Mining Mission Mongolia

23—27 September 2013

Austmine in association with Austrade invites you to join the mining mission to Mongolia, 23 - 27 September 2013 that will including meetings with Mongolia's leading mining companies in Ulaanbaatar and site visit to the country's largest operations - Oyu Tolgoi copper/gold mine.

In Association with

Australian Government
Australian Trade Commission

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Mining in Mongolia is important to the national economy of Mongolia. Coal, copper, and gold are the principal reserves mined in Mongolia. Several gold mines are located about 110 kilometres north of Ulaanbaatar, such as Boroo Gold Mine and Gatsuurt Gold Mine. Khotgor Coal Mine is an open-pit coal mining site about 120 kilometres west of Ulaangom. Ömnögovi Province in the south of Mongolia is home to large scale mining projects such as the Tavan Tolgoi coal mine and the Oyu Tolgoi copper mine. Oyu Tolgoi mine is reported to have the potential to boost the national economy by a third but is subject to dispute over how the profits should be shared. The International Monetary Fund (IMF) has estimated that 71 percent of the income from the mine would go to Mongolia.

Mongolia's resources industry continually offers opportunities to the mining equipment, technology and services and some 45 Australian companies have established presence in the country. Over 100 Australian firms work in Mongolia in the mining and related sectors according to Austrade's statistics. This mission will be an excellent opportunity to visit Mongolia and first-hand experience and learn about the developments in the mining sector, meet your peers, network with relevant stakeholders in the business. Meetings with mining companies will include ***Oyu Tolgoi/Rio Tinto*** (www.ot.mn), ***Erdenet Mining Corporation*** (www.erdenetmc.mn), ***Erdenes Tavan Tolgoi*** (www.erdenestt.mn), ***Mongolyn Alt Corporation*** (www.mak.mn), ***Energy Resources*** (www.energyresources.mn), ***South Gobi Sands*** (www.southgobi.com). Austmine and Austrade will also organise a series of briefings with legal, financial, accounting and business advisors on how to do business in Mongolia as an exporter or how to best establish presence in the market.

Date	Program	Location
Sunday 22 September	Arrival to Ulaanbaatar	Ulaanbaatar
Monday 23 September	Market briefing on Mongolia Meetings with Mongolian mining companies	Ulaanbaatar
Tuesday 24 September	Meetings with Mongolian mining companies Australian Cocktail Reception	Ulaanbaatar
Wednesday 25 September	Departure for Oyu Tolgoi Mine Site visit Day 1	Oyu Tolgoi
Thursday 26 September	Site visit Day 2 Return to Ulaanbaatar	Oyu Tolgoi
Friday 27 September	Additional meetings with mining companies and opportunity to set up individual meetings. **MISSION END**	Ulaanbaatar

Cost: $2,290 + GST per company

Austmine services include:

- Pre-briefing information and material
- Mission coordination and communication
- Scheduling of meetings
- Ground transport
- Group interpretation services
- Production of mission booklet
- Accommodation block booking and travel coordination
- Organisation of networking reception

- Number of spaces are strictly limited to 16 persons (1 representative per company) due to seat availability on domestic carriers… so *'First come, first serve'*
- Minimum participation of 8 companies apply to the proposed program.
- Participants are required to cover the costs for international and domestic airfares, airport / hotel transfers, accommodation and meals. *Austmine will organise block bookings.*
- Austmine requires 100% payment of the service fee by **22 August 2013**. Online registration reserves your place on the event, but your place is not fully secured until the entire fee is paid. Non-payment by the applied deadline will result in the forfeit of your reserved place in the event.

REGISTRATION DEADLINE 22 August 2013

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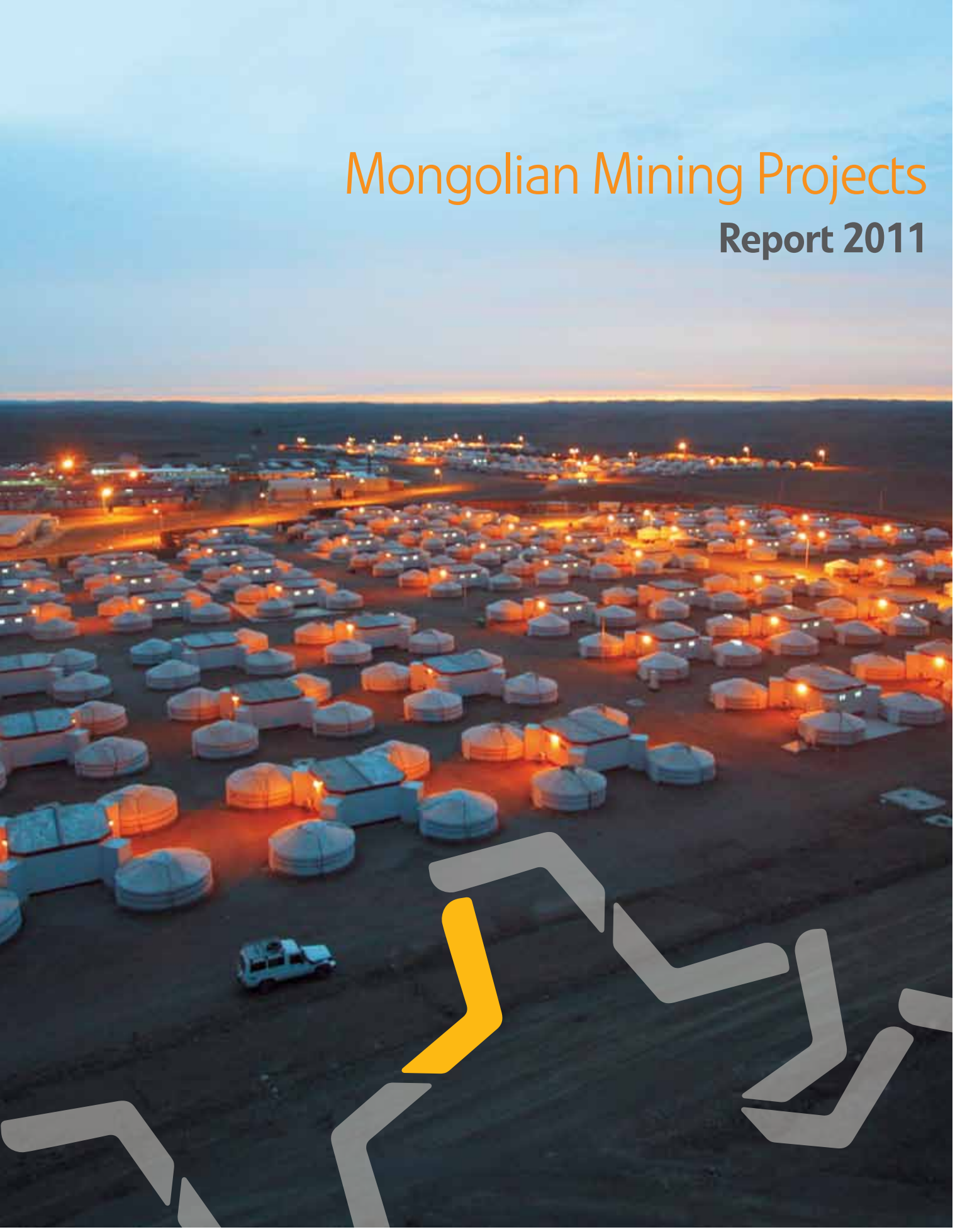
REGISTER via www.austmine.com.au/events

