Russia's Black Sea port of Novorossiysk (see BG [project](#) page). The governments of Russia, Kazakhstan, and Oman developed the CPC project in conjunction with a consortium of international oil companies. It is actually an extension of the existing oil transit infrastructure surrounding the Caspian Sea. Newly constructed components of the line run from the Russian town of Komsomolskaya straight westward to Novorossiysk. The pipeline is supplied with Kazakh oil through the Soviet-era links surrounding the Sea, which the consortium members have refurbished. The first crude oil was loaded onto a tanker in Novorossiysk on October 15, 2001, and the pipeline was officially opened on November 27, 2001. Initial capacity of the CPC pipeline is 560,000 bbl/d, with plans to increase capacity to 1.45 million bbl/d by 2008.

Since October 2001, the CPC has transported roughly 250 million barrels, or roughly one-third of Kazakhstan's exports. Most of this oil came from the Tengiz field. With the completion of the two pipeline spurs from Kenkiyak and Karachaganak to the CPC at Atyrau (see Map 1), CPC transport levels have increased from around 310,000 bbl/d in 2003 (an increase of 33% over 2002) to 500,000 bbl/day in September 2004.

### **Atyrau-Samara**

Kazakhstan's other major oil export pipeline, from Atyrau to Samara, is a northbound link to the Russian distribution system. Before the completion of the CPC pipeline at the end of 2001, Kazakhstan exported almost all of its oil through this system. But, since Kazakhstan desired more independence from the Russian transit systems, it favored the development of transport alternatives. Still, in June 2002, Kazakhstan and Russia signed a 15-year oil transit agreement under which Kazakhstan will export 340,000 bbl/d of oil annually via the Russian pipeline system. Russia's trade ministry also pledged to increase the capacity of the line to around 500,00 bbl/day. As the CPC project grows with Kazakh production, absolute volumes through Atyrau-Samara are expected to grow, but this pipeline will become relatively less significant.

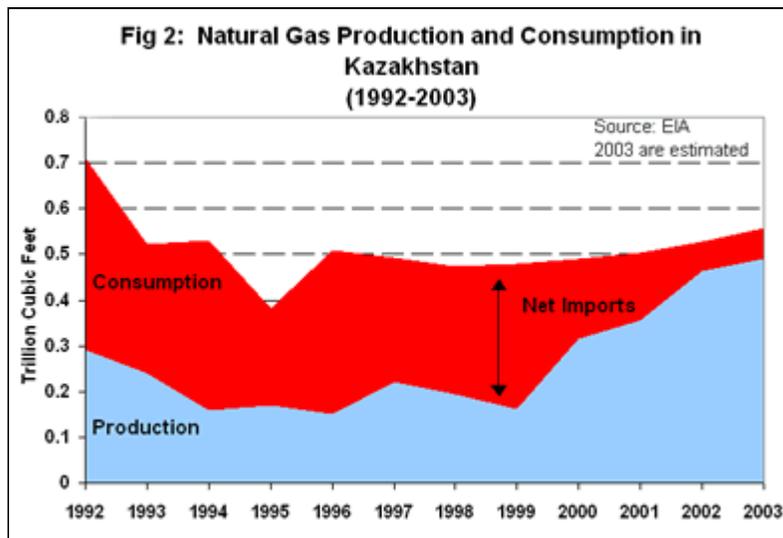
### **Kazakhstan-China Pipeline**

The Kazakhstan-China pipeline will export Caspian oil to serve China's growing energy needs. Construction began on the second segment of the Kazakhstan-China pipeline in late September 2004. The 613-mile-long pipeline from Atasu, in northwestern Kazakhstan, to Alataw Pass in China's northwestern Xinjiang region will be completed in December 2005. The second stage of this project will have an estimated cost of \$850 million. The first section of the Kazakhstan-China pipeline was completed in 2003 and runs across Western Kazakhstan from the oil fields of the Aktobe region to the oil hub Atyrau. The pipeline is expected to have an initial capacity of around 200,000 bbl/d, which will eventually be expanded to 400,000 bbl/day. The Kazakh and Chinese national oil companies are jointly financing the project, yet the Chinese oil company will be responsible for filling the pipeline from its oilfields in Kazakhstan once it is finished.

