Showcase Europe: Energy Guide for Uzbekistan

Updated on August, 2001

I. STATISTICAL INFORMATION

Primary energy consumption

Description	The unit of measurement	2000	2001 (*Estimation*)	2002 (*Estimation*)
Coal	Million tons	2.6	2.2	3.7
Fuel Oil	Million tons	1.6	1.5	1.7
Natural Gas	Billion Nm3	14.1	13.9	14.2
Hydro	Million tons of oil equivalent	1	1	1
Nuclear		nil	nil	nil
Renewable		nil	nil	nil

Source: Ministry of Macroeconomic and Statistics of Uzbekistan (These are the only figures available)

II. EVALUATION OF SECTOR

Electric Power Systems, Oil and Gas field Machinery and Services and Renewable Energy Equipment

A) On a scale of 1 (low) to 5 (high), evaluate the priority given by the host government to energy development: **5**

B) On a scale of 1 (low) to 5 (high), evaluate country's receptivity to U.S. products & services: **3**

C) On a scale of 1 (heavy) to 5 (little), evaluate competition for U.S. exporters from local domestic suppliers: **4**

D) On a scale of 1 (heavy) to 5 (little), evaluate competition for U.S. exporters from third-country suppliers: **1**

E) On a scale of 1 (severe) to 5 (little), evaluate overall effect of trade barriers on U.S. exports of products and services: **4**

III. NARRATIVE INFORMATION

Summary

Uzbekistan's Energy Sector is a priority of the Government in which they hope to attract foreign investment.Historically,, raw materials from Uzbekistan were predominately exported to other parts of the former Soviet Union or European countries for processing. Now the primary objective of Uzbekistan’s energy projects in this natural resource rich country is to end its dependence on oil imports and to develop oil, gas and energy production to meet domestic demand and generate export revenue.

Foreign investment programs in the industry include: development of the oil and gas industry focussing on new oil and gas deposits; increasing the output of existing oil fields; refinement and processing of oil and gas. The main priorities in power generation sector include: reconstruction and development of existing hydroelectric and thermal power stations and power transmission systems, construction of new small hydropower plants; development of alternative sources of generation. Completing the renovation and modernization of power generation facilities in Uzbekistan is estimated to cost USD 1.4 billion.

Energy statistics

Production	1998	1999	2000
Oil (million tons)	8.1	8.1	7.5
Natural Gas (billion cubic meters)	54.8	55.6	56.4
Coal ('000 tons)	2.953	2.955	2.500
Electricity (million kWh)	45,935	45,372	46,457

Source: EIU Uzbekistan Country Report, Uzbekenergo Joint-stock Company.

Electric Power Generation and Transmission Equipment

Electric power balance

(Million kWh)

Description	Reported		Forecast		
	1999	2000	2001	2005	2010
Total output	45372	46457	47070	55000	63000
Power stations	43933	45487	46100	53700	61700
Heat power plants	38608	40905	41000	48500	55600
Hydroelectric stations	5325	4582	5100	5200	6100
Block-stations	1386	950	950	1300	1300
Nuclear	0	0	0	0	0
Total consumption	46564	47382	47070	55000	63000
Effective	38577	39112	40040	45700	53100
Energy balance	-1192	-925		-	-

Source: Ministry of Macroeconomic and Statistics of Uzbekistan, Uzbekenergo Joint-stock Company

Uzbekistan is the largest electricity producer among the Central Asian republics and a net exporter of electricity. The country has a total installed generation capacity of 11,283 MW. Uzbekistan has achieved self-sufficiency in energy after gaining independence in 1991. However, maintenance of its power systems has deteriorated over the past years, and generating units have ceased operation. Much of the equipment in the generation, transmission and distribution systems are outdated and extremely inefficient. A lack of spare parts and skilled maintenance staffs also adversely affect operations.

Uzbekistan is part of the Unified Energy System of Central Asia. The Republic's 11,283 MW installed capacity comes from 37 power plants, including 18 thermal power plants with a total capacity of 9,800 MW and 28 hydroelectric power stations with a total capacity of 1,400 MW. There are no nuclear power plants in Uzbekistan.

Electricity in Uzbekistan is derived primarily from thermal plants with 85 percent of thermal plants powered by natural gas, 8 percent by heavy oil and 7 percent by coal. The largest natural gas-powered facilities include the Syrdarya (3,000 MW), Tashkent (1,860 MW) and Navoi plants (1,250 MW). The Government has plans for an additional 4,000 MW through

rehabilitation of existing and/or development of new plants. The Talimardjan thermal power station with unique 800MW turbines is currently under construction. The most significant coal-powered facilities are two power plants in the vicinity of the Angren mine near Tashkent, one which is Novo-Angren (2,100 MW). Nearly 12.5 percent of Uzbekistan's electricity is produced at 28 hydroelectric plants, the largest being Charvak power plant (620 MW). Uzbekistan produces approximately 48,000 GWH of electricity annually with almost all electricity consumed domestically. Only 1,000 GWH of electricity are exported to neighboring countries (Tajikistan and Kyrgyzstan). Rather than export electricity, it has been more common for Uzbekistan to export raw materials, especially natural gas, for neighboring countries to use in their own thermal power plants.