Mongolian Mining Projects

Report 2011



Australian Government
Australian Trade Commission

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Mongolian Mining Projects Report 2011

The *Mongolian Mining Projects Report 2011* comes at a time when Australian commercial interests in Mongolia are expanding – Australian companies with investments and service personnel in Mongolia have increased considerably over the past year.

The report will help new Australian mining equipment and services businesses assess emerging opportunities in Mongolia. Austrade has identified strong prospects in the Mongolian mining sector for a large range of Australian firms. The Mongolian Government is also encouraging greater foreign direct investment into the country, which presents opportunities for Australian mining companies.

While Mongolia has its challenges as a market – such as its climatic extremes – there are several advantages for Australians operating in Mongolia compared to other frontier markets. Most important among these is that Australia enjoys a warm relationship with Mongolia. This is not only a result of the work undertaken by the Australian private sector but also through strong linkages formed through Australia's world-class education system. The Australian Government's scholarship program, for example, has helped large numbers of Mongolians study in Australia and they have returned to prominent positions in government and business – these former students are strong advocates for Australia

In the same way, Australia's world-class mining equipment and services companies offer the emerging Mongolian industry access to leading-edge techniques and technology. This report brings to light Mongolia's ever-expanding mining industry opportunities and seeks to build Australia-Mongolia linkages through combinedindustrial development

I commend the *Mongolian Mining Projects Report 2011* to you and look forward to even stronger trade and investment ties between Australia and Mongolia.

The Hon Dr Craig Emerson MP
Minister for Trade

Map of Mongolia

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Source: Leighton Asia Limited


Source: Leighton Asia Limited


Source: Rod Commerford & Amanda Dixon, July 2010

SECTION 1

01. Historical Context

Mongolia is a landlocked country bordered by Russia to the north and China to the east, south and west. With an area of more than 1.5 million square kilometres (the world's seventh largest country) and a population of approximately 2.7 million people, Mongolia has one of the lowest population densities in the world. The landscape has several distinct geographic features, including forest mountain ranges to the north, desert and low mountain areas to the south, high mountain ranges to the west and vast plains to the east. The climate is continental with hot summers and very cold winters.

Mongolia's population is relatively homogenous in terms of ethnicity, language and religion. Its population is also relatively young with more than 60 per cent of people below the age of 30. Approximately 60 per cent of Mongolia's population lives in Ulaanbaatar (the capital city), Darkhan (an industrial centre in the north near the Russian border), and Erdenet (a city grown around a large copper mine). The rest of the population comprises mainly nomadic livestock herders.

Mongolia has had a significant impact on world history. The Hun, Turk and Mongol empires all originated from this region, with the latter controlling most of Asia and parts of Europe in the 12th and 13th centuries. In 1921 Mongolia became a communist country with Russian assistance and aligned itself with the USSR. During this period the economy was centrally planned and a Soviet-model legal system dominated the country's politics and economy until 1990.

In 1990, with the collapse of the USSR, the country erupted into riots and demonstrations, leading to Mongolia's transition to democracy and a free market economy. The first multiparty elections were held in July 1990 and the Mongolian People's Revolutionary Party (MPRP) came to power.

The Mongolian Constitution was adopted in 1992 and established an elected legislature and a directly elected president. The Prime Minister is nominated by, and serves on behalf of, the majority party in the Parliament. The Constitution enshrines the concepts of democracy, freedom of speech, judicial independence, and importantly, a market economy founded on a system of civil law.

The MPRP was victorious again in the July 1992 elections, but lost to a Democratic Party Coalition in 1996. The MPRP regained power in the 2000 elections and, surprisingly to many, formed a cabinet that incorporated a number of Democratic Party members.

02. Introduction to the Mongolian mining industry

Mongolia is rich in mineral resources and has some of the world's major mineral deposits including gold, copper, uranium and coal.

Geological data gathered since the 1920s and exploration to date has proven vast mineral reserves, but only 15 per cent of the country has been fully mapped. There are over 6,000 deposits of around 80 different minerals discovered to date in Mongolia. Only 400 of these have been defined, and of this number approximately 160 are currently being mined. There are over 200 foreign-owned and joint venture companies currently operating in Mongolia.

The mining sector is integral to the Mongolian economy and in 2008 accounted for over 20 per cent of gross domestic product (GDP), 56 per cent of industrial output, and 69 per cent of export earnings. The sector employs more than 14,000 people, which accounts for a large proportion of total manpower in the industrial sector in a country with one of the world's lowest population densities. Most of these statistics can be attributed to the Erdenet mine that accounts for over half of the country's export revenue and 25 per cent of government revenue. These figures are set to dramatically increase once the Oyu Tolgoi copper gold project commences operation in 2013.