In addition to the CPC and Atyrau-Samara, Kazakhstan exports via swaps to Iran, by rail to Russia, and across the Caspian by barge. The swap agreement between Iran and Kazakhstan entails approximately 30,000 bbl/d, and the agreement also includes immediate plans to build two oil terminals in Iran. Another export route reportedly under consideration is a subsea trans-Caspian pipeline connecting to the Baku-Tbilisi-Ceyhan (BTC) project. However, in June 2004 Kazakh president Nazarbaev reiterated he preferred an oil export pipeline to the Persian Gulf through Iran over a connection to BTC, through China, or through Russia.

### **Downstream/Refining**

Kazakhstan has three major oil refineries supplying the northern region (at Pavlodar), western region (at Atyrau), and southern region (at Shymkent), with total refining capacity of 427,000 bbl/d. The refinery at Pavlodar is supplied mainly by a crude oil pipeline from western Siberia (since Russian reserves are well placed geographically to serve that refinery); the Atyrau refinery runs solely on domestic crude from northwest Kazakhstan; and the Shymkent refinery currently uses oil from Kazakh fields at Kumkol, Aktyubinsk, and Makatinsk, although it is linked by pipeline to Russia. Marubeni Corporation (Japan) began reconstructing the Atyrau refinery in 2004, and it should complete most repairs by early 2005. Finally, TengizChevroil, the Chevron Texaco-operated venture developing the Tengiz gas field announced in early 2004 that it had started construction of a new gas refinery as part of its "second generation" project that is due to go on line in 2006. Eventually, the project will double refinery production to 500,000 bbl/d from around 255,000 bbl/day in 2003.



cubic

feet (Tcf) (comparable to Canada and Kuwait and ranking it in the top 20 countries in the world), the country is currently a net natural gas importer. In 2003, according to industry sources, Kazakhstan produced roughly 490 billion cubic feet (Bcf) and consumed 560 Bcf, resulting in net imports of approximately 70 Bcf. Press reports indicate that production in late 2004 and 2005 should be approximately 515 bcf/year. Most of Kazakhstan's natural gas imports come from Uzbekistan and go to the south of the country.

Natural gas production in Kazakhstan has increased significantly since 1999 (see Fig. 2). In August 1999, the Kazakh government passed a law requiring subsoil users (such as oil companies) to include natural gas utilization projects in their development plans. As a result, natural gas production has been on a steady increase since 1999, and by 2000 it eclipsed its pre-independence production levels. According to the 15-year strategy of the Kazakh Ministry for Energy and Mineral Resources, the country plans to increase its natural gas production to 1.2 Tcf by 2005, to 1.66 Tcf by 2010, and to 1.84 Tcf by 2015.

Most of Kazakhstan's natural gas reserves are located in the west of the country, with roughly 25% of proven reserves situated in the Karachaganak field. This oil and gas condensate field reportedly has proven natural gas reserves of 16-20 Tcf. Press reports indicate that by September 2004 the field had already produced roughly 250 Bcf of natural gas since the field's inception, representing almost half of the country's total gas production during that same period. The consortium developing Karachaganak expects peak production by 2010 at around 1 Tcf/year. Because of Kazakhstan's divided distribution network, Karachaganak's natural gas is exported northward to Russia's Orenburg processing plant, as opposed to being delivered to Kazakh consumers in the south. (see below). Although a proposal exists to build an on-site gas processing facility for the field, in August 2004, Orenburg plant operators announced a pledge to increase processing capability to around 280 bcf of gas by 2005. Efforts are also underway to export Karachaganak's gas condensate and other liquids through the CPC pipeline system. The Karachaganak Integrated Organization, which is developing the field, has thus far focused its efforts primarily on extraction of the field's liquid condensate reserves. Several of the country's other oil fields, Tengiz and Kashagan for example, also contain associated natural gas.

Another important natural gas field, Amangeldy, is situated in the south of the country, near Zhambul. Exploratory drilling in 2001 indicated reserves of up to 1.8 Tcf. The field is being developed by Kazmunaigas in conjunction with Repsol-YPF (Spain), and the partners expect initial production of roughly 35 Bcf/y after initial developments. The Amangeldy fields that have been

developed are producing approximately 880 million cubic feet per year (mmcf/y). Because of the field's key location in the energy-strapped south, the government of Kazakhstan has expressed its hope that Amangeldy will allow the country to cease import dependence in the near future.