The Energy Sector in Uzbekistan consists on fully state-owned enterprises. Electric power generation has been controlled by the Ministry of Power Engineering and Electrification. But on February 2001 the Government of Uzbekistan issued a decree on partial privatization, demonopolization and deregulation of power engineering and coal mining industries. The Ministry of Power Energy was transformed into the Uzbekenergo State Joint-stock Company. Major power stations and electric grids will also be transformed into joint-stock companies, and partially offered to the foreign investors. However, Uzbekenergo holds the controlling stakes of those companies, and the final structure of the sector is still unclear.

Uzbekenergo has installed 130 turbo and hydro units at power plants, including 37 modem energy units with a capacity from 150 to 300 MW each. The total network of Uzbekistan's power transmission lines, of all voltages, is over 227,000 kilometers long, including 33,900 kilometers of lines of 35 kV and higher capacity. The capacity of substation transformers exceeds 42,600 MW.

There are already several projects with the involvement of foreign contractors or equipment suppliers in this sector, such as construction of the Syrdarya Thermal Power Station. The European Bank for Reconstruction and Development (EBRD) has allocated a loan of $30 million and German Siemens won the tender for reconstruction of two (out of ten) turbines of the mentioned Power Station. Another German Company – “ABB Kraftwerker Berlin” – together with its local partner has won the tender for repair of steam turbines, pumping equipment and generators at the Novo-Angren Power Station. Asian Development Bank (ADB) launched a Technical Assistance Program (TA) for preparing the Regional Power Transmission Modernization Project in the Central Asian republics. The total cost of the TA is estimated at USD $1,180,000 equivalent, comprising a foreign exchange cost of $771,000 and local currency cost of $409,000 equivalent.

The new program for the reconstruction and development of energy generating capacities, issued by the Government of Uzbekistan on December 2000, creates additional opportunities for foreign firms in Uzbekistan. Accordingly, the market this natural resources rich country has significant potential for the U.S. firms with the advanced business experiences in the energy sector industries.

Oil and Gas Industry and Equipment Market

Uzbekistan's oil and gas reserves are very significant. More than 160 oil and gas fields have been discovered and Uzbekistan is already one of the world's top 10 producers of natural gas. In oil production, Uzbekistan is the only former Soviet republic to increase production since independence. Before 1991 Uzbekistan imported up to 6.0 million tons of crude oil from Russia through Kazakhstan. Since 1991 production of oil and oil products has steadily increased. By the end of 1996, Uzbekistan reached crude-oil self-sufficiency. The government projects that by

2002 oil output will reach 10 million tons, and 12 million tons by 2010. However, outside observers are skeptical that production will continue to increase at such sharp rates.

According to Uzbek Geology Committee, 60% of the territory of the country have potential for oil and gas deposits. The number of oil and gas rich regions reached five:

- Ustyurt (with 105,100 square meters of perspective land);
- Bukhara-Khiva (with 44,400 square meters of perspective land);
- Southern-Western-Gissar (with 4,100 square meters of perspective land);
- Surkhandarya (with 14,000 square meters of perspective land); and
- Ferghana (with 17,000 square meters of perspective land).

Total potential resources of Oil are more than 5,300 million tons, Condense – 480 million tons and of Gas - 5095 billion cubic meters. It should be noted, however, that these figures have not been confirmed by outside, independent experts and are highly speculative. Nevertheless, preliminary geological studies indicate the presence of significant hydrocarbon reserves. At present, exploration and extraction works are being conducted in 51 oil deposits, 27 gas deposits, and 17 condense deposits.

Organizational Structure

By Presidential Decree dated December 11, 1998, the National Corporation of the oil and gas industry Uzbekneftegaz was converted into The National Holding Company Uzbekneftegaz as a legally founded Joint-Stock Company of the public type. The State is to hold 51% of the Holding Company stock, with 49% of the stock available for sale to strategic investors. There does still appear to be some question at the Cabinet of Ministers level as to whether the State's share of the stock of Uzbekneftegaz, the eight JSCs, and/or the Third-Tier Subsidiaries should be held in Trust by the State Property Management Committee. Uzbekneftegaz appears to be a commercial company, but continues to exercise some of the functions normally conducted by a State Agency, such as negotiating with foreign oil companies and controlling some of the regulatory functions.

There are 137 entities listed under Uzbekneftegaz:

- Seven are"State Owned Entities" whose stock is held 100% by Uzbekneftegaz. These entities include agencies such as Uzneftegazinspection (the State Inspection Group for Oil and Gas), the Bukhara and Fergana Colleges of Oil and Gas, Uzneshneftegaz (the Foreign Economics Relations Company), and the Editorial Board of the "Uzbek Journal of Oil and Gas (see the Appendix for a complete list of these entities);

- The "State Owned Entity" whose stock is held 100% by the State, but is managed by Uzbekneftegaz. UzVCh is considered a military unit providing security for the domestic oil and gas industry, including "blowout" control.