The 2008 collapse of commodity prices, and in particular the fall in copper prices, led to a dramatic fall in income from mining. GDP plummeted from 8.9 per cent in 2008 to -1.6 per cent in 2009. From mid 2009 to present, Mongolia's economy has recovered well, in line with increasing revenue from minerals as world prices increase. Driven by the Oyu Tolgoi project, GDP growth forecast is set to average 7 per cent between 2010 and 2012. These examples highlight the government's growing dependency on mining.

03. History of mining in Mongolia

Mining in Mongolia has historically been limited to placer mining in alluvial deposits and some stone age, hard rock cuttings.

Mongolia's mineral wealth first began to be explored and exploited by the Russians after 1920, and later by Mongolians themselves. Most of the geological mapping occurred between 1920 and 1980 with the technical assistance of Russian geologists. Much of the geological data is from this era and written in Russian. However, Mongolia was under explored during this era.

Up until the 1970s, there was limited mining due to poor infrastructure, capital and technical capability. It was during the 1970s that many significant mineral deposits were brought into production through joint ventures with Russian or Eastern bloc countries.

Since 1990, the mining industry in Mongolia has expanded dramatically, particularly after the introduction of the Minerals Law of Mongolia of 1997, which saw the influx of foreign exploration companies. The number of exploration licences increased fivefold from 1997 to number some 2,500 licences, with an estimated exploration expenditure of US$18 million in 2002.

Between 2002 and 2008, the mining sector became the most important sector of the Mongolian economy, growing from 14 per cent to over 33 per cent of GDP over this period. Now, this sector alone accounts for over 70 per cent of industrial output and over 80 per cent of export earnings. Annual export earnings grew to US$1 billion at the height of the mineral boom in 2006.

The commodities price and demand slump in 2008-09 has adversely affected the Mongolian mining sector with export earnings falling and unemployment growing. However, the importance of the mining sector to the economy is likely to continue to grow and contribute to an even higher proportion of the country's GDP in the future.

04. Profile of the Mongolian mining sector

The Mongolian mining industry consists of the following forms of mining :

> **placer** – sedimentary

> **hard rock** – mineralised zones and ore bearing veins

The types of mines that occur in Mongolia include :

> **open cut**

> **underground**

> **riverbank panning and washing**

Small-scale mining activities are usually placer with some hard rock operations. There are a large number of illegal mining operations in this category that are largely unregulated by the central government, but usually have the sanction of the provincial governments (aimags). Mining methods and equipment are poor by world standards and are a cause for concern to the central government, due to the lack of environmental and safety standards.

The majority of mines are medium-sized deposits. They are predominately legal operations that have obtained exploration and mining licences from the central government, and have formal permits from the provincial authorities. Most of the foreign-owned mines in Mongolia fit into this category, with Russian, Canadian, Chinese, and Australian operations using the standards and methods employed in their respective countries. However, the majority of mines in this category are Mongolian-owned. These mines are operated with inefficient Russian mining methods and technologies, with local technical staff trained in Mongolia, Russia or the former Eastern bloc countries.

There are a small number of large-scale mines that are either Mongolian joint ventures with Russian or Chinese companies or wholly foreign-owned. These mines have the relevant licences and permits, and account for a large proportion of GDP, exports and employment in Mongolia today. Some of these deposits have been designated as 'strategic mineral reserves' by the central government, and have special conditions attached to the licences. There are only a small number of mines in this category: the Erdenet copper mine, the Bor-Undur fluorspar mine, the Oyu Tolgoi gold - copper mine and Tavan Tolgoi coal deposit.

Mining operations can operate in Mongolia by applying for and periodically renewing their exploration and mining licences with the Mineral Resources Authority of Mongolia. They can also apply for a 'stability agreement' with the central government to negotiate the terms of their licence, tax and royalty arrangements. From April 2010 the government suspended the issuance and transfer of mineral exploration licences. Inspection of all mining and exploration operations is due to be completed in December 2010. As of June 2010, 37 mines were forced to close, mainly due to environmental breaches. The inspections also hope to eliminate licence holders whose sole intent is to benefit from growth in the minerals sector and on sell their licence at a later date. This type of behaviour retards exploration growth. At present only 17 per cent of the country is currently under exploration licence.