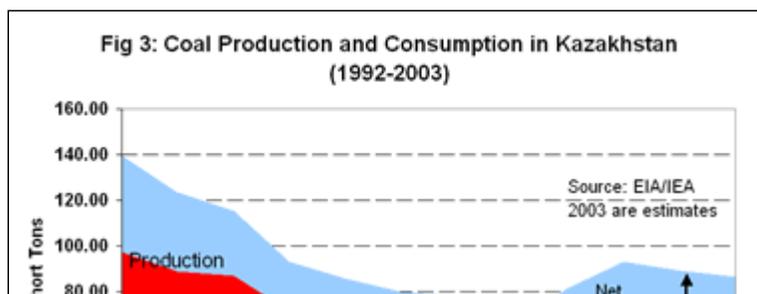
### Natural Gas Distribution

Kazakhstan has two separate domestic natural gas distribution networks, one in the west which services the country's producing natural gas fields, and one in the south which mainly delivers imported natural gas to the southern consuming regions. The lack of internal pipelines connecting Kazakhstan's natural gas-producing areas to the country's industrial belt (between Almaty and Shymkent) has hampered the development of natural gas resources; however, the development of the Amangeldy gas field would help Kazakhstan's southern region cease importing Uzbek gas. Kazmunaigaz, the state oil and natural gas company operates Kazakhstan's main natural gas pipelines.

In the north, Kazakhstan is developing its ability to export its natural gas through Russia's natural gas pipeline system. In 2002, natural gas from the Karachaganak field was sent northward to Russia's Orenburg gas processing plant; however, efforts are currently underway to expand that link and boost export capacity. Russia and Kazakhstan have agreed on preliminary export schedules for 2003 and 2004, which call for 212 Bcf and 247 Bcf respectively to be sent northward to the Orenburg plant for processing. Some of the gas will then be routed for marketing in the Russian system and some will be sent back to Kazakhstan. In July 2002, Kazmunaigaz, working in conjunction with Gazprom (Russia) under the joint venture KazRosGas, began a \$500 million program to upgrade Kazakhstan's natural gas pipeline network. The program, which is being developed with the financial backing of several international banks, will increase Kazakhstan's export capacity in the north, beginning in 2005.

Southern Kazakhstan receives its natural gas supplies from Uzbekistan via the Tashkent-Bishkek-Almaty pipeline. This pipeline snakes through Uzbekistan before reaching Shymkent, crosses [Kyrgyzstan](#), and terminates in Almaty. Dependence on imported natural gas for its southern regions has at times been problematic since erratic pricing and supplies from Uzbekistan, combined with illegal tapping of the pipeline by Kyrgyzstan, have resulted in significant supply disruptions to Almaty in the middle of the heating season. As a result, Kazakhstan is determined to end its dependence on imported supplies for its southern regions. Although Kazakhstan has considered the construction of an internal north-south pipeline, thereby alleviating import dependency, the prohibitive cost (at least \$1 billion) of such a pipeline has delayed any decision to proceed with the project.

Since Kazakh natural gas is a potential competitor with Russian natural gas, several new [natural gas export pipelines from the Caspian Sea region](#) also are in development or under consideration, potentially opening up new markets for Kazakh natural gas. In the meantime, Kazakhstan serves as an important natural gas transit center for Turkmen and Uzbek natural gas that is piped to Russia and beyond.



### COAL

Kazakhstan has Central Asia's largest recoverable coal reserves, with 37.5 billion short tons of mostly anthracitic and bituminous coal. Kazakhstan produced 86 million short tons (Mmst) in 2003, while consuming 58 Mmst, resulting in net exports of 28 Mmst.

Russia is the largest importer of

Kazakh coal, followed by Ukraine.