- TheAssociated Member Joint-Stock Company (25% of its shares owned by Uzbekneftegaz), UzNIPIneftegaz which reports directly to Uzbekneftegaz. This is a scientific entity that conducts engineering and research for the oil and gas industry;

- There are eight JSCs reporting directly to Uzbekneftegaz. These eight companies were also created by the Presidential Decree of 11 December, 1998, and the resulting Cabinet of Ministers' Resolution No. 523 "as Joint-Stock Companies of an open type". Resolution No. 523 also establishes that 51% of the stocks of these eight JSCs are reserved for the State and

are to be held by Uzbekneftegaz. Resolution No. 523 further reserves "up to 10%" of the stocks of the eight JSCs for its employees, leaving 39+% (could approach 49%) of the stocks of the eight JSCs available for private investors. These eight JSCs are:

1. Uzgeoneftegazdobycha – Oil and Gas Exploration and Production, and Processing of Natural Gas and recovery of Gas Liquids.
2. Uzneftegazstroy – Construction of oil and gas projects.
3. Uzneftemakhsulot – Oil product sales and distribution, including some petrol stations.
4. Uztransgaz – Transportation of Natural Gas.
5. Uzneftegazishchita'minot – Supply and catering of food for oil and gas industry and employees.
6. Uzburneftegaz – Drilling company.
7. Uzneftepererabotka – Oil Refining company.
8. Uzneftegazmash – Manufacturer of oil and gas equipment.

In addition, there are 120 Third-Tier subsidiaries reporting to the above eight Joint-Stock Companies. These Third-Tier subsidiaries have four different types of equity structure: A) State-Owned Entities, 100% of stock held and managed by one of the eight JSCs; B) Subsidiaries, 51% of the stock held and managed by one of the eight JSCs with the remainder divided 10% for employees and 39% for private investors, either foreign or domestic; C) Associated Members, 25% of the stock held and managed by one of the eight JSCs with the remainder divided 26% for employees, 25% for foreign investors, and 24% for "free sale"; and D) joint-ventures with varying amounts of the stock held by one of the eight JSCs. These Third-Tier subsidiaries represent everything from regional exploration and production companies, to refineries, to regional drilling companies, to construction departments, to testing labs, to regional logistics companies, to sports clubs, manufacturing facilities, and finally regional food catering companies. It is suspected that there are many more divisions under some of these Third-Tier subsidiaries.

The French Investment Bank "BNP Paribas" was selected by the government as the financial advisor for privatization of the above described state-owned oil and gas monopoly on February 7, 2001, and relevant contract was negotiated and signed on August 2001. Now BNP Paribas has three-phase assignment, described in the terms of references for privatization of Uzbekneftegaz. First phase includes diagnostic study of the company and its affiliates and development of the privatization strategy. This phase will also provide for premarketing efforts. The Second phase is an Evaluation of the company assets, preparation of the Information Memorandum and other required tender documentation. The final phase is the opening, organizing and conducting of the international tender for the sale of the company's shares. Estimated terms of the assignment are two years.

Investment in Oil and Gas Sector reached total US$ 1.5 billion according to Uzbekneftegas Company. However, it should be noted that this number reflects the government's investments in this sector, not necessarily that of foreign entities. To date, there have been significance import of equipment and services from foreign companies, but little direct investment.

Oil production

In 1991, Uzbekistan consumed 12 million tons of oil and condenses. By 1998, consumption decreased to 6.9 million tons due to economic decline, restraint of demand, and a national conservation program. However, consumption is expected to rise by the year 2010 due to industrial growth.

One of Uzbekistan's first priorities after independence was to increase production of oil so that the Republic would no longer need to rely on imports from Russia. With this import substitution program developed to the extent that Uzbekistan is now self sufficient in oil production, oil exports are now underway. In 1998, Uzbekistan exported 0.9 million tons of oil and oil related products. At the present time, Uzbekistan exports its oil to other Central Asian countries. Uzbekistan, one of two double landlocked countries is working with its Central Asian neighbors to develop new pipelines to export oil and gas to other regions of the Eurasian continent.

Oil prices

	1999	2000	2001	2002
Oil (Brent; US$/b)	17.9	28.4	23.9	23.0

Source: EIU based on Regional GDP growth rates

All oil and gas processing and refining facilities in the country are concentrated within Uzneftepererabotka (Uzbek Oil Processing) Joint-stock Company. Uzneftepererabotka carries out the processing and refining of oil and gas condenses at its Ferghana and Bukhara oil refineries. Uzneftepererabotka has been established in 1999 as the refining unit of Uzbekneftegas. Prior to this, it operated as a part of Uzbekistan Oil and Gas Complex.

Being one of the largest in Central Asia, Ferghana Oil Refinery Plant (320 kilometers from Tashkent) is specialized in the processing of carbonic-hydrogen products, and oriented towards fuel and lubricating oils while Bukhara refinery (580 kilometers from Tashkent) oriented for gas condense production. It was designed for high quality and international standard gasoline, diesel oil and aviation kerosene production.