05. Types of minerals

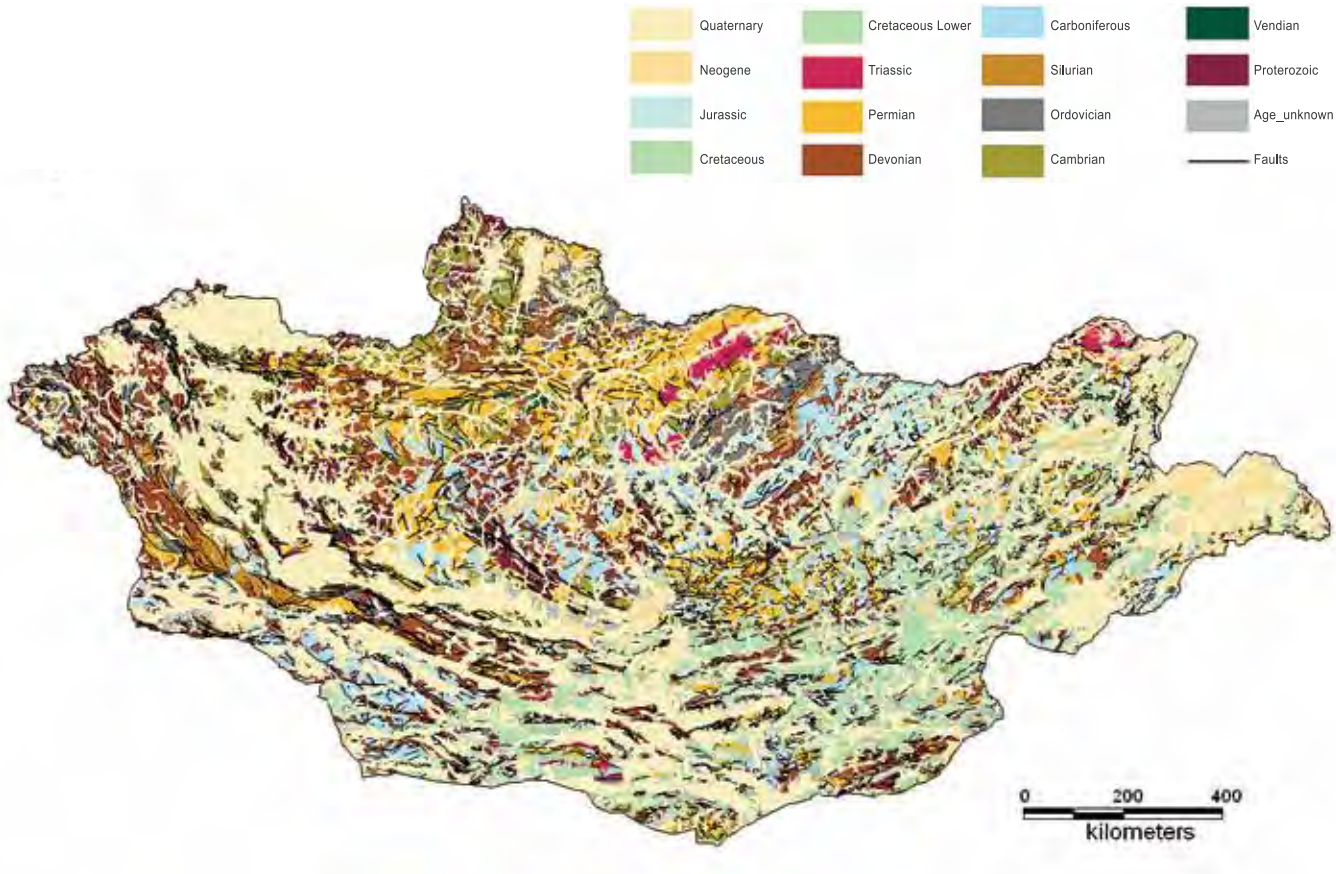
The six major mineral deposits of Mongolia include :

Mineral	Geology	Geography	Production
Gold (Au)	Mineralised deposits Gold Bearing Veins Placer deposits	There are ten major gold bearing areas in Mongolia, with the main recoverable reserves are mineralised zones and placer deposits.	Gold production grew significantly between 1990 and 2005, with 24.1 tonnes of gold produced in 2005. Data suggests this trend has declined in recent years due largely to the introduction of the windfall tax, however it is speculated some mines engage in practices to avoid paying the tax and production levels have not decreased.
Copper and Molybdenum (Cu-Au-Mo)	Copper-molybdenum (Cu-Au-Mo) mineralisation mainly occurs in three types, including copper (Cu) porphyries deposits; copper-nickel (Cu-Ni) magmatic segregations; and stratabound (Cu) deposits.	The Cu-Au-Mo deposits described above occur in three belts across Mongolia, located in the Altai, northern Mongolia, and southern Mongolia.	Production mainly through the Erdenet Mine. The mine produced 130.2 thousand tonnes of copper concentrate and 1.978 thousand tones of molybdenum concentrate for export. The development of the Oyu Tolgoi deposit is expected to significantly increase Mongolia's share of world production as a major copper producer.
Fluorspar (CaF2)	The fluorite mineralisation occurs in two economic types: epithermal vein and metasomatic ore bodies.	Three major areas, including, north Mongolia, trans-Mongolian, and south Mongolian fluorite provinces. Trans-Mongolian province has the largest reserves and is the most actively mined.	Mongolia is the 5th largest producer with 4 per cent of the world's total production. It's share metallurgical grade CaF2 increased between 2005-08, with Monros, upgrading its process to produce 120.000 tonnes of chemical grade CaF2 concentrate.

Mineral	Geology	Geography	Production
Coal (Co)	Coal occurs within units of intercalated sandstone, siltstone, and conglomerates.	Numerous. Central and southern Mongolia. The deposits of the Ulaannuur Basin are the richest.	Estimated deposits are 160 billion tonnes. Annual coal production in 2009 was 13Mt per year. Past coal production was mainly for domestic energy production. Since 2004 export opportunities have increased with the discovery of high quality, coking coal deposits at Tavan Tolgoi, Ukhaa Khugag, Bortolgoi, Ovoot Tolgoi, Khoshoot and Altai Nuurs.
Uranium (Ur)	Four major uranium belts, including the Priargun, Gobi-Tamtsag, Hentei-Daur and in the northern Mongolia uranium provinces.	The most commercially viable uranium deposits are found in the Dornod, Gurvanbulag, Mardai regions in eastern Mongolia and the Kharaat region of southern Mongolia.	Estimated reserves to be 1.3 Mt, of which 62 Mt are proven. Past uranium mining has taken place at the Mardai open pit mine from 1989-1993, but this mine has since closed.
Rare Earths (REE)	Mainly felsic and alkalic rocks	Commercially viable quantities are mainly found the Altai, north Mongolian Hentii, Hangai, southeast Mongolian, and south Mongolian provinces.	The most common and economically viable rare earth metals are: tantalum, niobium, yttirium, thorium and zircon.

Source Mbendi, Minerals Resources Authority of Mongolia, The World Bank)
Other minerals in order of commercial value include zinc, silver, tungsten, lead, nickel and iron ore.

06. Geology of Mongolia



07. Outline of mining legislation

Introduced in 1997 and modified in 2006, the *Minerals Law of Mongolia* seeks to provide a transparent licensing system for investors in the sector. This law clearly establishes that all mineral resources are the property of the State, and anyone seeking to explore or mine these resources needs to be licenced by the relevant state department.