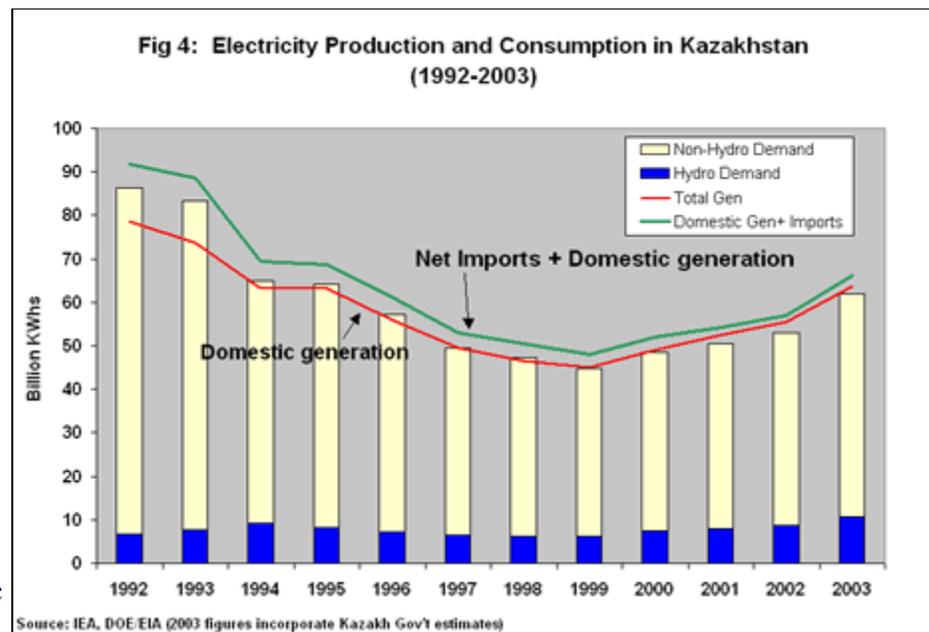
Coal production in Kazakhstan, which was the Soviet Union's third-largest producer behind Russia and Ukraine, has fallen by roughly 35% since independence. EIA data show a modest upswing in coal production in 2000 and 2001 (see graph); however, 2002 and 2003 estimates indicate that output fell again over the past two years. According to the Kazakh Ministry of Energy and Natural Resources, the country planned to increase coal production in 2003 by approximately 5% over 2002 levels, with a further boost of 25% expected by 2010.

Kazakhstan's largest coal producer, [Bogatyr Access Komir](#), which accounts for roughly 35% of the country's coal output, is a subsidiary of Access Industries Incorporated (U.S.A.). Bogatyr Access Komir develops northern Kazakhstan's Bogatyr and Severny coal fields and is the country's largest exporter to Russia. Russian firms are also stake holders in the Kazakh coal industry and roughly 16 Mmst are transited annually from Kazakhstan northward via rail to power plants in southern Russia.

Since independence, Kazakh coal consumption has fallen from 97 Mmst in 1992 to 58 Mmst in 2003 (see graph). As a percentage of total energy consumption, coal accounted for 52% in 2002, up slightly from 50% in 1992. The majority of Kazakhstan's electric generating plants are coal-fired, including the country's largest power generator, Ekibastuz No. 1, located in north-central Kazakhstan.

## ELECTRICITY

Kazakhstan has 71 power plants, including five hydroelectric power stations, giving the country an overall installed generating capacity of 17 gigawatts (GW), 80% of which are coal fired, and 12% of which are hydroelectric. Most of the country's power generation comes from coal-fired plants located in the northern coal producing regions. Kazakhstan's hydroelectric facilities are located primarily along the Irtysh river, which flows from China across northeast Kazakhstan.



The production and consumption of electricity in Kazakhstan fell significantly following independence. However, robust economic growth since 2000 has helped boost generation to 63.7 billion kilowatthours (Bkwh) in 2003 and consumption to 62 Bkwh. This marked the first time since independence that Kazakhstan's native electricity generation exceeded its consumption (see Fig. 4). Transmission issues, however, necessitate that Kazakhstan continue to import electricity in the southern part of the country, as the country's northern generating units are connected to a separate transmission grid (see below).

The decade-long decline in Kazakh electricity consumption has come primarily at the expense of thermal power, while generation at hydroelectric facilities has remained constant (see Fig 4). As a result, hydropower now accounts for almost 20% of Kazakhstan's electricity consumption, more than twice its percentage in 1992, making the Irtysh River, which starts upstream in China's Altai mountains, increasingly important as a source of hydropower. Kazakhstan and China have held joint negotiations on management of the Irtysh River since 1999.