Alty Ariq Oil Refinery Plant established in 1906 has been merged with Ferghana Oil Refinery Plant and became an operational part of the Ferghana refinery. Both refineries are located in Ferghana region. Ferghana Oil Refinery was originally constructed to supply oil products locally, to Russia, Kazakhstan, Kyrgyzstan and other republics of the former Soviet Union. It started operations in 1958 with one crude and vacuum unit. It has since grown steadily and now has total crude and condensate capacity of 8.7 million tons of production annually. In 1997 Uzneftepererabotka signed a US$180 million loan agreement with the EBRD and Exim-Bank of Japan to upgrade the facilities of the Ferghana Oil Refinery Plant. Among others loan proceeds have been used for the construction of a new desulphurisation unit to meet the necessary requirements of the market.

The French Company Technip and the Japanese companies Marubeni & JGC are constructing the oil refinery in Bukhara. This refinery processing condenses from the Kokdumalak field. The capacity of the refinery is 5 million tons of oil and condenses. The first phase of construction, enabling the refinery to handle 2.5 million tons per year, cost around USD 270 million, with ancillary facilities bringing the cost to USD 400 million, was put into operation summer 1997. Annually, the refinery will produce 210 thousand tons of non-ethylated 76-octane gasoline; 450 thousand tons of non-ethylated 93-octane gasoline; 1.3 million tons of diesel fuel; 300 thousand tons of aviation kerosene; and 12 thousand tons of sulfurs.

Uzbekistan's gasoline distribution system is in great need of modernization and investment. Currently gasoline is distributed through 88 distribution centers and 800 refueling stations. Most of refueling stations has been privatized. Improving the distribution system for petroleum products is a priority of the Government of Uzbekistan.

There are also plans to develop of a network of compressed natural gas (CNG) filling stations. A joint venture with American Engineering Incorporated (USA) has been registered but the project has not been implemented. If implemented, the number of CNG stations will eventually increase to 360. Currently there are 33 CNG stations. Plans call for the gradual conversion of a large

percentage of government vehicles, which currently run on gasoline, to compressed natural gas. A partial manufacturing program for certain types of related equipment will also be established. The estimated cost of the project is USD 108.5 million.

CNG and Liquefied Natural Gas (LNG) projects are also under consideration by other U.S. companies. If the infrastructure is developed in Uzbekistan for refueling of equipment, especially cars, buses, trucks and trains, using CNG or LNG, there will be the potential for further exports of U.S. equipment and technology to meet the expanded scope of this subsection. The American Company Texaco has a joint venture at the Ferghana refinery to produce and market Texaco-brand engine, transmission and hydraulic lubricants from local crude oil. The JV has modern technology and additives provided by Texaco.

Uzbekistan does not yet have a well-developed oil pipeline system. There is only one major pipeline crossing the territory of the country, constructed during Soviet times, to transport oil to the region from other parts of the Soviet Union. This interstate pipeline runs from the Russian City of Tumen through Chirnkent, Kazakhstan; Bukhara, Uzbekistan; and Chardjou, Turkmenistan. The length of the pipeline network on the territory of Uzbekistan is about 450 km. Uzbekistan is interested in participating in the construction of new interstate long-distance pipelines that will connect the Central Asian oil producing states of Uzbekistan, Turkmenistan and Kazakhstan with China, Turkey and Pakistan.

Gas production

Uzbekistan is among the world's 10 largest producers of natural gas. It became gas self-sufficient in 1985. Between 1990-1995, Uzbekistan increased its gas output by 30 percent and has plans to further increase production through the implementation of such projects as one proposed by Enron Oil and Gas. Before independence, Uzbekistan was a major supplier of gas to other Soviet republics. Exports of an estimated 5 billion cubic meters per year are now limited to Kazakhstan, Kyrgyzstan, and Tajikistan.

The country's network of gas pipelines is more elaborate than its oil pipeline network. There are nine long distance gas pipelines totaling 12,000 km, with access to the CIS's integrated gas system. The pipeline has a capacity to transport more than 20 billion cubic meters of gas to Central Asia, Russia, and Ukraine and other European countries.

The most notable natural gas fields are the Mubarak and Shurtan fields. Refineries at these fields process about 40 billion cubic meters per year, which removes sulfur and other impurities. Each year, these plants recover more than 330,000 metric tons of sulfur. Hydrogen sulfide and sulfide compounds contained in the gas and gas condense are extracted and converted into sulfur at the Mubarak Gas Processing Plant. The Shurtan Gas Plant operates one of the largest zealot units in the world. To increase the volume of sulfur exports, the Government plans to involve foreign investors in projects to granulate and package up to 100,000 metric tons of sulfur per year.

The gas fields of Uzbekistan contain ethane, propane, butane and other components from which polymers (polyethylene, PVC) can be obtained. These components can be economically extracted in the Shurtan and Mubarak fields. The gas in these regions has ethane concentrations of 1.4 to 8.1 percent and propane-butane concentrations of 2.1 to 5.6 percent.

Renewable Energy Equipment (REO)

The Ministry of Energy has experimented with solar energy and wind energy on a small scale. Currently there are no plans to construct these types of renewable energy plants or expand the current experimental projects. Uzbekistan would probably be good candidate for these types of renewable energy projects except for the fact that an abundant reserve of hydrocarbons makes this type of energy production less appealing.