Mongolia has only been a democracy since 1990 and this immaturity is reflected in its experience with drafting and enacting mining legislation. The mining legislation is still evolving, evident by Presidents order on 20 April 2010 to suspend all new mining and exploration licence applications, as well as a review of all 4762 existing licences. The suspension is attempting to address an estimated 40 percent of permit holders not actively developing mining assets. The National Security Council modified the President's decision on 30 April and the ban now applies only to issue of exploration licences. Transfers, mortgages and extensions are now possible. As of 1 December 2010, the ban will be completely lifted and licences will be transferred under the provisions of the Minerals Law of 2006.

As of August 2010, 452 licences had been cancelled on grounds of violation of terms. This means the area of land under licence has fallen to 17.8 percent from 24.7 percent.

The existing *Minerals Law of Mongolia 1997* covers both the exploration and mining of minerals

Exploration licence

This law allows any Mongolian citizen, foreign citizen or legal person to hold any number of mineral exploration licences of up to 400,000 hectares, but no less than 25 hectares.

An exploration licence holder is afforded:

- 1. the exclusive right to conduct exploration for minerals within the licenced boundaries for nine years (three years initially plus two extensions of three years each)
- 2. the exclusive right to obtain a mining licence for any part of the exploration licence, and
- 3. the right to transfer or pledge any part of the exploration licence.

Mining licence

Mining licence holders have :

- 1. the right to engage in the mining of minerals within the licence area for 30 years, with the additional rights to extend for an additional two terms of 20 years.
- 2. the right to sell mineral products internationally.
- 3. the right to transfer or pledge all or part of the licence, and
- 4. the exclusive right to conduct exploration for minerals within the licence area.

A mining licence holder must pay royalties to the Mongolian Government equal to 2.5 per cent of the value of products sold, with the exception of alluvial gold where the royalty is 7.5 per cent (reduced from 12.5 per cent in 2002). All companies in Mongolia must pay a company tax rate of 10 per cent up to US$3 million, and 25 per cent for profits above this threshold. A low wages tax of 10 per cent is liable if companies pay below the minimum wage set by the government and enforced by the Labor and Social Welfare Authority.

Under the mining legislation, all licence holders must provide to the government annual reports on the activities, including the environmental status, of their operations as a condition of retaining their licence.

08. Recent developments 2005-10

One of the most significant developments in the history of mining in Mongolia took place in October 2009. The landmark Oyu Tolgoi investment agreement between the Mongolian Government and the Ivanhoe-Rio Tinto joint venture on the Oyu Tolgoi Copper-Gold project was finalised. This agreement has taken over 6 years to negotiate and provides a positive signal to foreign investors, setting a benchmark for future agreements.

Under the terms of the agreement, the government of Mongolia will own 34 per cent of Oyu Tolgoi LLC, the licence holder of the Oyu Tolgoi project. Key terms of the agreement include a stable legal, operational and tax environment, provisions dealing with the government's equity participation and financing arrangements, employment and training of Mongolian labour, social and environmental programs.

One of the positive outcomes from the agreement for the industry as a whole is the January 2011 repeal of the Windfall Profits Tax. The windfall tax was enacted in 2006 in response to popular protest regarding the perceived influence of foreign mining companies, fears that mineral wealth would be exploited without benefit to Mongolia, and the belief that Mongolia was disadvantaged in previous mining agreements it made with foreign miners during the commodities boom. The windfall tax enabled the Mongolian Government to take up to 68 per cent of profits on mineral resources if the international price for the commodity rises above a certain price level (i.e. 68 per cent tax on portion gold price above US$500 and copper price above US$2,600 a tonne.)

Another recent development is that of the world's largest undeveloped coal deposit, Tavan Tolgoi. After strong speculation the deposit would be split into two and developed by two consortia; Shenhua-Peabody and a Russian-Korean partnership, the parliament decided in July 2010 the government would maintain a majority stake in the project. A daughter company of the government owned Erdenes MGL, Erdenes TT, has been formed to control the project. Erdenes TT will maintain a 50 per cent stake in the project, 10 per cent of the shares will be issued to every citizen of Mongolia, 10 per cent will be listed on the MSE and 30 per cent open to foreign investment.

At the time of printing, Erdenes TT had called for pre-qualification tenders for a contract mine operator to mine part of the deposit and a company CEO vacancy.

In July 2006 the Mongolian Government again revised the mining legislation to include a provision where licence applications had to be submitted by persons or entities incorporated in Mongolia. Foreign companies could still establish wholly-owned subsidiaries, but the entity needed to be incorporated in Mongolia and be liable for Mongolian taxes.

This legislation also introduced conditions concerning 'strategic deposits'. This is where the Mongolian Government had the right to acquire through investment or tax concessions a share of 34 per cent in those deposits that were considered to be of importance from a national security perspective, a socio-economic perspective, or had the potential to contribute to GDP by more than 5 per cent. The definition of what constituted a 'strategic deposit' was entirely at the discretion of the Mongolian Government.

The amendments also tightened the licensing requirements and the conditions for the transfer of licences, and increased the royalty rate from 2 per cent to 5 per cent.

In July 2009, the Nuclear Energy Law was enacted to regulate the exploration, development, and mining of uranium and give the state a greater degree of ownership and control of uranium resources.

This development has been closely linked with an agreement between the Mongolian Nuclear Energy Agency (NEA) and Russia's Rosatom Corporation. This agreement envisaged creation of a joint venture company between MonAtom, Mongolia's state-owned uranium development company, and ARMZ, Russia's state-owned uranium miner, to develop two uranium projects in Mongolia.

The geo politicisation of uranium deposits in Mongolia can be attributed to the invalidation of Central Asian Uranium Company Ltd (CAUC) mining licences in April 2010. CAUC is a joint venture subsidiary of Canadian Khan Resources Inc.

On 13 April 2010 Khan Resources announced that it had received notice from the NEA that CAUCs mining and exploration licences for the Khan Resources owned Dornod uranium property, had been invalidated as of October 2009, allegedly due to the company's failure to seek permission from the government for transfer of its shares to China National Nuclear Corporation subsidiary, CNNC Overseas Uranium Holding Ltd.

