

2. Investment Opportunity in Mining

The Government of Afghanistan supports a mining sector strategy that encourages legitimate and transparent private investment in the sector.

Afghanistan is a country abundantly rich in natural resources. There are currently more than 1,400 mineral deposits that have been identified including energy minerals such as oil, gas and coal and other metallic and non-precious minerals such as lead, cement-grade limestone, gemstones, copper, iron, gold, salt, and industrial minerals (for use in the glass, ceramic, construction, chemical and fertilizer industries). Known precious and semi-precious stones include emerald, jade, amethyst, alabaster, beryl, lapis lazuli, tourmaline, ruby, quartz, and sapphire. Afghanistan's iron and copper deposits are of world-class quality.

The hydrocarbons (petroleum and natural gas) industry provides great investment potential for Afghanistan, both financially and as a means for energy production. Recent findings in March 2006 indicate that the Afghan-Tajik and Amu Darya Basins contain 18 times the oil and triple the natural gas reserves previously determined.

The Government of Afghanistan ratified the Minerals Law in 2005 and ratified the Hydrocarbons Law (2006), which governs the natural gas and petroleum industries in the energy sector. These two laws are major initial steps in addressing how to create a regulatory framework for the development of these sectors and, most importantly, enable a suitable environment to attract and retain private investment.

2.1 Investment opportunity in Ghorī Cement Plant

Investment opportunities exist in the following areas:

- ◆ Portland cement blends
- ◆ Non-Portland hydraulic cements

The Ghorī Cement plant, located in the city of Puli Khomri in the North of Afghanistan was acquired by the Afghan Investment Company (AIC) under the privatization initiative of the Government in April 2007. The AIC is a group of highly successful and established Afghans with a solid base in Afghanistan and in-depth knowledge of the local conditions.

The Ghorī plant enjoys above-standard specifications with regards to its products due to the comparative advantage of having easy access to immense deposits of high-grade limestone / clay / coal / gypsum at relatively low cost. In the first three months of its operation AIC invested and repaired Ghorī I and was successful to increase the plant production capacity from 150 TPD to 400 TPD.

To meet the increasing demand (estimated at closer to \$1bn/year in Afghanistan alone and growing), AIC is in the process of completing Ghorī II cement plant which was abandoned half finished 20 years ago. Ghorī II Cement Plant has the capacity for 1000 TPD production which will be operational in mid-2008.

The group is also aiming to set up Ghori III Cement Plant which will be a new state of the art Greenfield Cement Plant near the existing Ghori II facility with a production line of 4000 TPD clinker. The plant is expected to be in operation by the end of 2009.

For continuous and smooth operations of the plant, uninterrupted power supply is very crucial. In order to reduce cost of production, AIC is going ahead with the construction of its own Coal based Thermal Power plant. The installed generation capacity shall be 25 MW. Links to the public power grid are in place to meet any excess power requirements.

The AIC is also developing and operating four coal mines namely Karkar, Dudkash, Ahandara and Khurdara near the existing cement facility at Pol-e-Khomri under the privatization initiative of the government in April 2007. The output shall primarily cater to the needs of the existing and proposed cement plants and the proposed captive 25 MW thermal power plant.

Since the project needs an estimated total investment of over \$200 mil and the AIC has difficulties raising the total financial resources it is looking for an investment partner

Scale of operations: Medium & large scale production potential.

Market: Mass market potential especially domestically & with limited potential internationally

Potential

Domestic Market: Almost unlimited potential with estimated consumption at between 5 to 8 million tones in 2008 alone.

Export Market: Demand for cement in China is expected to advance 5.4% annually and exceed 1 billion metric tons in 2008. Cement consumed in China will amount to 44% of global demand, and China will remain the world's largest national consumer of cement by a large margin. There are cement shortages in Emirates and in Pakistan, however transport costs will make export difficult.

Returns

Monetary Returns: A 50kg bag of cement typically sells for between \$177-220 Afs.

Social Returns: Production will generate off-farm employment for unskilled and semiskilled rural residents as well as a source of supplemental income for producers. Prices for cement have risen rapidly in recent times. There is a supply shortage in both Dubai and Pakistan. Transport costs for imported cement are high and increasing.

Type of Assistance Requested

There is need to established private sector firms familiar with the international market for cement and cement-based products.