The Ministry of Agriculture and Water Management has proposed a program for small-scale hydroelectric plants. The program is included in a government list of priority projects. In order to increase efficiency of the hydro energy potential utilization of the country's rivers, irrigation canals and dams, the government of Uzbekistan has adopted several relevant resolutions in 1995 and in 2000.

Projects with participation of foreign companies

The government of Uzbekistan and UNG welcomes participation from foreign companies and investors in the new oil and gas deposit's exploration projects.

M.W. Kellogg (U.S.), a subsidiary of Dresser Industries, and Nissho Iwai (Japan) signed an agreement with Uzbekneftegas for the construction of a Cycling Process Compressor Station at the Kokdumalak oil/gas field. This is a major gas, oil and condense project. Japan's Eximbank (USD 130 million) and the U.S. Ex-im Bank (USD 50 million) are funding the costs of importing components and services. The project, which began in April 1995 complete in 1999, allow to produce 2.5 million metric tons of condense per year. In two years, oil output should total nearly 4.3 million tons a year.

A Consortium of ABB Lummus Global (U.S.), Mitsui and Nissho lwai (Japan) launched the US$ 450 million project at Shurtan Gas and Chemical Complex in 1998 to produce 125 thousand tons of polyethylene and 138 thousand tons of liquefied gas annually. It should be noted that this is not foreign investment, but an investment by the Government of Uzbekistan. The U.S. Ex-im Bank and Japan Ex-im Bank have signed significant loans with the Government for financing this project. Later, on February 20, 2001, the Credit Agreement for the financing of the Gas Compressing Station construction project at the Shurtan Gas Deposit was signed. U. S. Ex-im bank insured US$ 102.9 million credit provided by ABN Amro Bank to Uzbekneftegas under the guarantees of Uzbek Government.

The American Company BSI has constructed a US$ 90 million underground Gas Storage Facility for Uzbekneftegas in the Andijan region of Uzbekistan. The project uses Dresser-Rand turbines and over forty U.S. subcontractors for equipment and services. 100 percent of the content of the project is from the U.S. with U.S. Ex-im Bank providing financing.

On Jul 4, 2001 a local subsidiary of British Trinity Energy – UzPEC - has received two licenses to explore and develop oil and gas deposits. The first license has been granted to develop the Adamtash gas condensate and South Kyzylbayrak oil deposits in southwest Gissar. The permit is valid for 25 years, with the right to extend it by another 15 years. The second license has been granted for five years to carry out exploration work in central Ustyurt, with the right to extend the license by three years. It is also planned that UzPEC will produce 2 billion m3 of natural gas and about 120,000 tons of oil by 2006. It is planned to export natural gas along existing pipelines to Kazakhstan and Kyrgyzstan. At the same time as developing existing deposits, the creation of a geological exploration in southwest Gissar and in central Ustyurt. The project will be financed by the British company and also by credits from international financial institutions.

Russian Oil and Gas giants LUKoil and Itera International Group of Companies has sign an agreement with Uzbekneftegaz on exploration and development of oil and gas deposits in Ustyurt and Bukhara-Khiva regions on July 2001. The Agreement considers cooperation for development and for sharing production at the Kandymskiy group of deposits - Zafar and South Tandyrcha deposits (Kashkadarya Region). LUKoil will share 45 per cent, Itera 45 per cent and Uzbekneftegaz 10 per cent of the deal. Projected duration of the deposits' development is 25 years but it could be extended for yet another 10 years. The maximum volume of gas extraction

shall reach 8-10 billion cubic meters a year. The required investment volume is US$ 750 million dollars.

IV. MAJOR PROCUREMENTS OR INVESTMENT PROJECTS ON HORIZON

Potential Oil and Gas Protects

The Uzbekneftegaz company has developed a program of new investment projects in the sector for the period 2001 – 2005, which creates new opportunities for U.S. companies in Uzbekistan, which includes following projects:

I) Development of explored fields;
II) Additional analysis of oil- and gas- bearing structures with proven commercial productivity;
III) Detailed seismic surveying and deep drilling to discover hydrocarbon deposits;
IV) Joint exploration and development of new fields and deposits.

Perspective projects encompass an area of 51,700 square kilometers and include six contract blocks in Ustyurt region (northwest of the country) ranging in size from 1,900 to 12,000 square kilometers. Potential reserves of gas are 1.685 trillion cubic meters and 1.72 billion tons of oil. Considering oil and gas potential of the Ustyurt region UNG planing to develop Kuanysh, Urga, Akchalak, Agyin, Shakhpakhty and Aral fields. More than 70 percent of the in place (geological) hydrocarbon resources and all of the discovered gas-condense fields of Ustyurt lie within the Investment Project areas.

The Kuanysh Investment Project. Collated data:

- Total area: 4,200 km2;
- Amount of seismic surveying operations: 4,500 liner km;
- Number of fields: 1;
- Number of prepared traps: 6;
- Number of other traps discovered: 6;
- Number of further traps forecast: 7;
- Number of wells drilled: 21;
- Amount of deep drilling: 71,400 meters;
- Explored reserves of Gas: 1.8 billion m3;
- Explored reserves of Condencate: 0.6 million tons;
- Forecast resources of Oil: 250 million tons;
- Forecast resources of Gas: 325 billion m3;
- Forecast resources of Condencate: 15 million tons.