The Dornod deposit was at the centre of a battle for ownership of Khan Resources, between ARMZ and CNNC. In accordance with the recently enacted Mongolian Nuclear Energy Law, MonAtom would take ownership of 51 per cent of the project

As of August 2010, Mongolian courts had ruled the NEAs decision to invalidate both Khan and CAUCs exploration licences as invalid and illegal. The NEA has chosen to appeal both rulings.

There were also provisions for investment agreements in the new legislation, where investments of more than US$50 million within five years would be eligible to enter into an agreement with the Mongolian Government for terms of up to 30 years. These agreements are to incorporate eight components :

- 1. terms and conditions of the investment value and duration
- 2. tax regime
- 3. sale and export of the products
- 4. profit remittance and income disposal
- 5. conduct of mining operations with respect to public health and the environment
- 6. environmental protection and rehabilitation
- 7. regional development and the creation of local employment, and
- 8. compensation for any damages.

More recent changes in the Mongolian Government's position in the Oyu Tolgoi negotiations have seen the emergence of a preference for the secondary processing of minerals to be carried out in Mongolia. In the case of Oyu Tolgoi, the government will impose a higher royalty rate if the refining and smelting of the copper concentrate occurs outside Mongolia.

Development of heavy industry in Mongolia is a government priority. This development falls under the following key plans :

- The "Mongolian Government action plan for socio-economic development 2008-12"
- "National Comprehensive Development Policy"

Under these plans, 26 priority projects have been selected for development. Specific projects include Oyu Tolgoi mine, Tavan Tolgoi mine, chemical industry, ferrous metallurgical industry, oil refining, construction materials industry and cement production.

09. Mining infrastructure issues

There are a range of infrastructure issues to be considered before investing in mining in Mongolia.

Climate

The extreme climate of Mongolia impacts the quality of road, rail and air transport in the mining sector. Mongolia is effectively frozen for six months of the year (October – March), with temperatures regularly descending below -40°C. At the other end of the spectrum (April – September), summer temperatures in the Gobi Desert can reach over 50°C. The summer is a relatively wet season and can bring sudden river flooding and impassable roads. This makes for a challenging operational environment, where some areas frequently cannot be accessed for long periods of time and a lack of preparation can mean death. The most reliable form of transport for heavy haulage is rail, although this is not without its challenges in Mongolia.

Topography

The topography ranges from flat grassland to rolling steppe to mountainous alpine to the sandy dunes of the Gobi Desert. Much of this is traversed by wide, shallow river systems often in wide flat valleys that are susceptible to seasonal flooding.

Transport hubs and shipping

Mongolia is a landlocked country and there are issues getting people and freight in and out of the country. There are essentially three main transport hubs : Chinggis Khaan International Airport in Ulaanbaatar, Suhhbaatar Railway Station at the Mongolian-Russian border, and Zamyn Uud Railway Station on the Mongolian-Chinese border. Sea freight to Mongolia passes through either Tianjin in China (1,344km from Ulaanbaatar) or Nakhodka (4,037km from Ulaanbaatar), both of which have a bonded warehouse for Mongolian freight. From these ports the bulk of the freight is sent by rail, the remainder by road.

Roads

Mongolia has a road network of just over 11,200km, of which only about 1,500km are paved. The rest are either gravel roads or dirt tracks, and are often less rugged than the paved roads. There are 364 bridges, of which 178 are of wooden construction and have limited load capacity for heavy haulage.

There are two partially paved highways in Mongolia that intersect at Ulaanbaatar. One runs north – south from Irkutsk in Russia to Jining in China. The other, runs east – west across Mongolia, both terminating in Russia. The most modern sections of roads tend to be around the capital Ulaanbaatar and the major cities of Darhan and Erdenet.

All roads are subject to major surface damage due to the severe seasonal changes which include flooding, snow drifts and ice. Together with poor road maintenance, this results in treacherous driving conditions, which are compounded by a disregard for road rules and lack of law enforcement. There are also frequent livestock crossings as a result of the free-range herding practices and the non-existence of fencing. There are plans to connect Mongolia to the road networks of South Asia and Europe through the Millennium Road project that will eventually see a paved road built connecting east to west Mongolia.

Road vehicles

Modern vehicles are available in Mongolia, including sedans, four wheel drives, buses and trucks. These vehicles are mainly from Japan, Korea, Europe, the United States of America and Russia. There are dealers in all the major cities although the availability of parts and servicing can be a problem outside these centres. Many of the trucking companies use Russian trucks that perform well in winter, but tend to overheat in summer conditions. Therefore road transport can be unreliable, and this is compounded by the climate, topography and road conditions mentioned above.

Railways

The Mongolian rail network comprises 1,815km of broad gauge track, of which 1,110km is the Trans-Mongolian line that runs north-south and links Russia to China. Another 239km represents a separate Eastern Mongolian network that connects with the Russian network. The balance of 477km consists of spur lines of these two main lines, one of which connects the Erdenet Mine to the Trans-Mongolian line.

The railroad and rolling stock are jointly owned and operated by a Mongolian-Russian joint venture. The diesel locomotives and rolling stock are Russian, which together with the track, are generally reliable. A considerable amount of freight runs through Mongolia from Russia to China and vice versa, including timber, oil, coal, copper, grain, manufactured goods and consumer products.

In July 2010, the government announced the Master Plan for railway infrastructure development. The plan comprises of three phases. The first due to commence in November 2010 is Tavan Tolgoi to Sainshand, then to Mongolia's North Eastern border with Russia. The second phase would include a rail link from Tavan Tolgoi to the Chinese border.

Rail projects in Mongolia have been heavily influenced by geo-politics. The key reason is the Tavan Tolgoi deposit and concern over dependence on China for coal sales. The Master Plan for railway infrastructure attempts to appease nationalistic feelings and ill sentiment toward China by commencing construction of a rail link from Tavan Tolgoi to Sainshand, then to Mongolia's North Eastern border with Russia. Russia is looking to increase the use of its railways and has offered discounted rates to transport the coal to ports for on-shipment to South Korea, Japan and Europe.

It must be noted the Chinese Government has launched an initiative to build a network of railways east – west across Inner Mongolia that will provide access to the substantial number of coal projects situated close to the Chinese border.