Although Kazakhstan technically generates enough electricity to meet its demand, the country has suffered from frequent power shortages since 1992 due to the sector's deteriorating infrastructure. Kazakhstan incurs large energy losses during transmission and distribution over its 285,000 miles of distribution lines. According to Kazakh Minister of Energy and Natural Resources Vladimir Shkolnik, an average of 15% of the electricity generated in Kazakhstan is lost before it reaches consumers due to the widespread deterioration of Kazakhstan's power infrastructure.

### **Transmission and Distribution**

Kazakhstan's electricity transmission and distribution system is divided into three networks. The two in the north are connected to Russia, and the one in the south is connected to the Unified Energy System of Central Asia. However, these transmission systems are not yet sufficiently interconnected, and they are still owned by the government. The northern networks, which service the coal-fired power plants that make up most of the country's installed capacity, have recently begun exporting electricity to Russia. In January 2003, the Ekibastuz Power Plant No. 2, located in the northern Pavlodar region, began exporting electricity northward. Conversely, the southern network, which is connected to the Unified Energy System of Central Asia, is forced to import electricity from neighboring Kyrgyzstan and Uzbekistan because of its lack of installed generating capacity.

Because Kazakhstan's southern regions are largely dependent on expensive imported electricity supplies, the Kazakhstan Electricity Grid Operating Company (**KEGOC**) has been considering the construction of a second North-South power line to complement the existing, 600-MW-capacity line, making it possible to supply the country's southern regions fully with energy generated in Kazakhstan. The line would cost an estimated \$300 million to build. The country also has other plans for modernizing its electricity sector. In 2003, KEGOC began investing approximately \$73 million to upgrade the country's high-voltage transmission lines, upgrade automated substations and purchase new distribution equipment. These investments are part of a bigger \$258.4 million upgrading project which is being planned with financial assistance from the World Bank and European Bank for Reconstruction and Development who have provided loan assistance for the last 4 years. The loan guarantees extend for one more year.

### **Industry Organization: Deregulation Status**

Kazakhstan has privatized all of its power plants, but the sale of regional electricity distribution companies has proceeded more slowly. Also, the majority of the distribution networks have not yet been privatized. KEGOC has granted management rights to several private companies, but KEGOC maintains control over high-voltage transmission lines, substations, and the central dispatching apparatus. Ninety percent of electricity sales are made in the bilateral forward market, and there is also a day-ahead spot market and a real-time balancing market. Generators and load submit schedules for balancing energy three hours ahead and the system operator controls the settlement.

Non-payment of electricity bills, an inadequate collection system, and a lack of market-based transportation tariffs are all obstacles to further large-scale investment in Kazakhstan's transmission and distribution sector. Although the government plans to further privatize the grid, the likely success of these utilities' privatization remains questionable. For example, in 2000 Tractebel

(Belgium), the owner of the Almaty electricity utility, left the country and resold the utility to the state gas pipeline operator. After four years, Tractebel had turned the Almaty electricity company around by cutting delinquency rates of more than 75% down to just 12%. However, following the April 1999 monetary devaluation, the government froze electricity prices to control inflation after previously pledging to raise rates. The Kazakh regulators complained that the company failed to meet certain investment commitments and employed corrupt business practices; Tractebel, in turn, claimed that the Kazakh government hindered the grid's development by not allowing sufficient rate recovery. The resulting dispute with Tractebel led the Belgian company to leave Kazakhstan.

Under the former Soviet Union, Kazakhstan utilized a system of fixed electricity tariffs that were unrelated to production costs and investment needs. Kazakhstan's State Anti-Monopoly Committee is working to bring electricity tariffs in line with those in other countries and to allow the market to determine transmission tariffs. Effective July 1, 2001, KEGOC increased electricity transmission rates across the country by an average of 23.7%. Rates have continued to increase during 2003 and 2004, forcing some manufacturers to halt production.

### **Nuclear Power**

Kazakhstan's sole nuclear power plant, the 90 MW Mangyshlak Nuclear Power Plant at Aqtau, has been shut down since April 1999. It was sold in April 2003 by the government of Kazakhstan to Kazatomprom, the national nuclear power company. Kazatomprom, which has exclusive rights to the production and sale of Kazakh plutonium, plans to maintain and run the plant's thermal generators and water distribution facilities for regional consumption.