Specific Technical Assistance Needs:

- ◆ Preparation of the raw cement mixture

- ◆ Production of the clinker
- ◆ Preparation of the cement

Local Advantage

Afghanistan is rich in the raw materials required for the production of various cement blends including: limestone, clay and gypsum. Additionally investors can expect, full government support, minimal government regulation, and expedited procedure to start a business. The construction boom in Afghanistan is expected to continue well in to the future as reconstruction continues apace. This bodes well for continuing strong demand for cement products.

Competition

There is at least one working Afghan cement plant at Puli Khumri. This is operated by the Ministry of Mines and Industry. However, its production is not sufficient to meet domestic demand and private sector firms would be more competitive. Import competition from foreign companies provide the main source of competition, primarily Pakistan and Iran however high transportation costs and regional scarcities, provide an opportunity for domestic firms.

2.2 Investment opportunity in Kandahar Cement:

Investment opportunities exist in the following areas:

- ◆ Portland cement blends
- ◆ Non-Portland hydraulic cements

According to a study funded by the world, Kandahar was a suitable place for the production of cement in April 5, 1978. According the study Kandahar was one the suitable location for the erection of cement plant.

Market

- a. Average annual consumption of the cement is expected by 18%.
- b. A demand of about 3 million ton of cement was estimated for the seven year; while the demand is high ten fold more in this time as there is high level demand and activities speed for the reconstruction and development.
- c. In addition to the local market and the best quality of cement there is potential market to export cement to the central Asian and Pakistan.

Production

There is potential and availability of tens of million of limestone in Kandahar and its neighbouring provinces.

Return:

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Competition: Pakistan and Iran will be the main competitor and due to the low cost labor and government supportive policy and high opportunity of getting technical assistance from the world community, Afghanistan would make the investor more competitive.

2.3 Investment in Hajigak Iron Mine

Hajigak iron ore is situated in the mountainous area of Bamyan province, 130 km west of the Afghanistan capital, Kabul. It is one of several iron deposits within this area but is the largest located to date. A study in the 1960s demonstrated the mineral potential of the region, and estimated the Hajigak resource as 1.8 billion tones of iron ore with a concentration of approximately 63 %. This assessment ranks the Hajigak deposit as world class.



The primary ore (80% of the deposit) occurs below 100- 130 m and comprises magnetite and pyrite, with minor other sulphides including chalcopyrite, and averages 61% Fe, 5% sulphide and 0.05% p. The remaining 20% is oxidised and consists of three hematitic ore types at 62.8% Fe. The mineralisation is believed to be partly structurally controlled and related to Oligocene magmatism. Russian estimates for the entire deposit are 1 700 Mt, although estimates for the near surface oxide ore in the most explored area are 85 Mt (Category A-C2). A feasibility study on the deposit was

undertaken in 1972 by a Franco-German group and included the construction of a blast furnace⁸.

Following are some main aspects of the iron deposits according to the ministry professional officials:

- World Class deposit of Hajigak is located very close to Bamyan;
- More than 63 % Fe, also contains Mn, a steel quality enhancer;
- The delluvial deposits on the side of the road by itself worth millions of dollars;
- Development of Hajigak will provide thousands of jobs for the country including in mining, transportation, smelting, power generation, coke supply and services;
- Hajigak is going to be offered for tendering very soon;



According to the ministry of mine Iron deposits occur along the so called transcontinental strike-slip Badakhshan-Heart Fault. The metalogenic belt extends for several hundred km (Badakhshan, Panjshare, Ghorband, Bamyan, Hajigak, Behsood, Yakowlang, Lal o Sarjangan, and Ghore). The total resources are estimated at billions of tons of high quality iron, containing a very attractive mixture of elements, Mo, Ti, V, and Mn. XRF analyses of a sample from Ahangran Bamyan area showed 65.98 % Fe and 0.24% V

2.4 Investment in Sya Dara Iron

In addition there are other deposits of iron like Sya Dara Iron, probably the size of Hajigak, was evaluated during expedition in late June and early July 2008 which

⁸ Details of Hajigak iron deposit is available online ([PDF — 5.181 KB, 76 pages](#)); reference "Preliminary Non-Fuel Mineral Resource Assessment of Afghanistan" USGS Open-File report 2007-1214.

contains 62.25 % Fe, 100 ppm Mo, a steel quality enhancer; the prices of which are \$50-60/Kg for Mo (molybdenum).

The gross value of Mo alone in this deposit can be estimated at billions of dollars.