Mongolian rail track gauge is the same as Russian (1.520-m gauge), whilst China uses narrow gauge. Consequently all rail stock requires a change of gauge at the Chinese border, causing freight delays. The gauge of new rail projects is hotly debated and is one of the reasons the rail link between the UHG coal mine and the Chinese border has been delayed. Many in government would prefer to maintain the broad gauge, citing dependence on China and National security issues.

Aviation

All airports in Mongolia experience frequent closures due to extreme weather conditions, including strong winds, sand or snow storms, or visibility problems caused by excessive air pollution. There are eight paved runways and 13 gravel runways. Only four of the paved and one gravel airport have runway lighting. Four of the paved runways exceed 2.4 kilometres and the 13 gravel runways exceed 1.8 kilometres. Most of the gravel runways can only receive unpressurised aircraft. Air charter services using turboprop aircraft are available out of Ulaanbaatar to service exploration and mining projects, and the quality of the planes and pilots is good with most having Russian training and qualifications.

Airfreight to Mongolia is expensive and costs can be as high as US$30 per kilogram depending on the route and carrier. The main carriers are Mongolian Airways (MIAT), Air China, Aeroflot and Korean Air. All have wide-bodied aircraft. These carriers have regular services to Beijing, Hohot, Seoul, Osaka, Tokyo, Irkutsk, Moscow, Berlin and Frankfurt.

Communications

The telecommunications network covers all 21 provincial centres (aimags) and more than half of the districts (soums) of Mongolia. Domestic and International calls can be made from anywhere in these areas via fixed land line. There are four mobile operators providing services to over 2.3 million pre-paid and post-paid subscribers using GSM 900, 1800 and CDMA technologies. These mobile networks cover all aimag and soum centres. Calling

outside of mobile and fixed line networks is possible using satellite telephone.

Broadband Internet is available in all aimags and some soum centres, but it can be a challenge to access the Internet in remote parts of Mongolia. There are 56 companies with licences to provide Internet Services, but most concentrate their services in Ulaanbaatar. The network is either XDSL, or fibre optic cable, and a number of ISPs provide Wi-Fi services. Three mobile operators now offer 3G services within their network allowing web based connectivity on mobile devices.

Fuel

Petrol and diesel are available for road and mobile equipment. This fuel is imported from China and Russia by rail and stored in strategic reserves around the country. Gas is not readily available. Petrol is RON92 unleaded.

Power

Electricity is generated by five coal fired power stations, but can be unreliable with blackouts in the capital and other centres. Most hotels and industries have back-up diesel-electric generators. Power is 220-240W. Finding reliable power outside these centres or away from the main transport arteries is problematic, as the distribution infrastructure is poor by world standards and the network suffers from a lack of maintenance.

Water

Mongolia is an arid country; northern and western regions may enjoy 250-400mm of rainfall and surface flows occur, but mean annual rainfall in the southern Gobi Desert is limited to 70mm. Under these conditions groundwater presents the best, and in some instances only, water source.

The groundwater development potential of the region has not been established; several projects and mines under development have established water security from groundwater sources, following significant investment and time in exploration and testing, as is demanded under local regulations and to meet international standards. Some sources lie more than 50km from the project demand centre and involve significant conveyance and operational cost.

Whilst not an issue at the current time, competition for scarce water sources may be expected to increase and in areas hosting multiple projects with high water demand, water scarcity may ultimately constrain development. Site specific assessments are required to minimise project risks arising from water.

10. Opportunities in the mining sector

There are a number of opportunities for Australian companies in the Mongolian mining sector. Australian goods and services have a good reputation in the Mongolian market, and there is strong brand awareness across all segments of the market.

Equipment and consumables supply

There are over 200 foreign and local exploration and mining companies operating in Mongolia. This number is set to grow in the future. Opportunities exist for Australian suppliers to supply larger Mongolian, foreign-owned and joint-ventured projects in the higher end of the market, as these companies have higher operational standards and are quality conscious. Small - mid sized local operators tend to be more price sensitive and purchase a greater volume of their equipment and consumables from China, although there is a growing appreciation for quality versus cost in this segment of the market. To take full advantage of these opportunities it is critical to establish a market presence in order to offset the geographic advantage of Chinese competitors.

Technical services

There are opportunities for technical services in the Mongolian mining sector, particularly in all fields of engineering, geology, hydrology, geophysics, mine software, technical training and environmental management. Foreign miners currently employ the majority of these services, but there are successful examples of Australian companies working with Mongolian miners and the government, which is likely to be the main opportunity for growth in the near future.

Vocational training

The rapid rise of large scale mining projects and the agreements between mining companies and the government that stipulate a ratio of Mongolian worker to foreigners has created a desperate need for skilled workers. Mongolia's vocational training sector is in dire need of an overhaul to meet the needs of modern mining equipment and standards. The present system is lacking a national accreditation framework, is based solely on theoretical based learning and is reliant upon a curriculum that, in many cases, has not been updated since the Soviet era. The prime opportunity is the provision of education for trades that will support these projects, followed by mine safety and operations. Opportunity exists to partner with local TVET intuitions, government and mining companies who desperately need the skilled labour. Key areas that require development are: curriculum development, teacher training and development, management of facilities, staff and students. There is an immediate need to develop pilot programs with the government and Oyu Tolgoi to develop and implement programs for specific trade qualifications such as electricians and maintenance fitters.

Higher Education

Many of the universities in Mongolia lack world class curriculum and learning materials. Opportunities exist for foreign universities with a strong mining focus to partner with these institutions to help raise the standard of learning and better equip graduates to meet the needs of a modern mining sector. A common remark from foreign mining companies is that Mongolian graduates would benefit from a bridging year at institutions in countries such as Australia, to raise them to the standards acceptable to modern mining companies.