A fairly dense network of CDP seismic profiles (the distance between profiles is 2 km on average) covers the block. The reservoir is located at a depth of 3,200-3,300 m (within Lower Jurassic sandstone). The gas is practically non-sulphurous, and gas production rates were 250,000-360,000 m3/day. In addition, weak gas flows from Lower Jurassic sediment were obtained in the South Kuanysh and Murun areas. The block's main prospects are associated with the Aral region (the Surgil, Kabanbai, North Aral etc. areas). The increased thickness of Jurassic sediments, and the presence, according to seismic survey data, of a slightly dislocated Paleozoic sedimentary complex suggest the probability of discovering new fields here is high.

The Urga Investment Project. Collated data:

- Total area: 2,500 km2;
- Amount of seismic surveying operations: 4,000 liner km;
- Number of fields: 1;
- Number of prepared traps: 6;
- Number of other traps discovered: 5;
- Number of further traps forecast: 7;
- Number of wells drilled: 33;
- Amount of deep drilling: 98,200 meters;
- Explored reserves of Gas: 46.9 billion m3;
- Explored reserves of Condencate: 0.9 million tons;
- Forecast resources of Oil: 155 million tons;
- Forecast resources of Gas: 265 billion m3;
- Forecast resources of Condencate: 11 million tons.

The block is covered with a dense network of CDP seismic profiles (the average distance between the profiles is 1.5-2 km). The gas is non-sulphurous and the condense content is up to 220 g/m3; gas production rates were from 50,000 to 500,000 m3/day. In addition, commercial gas flows from Lower Jurassic sediments were obtained in the Berdakh and Aral areas, weak gas flows were obtained from the Middle Jurassic in the Adzhibai area, and oil flows were obtained from Paleozoic limestone in the Karakuduk area. The block's main prospects are associated with Jurassic classic and Paleozoic carbonate sediments. Available geological and geophysical data allow expecting the discovery of new fields within the block.

The Akchalak Investment Project. Collated data:

- Total area: 2,000 km2;
- Amount of seismic surveying operations: 3,500 liner km;
- Number of fields: 4;
- Number of prepared traps: 5;
- Number of other traps discovered: 6;
- Number of further traps forecast: 5;
- Number of wells drilled: 68;
- Amount of deep drilling: 238,100 meters;
- Explored reserves of Gas: 12.1 billion m3;
- Explored reserves of Condencate: 1.2 million tons;
- Forecast resources of Oil: 125 million tons;
- Forecast resources of Gas: 125 billion m3;
- Forecast resources of Condencate: 7 million tons.

The block is covered with a dense network of CDP seismic profiles (the distance between the profiles is 1.5 km on average). This region has been used by deep drilling. The gas reservoirs occur in the Lower-Middle Jurassic classic and Paleozoic carbonate sediments at depths of 2200 to 3700m. The gas is practically non-sulphurous, and the condense content is 90-222 g/m3; gas production rates were from 150,000 to 1000,000 m3/day.

The Agyin Investment Project. Collated data:

- Total area: 10,000 km2;
- Amount of seismic surveying operations: 3,000 liner km;
- Number of prepared traps: 2;
- Number of other traps discovered: 6;
- Number of further traps forecast: 18;
- Number of wells drilled: 7;

- Amount of deep drilling: 22,300 meters;
- Forecast resources of Oil: 600 million tons;
- Forecast resources of Gas: 200 billion m3;
- Forecast resources of Condencate: 25 million tons.

The CDP seismic profile network is very non-uniform. In the southern and northeastern parts of the block the average distance between profiles is about 3.5-4 km; in the central part there are only refraction method profiles and in individual areas single-fold reflection method operations have been conducted. Within the block, preparation has been made to drill two areas, and in the southern part 6 oil and gas prospective traps requiring additional study have been identified. The region is practically uninvestigated by deep drilling. In all, 7 wells have been drilled, including 3 parametric wells. The block's main prospects are associated with Jurassic classic sediments (throughout the area) and Paleozoic carbonate sediments (in the southern part).

The Shakhpakhty Investment Project. Collated data:

- Total area: 5,000 km2;
- Amount of seismic surveying operations: 3,500 liner km;
- Number of fields: 1;
- Number of prepared traps: 2;
- Number of other traps discovered: 5;
- Number of further traps forecast: 10;
- Number of wells drilled: 32;
- Amount of deep drilling: 102,400 meters;
- Explored reserves of Gas: 47.6 billion m3;
- Forecast resources of Oil: 300 million tons;
- Forecast resources of Gas: 270 billion m3;

The block is covered with a CDP seismic profile network of average density (the distance density (the profiles is 3 km on average). The Upper Jurassic productive sandstone are located at depths of 1,700-2,300 m. The gas is non-sulphurous, with a production rate of 270,000 to 1,500,000 m3/day. In the West Shakhpakhty area, weak gas flows were obtained from Middle Jurassic sediments. The block's main prospects are associated with Jurassic classic and Paleozoic carbonates. The presence of the latter is predicted on the basis of seismic survey data in the central part of the block at depths of 3,500 - 3,700 meters.