According to press reports, the Kazakh government is still considering the construction of a new 1,500 MW nuclear plant in the southeast, near Lake Balkash. This project was first announced in 1998, but later shelved in September 2002 because of safety concerns and public opposition to the project. However, due to rising demand in the south, support for the construction of the plant has received new momentum. It is expected that a tender for the the power plant will be issued by 2007 and that the plant will be operational by 2012-2015.

### **COUNTRY OVERVIEW**

**President:** Nursultan Nazarbaev (re-elected to a seven-year term on January 10, 1999)

**Prime Minister:** Daniyal Akmetov (since June 2003)

**Independence:** December 16, 1991; National holiday: Republic Day, October 25, 1990 (date on which Kazakhstan declared its sovereignty)

**Population (7/04E):** 15.1 million

**Location:** Central Asia, bordering the Caspian Sea, Russia, Turkmenistan, Uzbekistan, Kyrgyzstan, and China

**Size:** 1,052,100 sq. miles (slightly less than four times the size of Texas)

**Major Cities:** Almaty; Astana (capital, moved from Almaty in December 1998); Karaganda; Shymkent

**Languages:** Kazakh (Qazaq, state language) 40%, Russian (official, used in everyday business) 66%

### **ECONOMIC OVERVIEW**

**Minister of Finance:** Yerbolat Dosayev

**Minister of Economy & Budget Planning:** Kairat Kelimbetov

**Currency:** Tenge

**Market Exchange Rate (10/04/2004):** US \$1=139.1 Tenge (KZT)

**Nominal Gross Domestic Product (GDP) (2003E):** \$28.5 billion, **(2004E):** \$38.7 billion

**Real GDP Growth Rate (2003E):** 9.2%; **(2004E):** 8.44%

**Inflation Rate (Change in Consumer Prices) (2003E):** 6.8%; **(2004E):** 5-7%.

**Unemployment Rate (2003E):** 8.7%

**Current Account Balance (2003E):** -\$69 million; **(2004E):** -\$392 billion

**Major Trading Partners:** Russia, U.S., Uzbekistan, China, Turkey, U.K., Germany, Ukraine,

**Merchandise Exports (2003E):** \$13.2 billion; **(2004E):** \$17.8 billion

**Merchandise Imports (2003E):** \$9.0 billion; **(2004E):** \$12.1 billion

**Merchandise Trade Balance (2003E):** \$4.2 billion; **(2004E):** \$5.7 billion

**Major Exports:** oil, ferrous and nonferrous metals, machinery, chemicals, grain, wool, meat, coal

**Major Imports:** machinery and parts, industrial materials, oil and gas, vehicles

**External Debt (2003E):** \$22.8 billion, **(2004E):** \$24.1 billion

## ENERGY OVERVIEW

**Minister of Energy & Natural Resources:** Vladimir Shkolnik

**Chairman, Kazmunaigaz (National Oil & Natural Gas Company):** Lyazzat Kiinov

**Proven Oil Reserves (1/1/04):** 9-17.6 billion barrels

**Oil Production (2003E):** 1.0 million bbl/d; **(2004):** 1.2 million bbl/d

**Oil Consumption (2003E):** 165,000 bbl/d **(2004):** 170,000 bbl/d

**Net Oil Exports (2003E):** 865,000 bbl/d, 879,000 bbl/d (according to Kazakh government statistics agency)

**Crude Oil Refining Capacity (1/1/04E):** 427,000 bbl/d

**Natural Gas Reserves (1/1/04E):** 67-70 trillion cubic feet (BP)

**Natural Gas Production (2003E):** 490 billion cubic feet (Bcf), (CIS and East European Energy Factbook)

**Natural Gas Consumption (2003E):** 560 Bcf, (CIS and East European Energy Factbook)

**Net Natural Gas Imports (2003E):** 67 Bcf

**Coal Reserves (2003E):** 37.5 billion short tons

**Coal Production (2003E):** 86.5 million short tons (Mmst), (IEA)

**Coal Consumption (2003E):** 58.3 Mmst, (IEA)

**Electric Generation Capacity (2003):** 17 gigawatts (GW) (80% thermal, 12% hydroelectric)

**Electricity Generation (2003E):** 63.7 billion kilowatt-hours (Bkwh)

**Electricity Consumption (2003E):** 62.0 Bkwh

## ENVIRONMENTAL OVERVIEW

**Minister of Environmental Protection:** Aytkul Samakoval

**Total Energy Consumption (2002E):** 2.09 quadrillion Btu\* (0.51% of world total energy consumption)

**Energy-Related Carbon Dioxide Emissions (2002E):** 152.9 million metric tons of carbon dioxide (0.6% of world total carbon dioxide emissions)