On the south side of the Sya Dara, near Dahani Dar-Gashtak, another deposit of Iron was discovered by the team which contains Fe-45%, V-0.69 %, Ti-1.28%, a very attractive mixture for metallurgy. Also, pebbles of magnetite were found in Lal o Sarjangan that has a similar characteristic as Hajigak

2.5 Investment opportunity in Turkmenistan-Afghanistan-Pakistan (TAP) Natural Gas Project

The Turkmenistan-Afghanistan-Pakistan Natural Gas Project envisages the construction of a natural-gas transmission pipeline of about 1,700 kilometers to transport about 30 billion cubic meters of gas annually from the Dauletabad gas fields in southeast Turkmenistan to consumers in Afghanistan, Pakistan, and, possibly, India.

The cost of the project is estimated at about \$3.3 billion. Project implementation will take about 5 years, after the cooperating countries and other partners finally agree on project design, operating parameters, and contractual agreements.

A steering committee consisting of the oil and gas ministers from the three countries from the project has been established to follow up and supervise project development.

The project could significantly boost the economies of the countries involved, and enhance stability and improve living standards in Central and South Asia. The project is a pioneering effort to link the gas-rich Central Asian economies with the energy-deficient economies of South Asia. The project is also the first attempt to find an outlet for natural gas from Central Asia to new markets in East. However, project realization faces significant political and technical challenges.

The steering committee has met many times, and the participating countries have exhibited a strong spirit of cooperation and determination to advance the project. However, the project will become a reality only with investor of His Highness's stature who not only has the financial means but also the political influence and support in the region to make it happen.

2.6 Investment opportunity in Oil and Gas Reserves in Afghanistan

Recent surveys carried out by US Geological Survey (USGS) reveal that Afghanistan has an estimated at 1200 billion cubic meters of natural gas and over 150 million tons of oil. The new survey shows northern provinces and Herat in the west, Helmand in the south as well as Paktika in the east have most of the oil and gas resources.

Privatization of the oil and natural gas sites in the north towns of Saripul and Shebarghan are now on offer.

Natural gas in Shebarghan used to be one of Afghanistan's main export item, going mainly to Uzbekistan via pipeline. Production started in 1967 with 342 million cu m but rose to 2.6 billion cu m by early 1990s. In 1991, a new gas field was discovered in Chekhcha, Jowzjan province. The gas fields in Shebarghan were damaged by war and are now largely un-operational. Gas in Shebarghan could be used domestically for urea production, power generation, and other common use.

Despite having proven crude oil fields, particularly, in Sar-i-Pol province, almost all of Afghanistan petroleum products such as diesel, gasoline, and jet fuel (worth around \$1.5 bn and growing) are imported, mainly from Pakistan and Turkmenistan.

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2.9 Ministry of Mines Current Major Projects

2.9 World class Aynak Copper: it values about \$ 100 billions, and 5000 direct jobs but the capital expenditure is estimated to be US\$3.6 billion. The mine is located 35 km South-East of Kabul. Mining contract negotiations have been completed. It will bring from 400-600 million dollars revenue annually to the state treasury. It is already given to MCC Chines Company.

2.10 Dari Suf coking coal deposit: it creates about 5000 jobs. The mine is situated at 70 km distance from Hajigak. Anticipated revenue to the government will be more than \$1000 million.

2.11 Investment opportunity in Gokhe Coal deposits of Saripul Province

The Ministry of Mines in accordance with the Minerals Law under a Tender Process is offering the prospecting, exploration, development and exploitation of Gokhe Coal deposits of Balkhab district of Saripul province. The term of these mineral rights is for ten years.

Interested national and international entrepreneurs and companies indicate their interest by providing their sealed proposals subsequent to the publication of this announcement and upon perusal of the terms to the following no later than March 19, 2009.

2.12 Investment opportunity in Gardab chromites deposit tender of Kama of Nangarhar porvince

2.13 Investment in other minerals:

2.13 Ni, in the Ghorband Valley

2.14 Li, Be, and precious stones, in the pegmatite fields of eastern Afghanistan

2.15 Porphyry copper in central and southern Afghanistan

2.16 Uranium in southern Afghanistan

2.17 Plymetal in central Afghanistan

2.18 Au in Takhar, Badakhshan and Kandahar Zabul Region

2.19 Rare earth elements in eastern Afghanistan

2.20 Copper in Central and SE Afghanistan

2.21 There are number of public enterprises like below:

2.21 Rokham Marble Enterprise

2.22 Jangalak Enterprise