The Aral Sea Investment Project. Collated data:

- Total area: 32,000 km2;
- Amount of seismic surveying operations: 4,000 liner km;
- Number of prepared traps: 2;
- Number of other traps discovered: 7;
- Number of further traps forecast: 30;
- Number of wells drilled: 1;
- Amount of deep drilling: 3,700 meters;
- Forecast resources of Oil: 100 million tons;
- Forecast resources of Gas: 455 billion m3;
- Forecast resources of Condencate: 40 million tons.

Non-uniform networks of low fold CDP seismic profiles and single-fold reflection method profiling covers the offshore area. Modern seismic surveying has only been conducted in the extreme southeastern drained part of the block, - about 1,000 linear km of CDP profiles (the average distance between profiles being 3 km). Within the block, preparation has been made to drill 2 areas and 7 further traps have been identified. In the area of the block 1 parametric well

has been drilled on a plateau on the western coast of the Aral Sea.

In addition to the Usturt Region projects, the UNG also developing new projects for new oil and gas deposits exploration at Kashkadarya, Karakul, Rametan, Surkhandarya, Namangan and Andijan regions of the country.

Potential Protects in Power Generation

The plans for Reconstruction and Development of Energy Generating capacities for 2001-2010 were developed by the Ministry of Power Energy and include technical re-equipment and modernization of energy facilities, reconstruction and further development of the power transmission networks and construction of new power generating capacities.

Modernization and technical re-equipment of the energy facilities includes:

- maintenance and modernization of worn-out Electric Power Station (EPS) equipment;
- increase of capacities of the existing Heat Power Stations (HPS);
- decrease of the fuel consumption; and
- introduction of the up-to-date technologies.

Implementation of the above tasks willl allow the reduction of fuel consumption , meet gas saving rate on approximately 540 million cubic meters per year, raise the capacities of functioning power stations by 905 MW and ensure extenuation of the equipment operation for the next 8-10 years.

The program of new power generating capacity construction will include:

- replacement of the worked-out equipment;
- introduction of up-to-date high efficient power producing technologies;
- coverage of estimated power consumption growth; and
- reduction of environmental impact of energy capacities.

The Program estimates the completion of the first 800 MW power unit assembling at the Talimarjan State District Power Station of condensing type (SDPS), introduction of additional Steam-Gas Turbines Units (SGTU) at the Tashkent SDPS, Navoi SDPS and Mubarek HPS. The Program implementation also will allow an annual saving of 300,000 tons of conventional fuel. Total generating capacities to be introduced by year 2010 shall reach 1,748 MW.

Reconstruction and further development of the power transmission networks is also one of the most important aspects of the energy sector improvement plans. Its implementation reduces the dependence on energy systems of neighboring countries, and increasing the efficiency, reliability and flexibility of the electric energy transmission networks.

New generating capacities introduction plan.

No	Description	Capacities to be introduced MW	Estimated project cost, Million USD	Period of construction years
1	Reconstruction of two power-generating blocks of the Syrdarya SDPS*	120	38.0	2001-2002
2	Talimarjan SDPS, block no. 1	800	69.6	2001-2003
3	Construction of the steam-gas units,	828	442.7	2003-2008

	including:			
3.1	Modernization of the Tashkent SDPS	376	225.0	2003-2005
3.2	Modernization of the Navoi SDPS	346	117.0	2006-2008
3.3	Reconstruction of the Mubarek Heat Power Station	106	100.7	2006-2008
	TOTAL	1748	550.3	

**SDPS – State District Power Station of condensing type.*
Note: the exchange rate USD/Soum used for calculation is $1=387.5 Soum.
SOURCE: Uzbek Ministry of Macroeconomics and Statistics, Uzbekenergo Company.

Plan for reconstruction and development of the power distribution network.

Description	Capacity to be introduced Km	Transferable Capacity MW	Estimated Project cost, Million USD	Period of the project, year
1. Removal of the 220-250kV AL* from the territory of neighboring countries				
1.1. Syrdarya Power Network:				
500kV AL Syrdarya SDPS** Guzar	65	860	18.2	2001-2002
220kV AL Syrdarya SDPS Djizak	55	290	9.3	
220kV AL Syrdarya SDPS Zarbdor	55	270	9.3	
220kV AL Syrdarya SDPS Guzal	10	120	2.0	
1.2. Tashkent Power Network:				
500kV AL Syrdarya SDPS Tashkent	90	410	25.2	2001-2004
220kV AL Syrdarya SDPS Karakiyasay	90	60	20.2	2001-2004
220kV AL Syrdarya SDPS-Metallurgia-Pechnaya	62	50	14.0	2003-2004
1.3. Surkhandarya Power Network:				
Incision of 500kV AL Regar-Guzar to 500 kV SS*** Surkhan	140	370	39.2	2001-2003
SUB-TOTAL	567	2430	137.4	
2. Development of power transmission networks				
2.1. Samarkand Power Network:				
500kV SS Sogdiana with 220-500kV AL (I and II phase)	2x510MVA 67	620	36.3	2001-2003
500kV AL Syrdarya SDPS Sogdiana	205	900	53.6	2004-2008
2.2. Tashkent city Power Network				
220kV SS Keles, 110kV switching station Navoi with 220-110kV AL	400MVA 7.2	280	16.6	2001-2002
110kV SS ODO with 110kV cable line	126MVA 6	60	9.7	2001-2002
2.3. Tashkent Power Network				
220kV AL Tashkent SDPS Keles	43.8	260	7.0	2002-2003
220kV AL Splav-Tashkent	14	260	1.6	2002-2003
220kV SS Yangiyul with 220kV AL	2x200MVA 20	240	14.0	2006-2009