**Per Capita Energy Consumption (2002E):** 134.9 million Btu (vs. U.S. value of 339.1 million Btu)

**Per Capita Carbon Dioxide Emissions (2002E):** 9.88 metric tons of carbon dioxide (vs. U.S. value of 19.97 metric tons of carbon dioxide)

**Energy Intensity (2002E):** 87,158 Btu/ \$1995 (vs. U.S. value of 10,575 Btu/ \$1995)\*\*

**Carbon Dioxide Intensity (2002E):** 6.39 metric tons of carbon dioxide/thousand \$1995 (vs. U.S. value of 0.62 metric tons/thousand \$1995)\*\*

**Fuel Share of Energy Consumption (2002E):** Coal (52.2%), Natural Gas (26.3%), Oil (15.9%)

**Fuel Share of Carbon Dioxide Emissions (2002E):** Coal (53.4%), Oil (23.8%), Natural Gas (19.1%)

**Status in Climate Change Negotiations:** Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified May 17th, 1995). Signatory to the Kyoto Protocol (March 12th, 1999).

**Major Environmental Issues:** Radioactive or toxic chemical sites associated with its former defense industries and test ranges are found throughout the country and pose health risks for humans and animals; industrial pollution is severe in some cities; because the two main rivers which flowed into the Aral Sea have been diverted for irrigation, it is drying up and leaving behind a harmful layer of chemical pesticides and natural salts; these substances are then picked up by the wind and blown into noxious dust storms; pollution in the Caspian Sea; soil pollution from overuse of agricultural chemicals and salination from poor infrastructure and wasteful irrigation practices

**Major International Environmental Agreements:** A party to Conventions on Air Pollution, Biodiversity, Climate Change, Desertification, Endangered Species, Ozone Layer Protection, Ship Pollution. *Signed, but not ratified:* Climate Change.

\* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar and wind electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

\*\*GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

## ENERGY INDUSTRY

**Organization:** Kazmunaigaz (vertically-integrated state oil and natural gas company, created in February 2002 by combining state-run Kazakhoil (oil) and TransNefteGaz (oil and natural gas transport, made up of KazTransOil and KazTransGaz)); Kazakhstanugol Corporation (state coal company); Kazakhstan Electricity Grid Operating Company (KEGOC)

**Major Oil and Gas Fields:** Tengiz (mostly oil), Karachaganak (oil and gas/condensate), Kashagan (oil), Amangeldy (natural gas)

**Major Oil Ports:** Atyrau and Aqtau on the Caspian Sea

**Oil Export Pipelines:** Tengiz-Novorossiisk (Russia); Uzen-Atyrau-Samara (Russia); Kenkyak-Orsk (Russia) line that transports oil from the Aktyubinsk fields to the Orsk refinery

**Major Oil Refineries (crude oil refining capacity):** Pavlodar (162,666 bbl/d); Atyrau (104,427 bbl/d); Shymkent (160,000 bbl/d)

**Major Power Plants (capacity):** Ekibastuz No.1 (4,000 megawatts, MW), Yermak (2,400 MW), Zhambyl (1,230 MW)

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*Sources for this report include: AFX-Asia, Agence France Presse, Associated Press, BBC Monitoring Central Asia Unit, Caspian News Agency, Caspian Business Report, Central Asia & Caucasus Business Report, CIA World Factbook, The Economist, Economist Intelligence Unit ViewsWire, The Financial Times, FSU Oil and Gas Monitor, Global Inisght, Interfax News Agency, ITAR-TASS News Agency, The Moscow Times, Oil and Gas Journal, Petroleum Economist, Platt's Oilgram News, PR Newswire, Radio Free Europe/Radio Liberty, Reuters, Stratfor, The Times of Central Asia, U.S. Department of Commerce's Business Information Service for the Newly Independent States (BISNIS), U.S. Department of State, U.S. Department of Energy, U.S. Energy Information Administration, U.S. Department of State, World Markets Research Centre.*

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