2.4. Fergana Power Network				
500kV SS Uzbekistanskaya with incision of 500kVAL	501MVA 40	380	30.4	2001-2004
500kV AL Novo-Angrenskaya SDPS Uzbekistanskaya	200	770	53.0	2001-2004
2.5. Shakhrisyabz Power Network				
500kV AL Sogdiana-Guzar	185	280	48.0	2006-2009
SUB-TOTAL	2429MVA 788	4050	270.2	
TOTAL	2429MVA 1355	6480	407.6	

**AL - Aerial Power Lines*
***SDPS – State District Power Station of condensing type.*
****SS – Substation*
Note: the exchange rate USD/Soum used for calculation is $1=387.5 Soum.
SOURCE: Uzbek Ministry of Macroeconomics and Statistics, Uzbekenergo Company.

Potential Protects in Small Hydropower

Uzbek Ministry of Agriculture and Water Resources plans to implement a program of Small-size Power Facilities construction to introduce about 440 MW of additional capacities and 1.3 billion kW/hour of power output.

Irrigation channels and water reservoirs have been underutilized for the production of hydropower. The share of small-scale power plants is only 8-10% of the total volume of electricity produced in Uzbekistan. The Department of Small Power Stations Development within the State Committee for Statistics and Forecasting estimates that the Republic's 656 small rivers, numerous irrigation channels, and 54 reservoirs and dams make it possible to construct at least 140 small size power stations that will have a capacity of approximately 1,760 MW and produce up to 8 billion kWh of electric power a year. In the first stage of the proposed program, feasibility studies and technical proposals have been prepared for 14 small size power plants. Currently 5 small stations are being constructed utilizing the Tupolang, Ghissarak, Akhangaran, Sokh and Andijan reservoirs. In the second and third stages of the program, feasibility studies will be prepared for 127 more stations. The program needs financial support and equipment.

V. MAJOR TRADE EVENTS/FAIRS

OGU'02
Uzbekistan Oil, Gas and Natural Resources Exhibition and Conference
May, 2002
UZEXPOCENTER
Tashkent, Uzbekistan

Organizers:

International Trade and Exhibition Group (ITE), United Kingdom
Uzbekneftegas, Uzbekistan Ministry of Foreign Economic
Relations.

Contact Information:

International Trade and Exhibition Group Byron House, 112A
Shirland Road, London W9 2EQ, UK

Tel: 44 (171) 286 9720
Fax: 44 (171) 2661606
E-mail: oil+gas@ite-group.com

VI. COUNTRY'S METHODS OF PROCUREMENT

Most purchases of equipment within the energy sector are made by Uzbek companies or by foreign partners working on projects in cooperation with local companies.

The procurement of the foreign contractors for each project or assignment will be implemented through the open tender process. The rules of the tender are described in the Resolution of the Uzbek Government No. 456 issued in November 2000. However, bidder with an attractive proposal of financing sources, such as long-term loan arrangement, can apply for exceptional preferences in bidding on tenders. In reality, almost all equipment for the energy sector were imported with international financing, which often was the deciding factor in procurement.

The tenders for each project and assignment usually announced in the domestic and international press. For major projects, international tenders are often prepared using international consultants.

VII. MEANS OF FINANCING PROCUREMENTS

Procurement of equipment and services either is financed directly from the national budget, with financing through international financial institutions, such as the EBRD and World Bank, or through assistance from various export-import Banks. Uzbekistan is fortunate to be a member of not only the EBRD and World Bank but also the Asian Development Bank. The ADB has been financing infrastructure projects but none to date in power generation or the oil and gas sector. Financing from private international banks is still uncommon for large-scale projects.

VIII. POINTS OF CONTACT

For additional information about how CS Tashkent can help your business, or for answers to specific questions regarding the energy sector, please direct inquiries to:
Tyrena Holley, Senior Commercial Officer
Jakhongir Mavlany, Commercial Assistant
Tel.: (99871) 120-67-05
Fax : (99871) 120-66-92
E-Mail: Tyrena.Holley@mail.doc.gov
Uzbekistan.Intern3@mail.doc.gov

International mailing address:
41 Buyuk Turon Street, 3rd Floor,
Tashkent 700000 Uzbekistan

U.S. mailing address:
Jakhongir Mavlany
Commercial Service
Department of State
7110 Tashkent Place
Washington, DC 20521-7110