Joint ventures with local partners

There are considerable opportunities for investment in the form of joint ventures with local partners. Over 1,000 of a total of 1,100- odd mine development and exploration licences are held by Mongolian companies, but only about 2 per cent of these licences are being developed at the time of writing. Most are small to medium sized deposits

that lack the capital, equipment and technical capability to develop the projects. This is a focus for the Mineral Resources Authority of Mongolia (MRAM) and Foreign Investment and Trade Agency of Mongolia (FIFTA), to facilitate foreign joint ventures with local companies, as the best strategy to bringing these idle projects into development.

Direct investment

Mongolia has some of the most significant mineral deposits in the world. Only 15 per cent of the country has been fully geologically surveyed, and of this more than 6,000 significant deposits of 80 different minerals have been discovered. This situation alone makes Mongolia one of the more attractive countries for green field exploration and mining. The market is relatively easy to enter with a straightforward process of obtaining relevant licences to operate.

The main opportunity for direct foreign investment is in small to medium sized projects, as these mining licences can be granted relatively quickly by MRAM alone without being referred to the government for ratification, provided the company is not applying for a 'stability agreement'. Examples in this category include South Gobi Sands Ovoot Tolgoi project and MAK Corporations Eldev coal mine which both continue to operate successfully with relatively few interruptions to production.

Large-scale projects determined to be 'strategic deposits' require approval from the government and are subject to vigorous debate over who has ownership and benefits from the countries resources. The ratification of the Oyu Tolgoi investment agreement between the government and Ivanhoe/Rio Tinto has created a 'model' template for future stability agreements.

Non-mining opportunities

As the mining sector lifts the wealth and development of Mongolia, increasing demands will be placed on other sectors to meet the needs of these projects and an advancing economy. Large mine sites, such as Oyu Tolgoi, require a vast range of supporting infrastructure and services, such as urban planning, food, entertainment, health and medical, transport and construction.

11. Market challenges

There are some important market challenges in Mongolia that need to be considered in any market entry strategy.

Perceptions of foreign investment

Mongolia has a history of distrust of the West and capitalism. Mongolians are more familiar with Russia and Eastern Europe, as many have either lived or studied in these countries and are more likely to speak Russian than English. This is largely due to their historical situation, having been a socialist republic of the USSR and a command economy until 1990. This is particularly evident in the older generation, who still harbour some Cold War perceptions. However, the educated younger generation is generally less suspicious of the West, particularly the increasing number of young Mongolians who have studied abroad.

Economic nationalism

Mongolia has experienced a renewed sense of nationalism and independence since 1990 and this is evident at all levels of the political economy. This sense of national pride is an influential factor at all levels of decision making in government and the commercial sector. Politicians have a tendency to use this to their electoral advantage and practice popular politics with economic issues. They are also conscious that their electoral success is dependant on a constituency that is highly nationalistic, and the importance of this is compounded by the relatively high value for every vote in a country of approximately 2.7 million people.

New democracy

It is worth noting that democracy is only 20 years old in Mongolia. The Constitution has provided the structure of government, but many of the processes and mechanisms of decision making are still evolving. Slowly, Soviet era politicians are being replaced by younger, free market educated technocrats. In the mining sector, this is particularly evident by frequent changes to the mining legislation and foreign investment laws. Since 1990, there have been three major reforms to the mining law.

Politicisation of process

There is no effective mechanism or process for the review of foreign investment in Mongolia. The Foreign Investment and Trade Agency of Mongolia (FIFTA) is the authority responsible for licensing foreign investment. FIFTA however does not have the same clear authority as many other country's foreign investment approval agencies such as Australia's Foreign Investment review board. From a mining perspective, this means that large scale mining investments, and especially those determined to be strategic deposits, are decided by Parliament or politicians rather than professional civil servants trained and qualified in areas of foreign investment. There are, however, a number of highly qualified and experienced advisers to the Prime Minister, President and Cabinet covering areas such as foreign investment, mining legislation, royalties and taxation, and foreign affairs. Soviet era politics are still often in play, the legacy of the soviet era planned economy, and as a result investors should be prepared to invest extra time than would be taken in more developed countries.

Bureaucracy

Mongolia inherited the Soviet system of bureaucracy that presided over a planned, command economy. During this era, the state bureaucracy managed the economy, and their active role has continued despite the change to a free market economy in 1990. The degree of government intervention in the economy is high by Australian standards, and this is compounded by overlapping of authorities, and a lack of cooperation or coordination between departments in many areas. The bureaucratic process can be fluid, as government departments can unexpectedly change their requirements and procedures, for example, indefinitely calling a moratorium on all new exploration and mining licence applications. However, FIFTA provides a service to new investors to help navigate the Mongolian bureaucracy and facilitate cooperation between the various departments for the purpose of attracting investment into the country.

Continuity of governance

It is worth noting that politics in Mongolia revolves around a four year cycle. At the end of this cycle, and depending on the outcome of the election, there is a change in personnel at all levels of government, including ministers, department heads, provincial governors and their support staff. This has implications for the continuity of governance and the following practical implications for the exploration and mining industry. Firstly, the officials are replaced when they have just become proficient in their roles, and there is a lag time before the new officials learn the role. Secondly, the relationship-building process started with one official is ended prematurely and has to begin again with their replacement every four years.

Trade unions

The communist era left behind a very well organised labour movement in Mongolia. In the mining sector the main trade union is the Geology and Mining Trade Union, with all trade unions belonging to the Confederation of Mongolian Trade Unions. The unions are organised at the company level and are affiliated with the Geology and Mining Trade Union. In Mongolia, there is a history of union disputes involving foreign miners, with pay, severance and safety issues being the main causes. An example is the dispute between the Boroo Gold Company (Centerra Gold) and the trade union of Boroo Gold Company

in May-June 2009. This caused production to stop at the mine when mine workers joined a strike to protest against 70 workers being laid-off.

Availability of capital

The circumstances for obtaining capital in Mongolia is still not unlike those faced by other ex-communist countries. Before 1990, there were no private banks, private companies or private property rights; hence no capital or equity markets to raise capital. Although there is a private banking system in Mongolia now, capital can be challenging to obtain for local companies and near impossible for foreign companies. There has been increased focus to provide access to capital through foreign markets, particularly the Hong Kong and German stock exchanges, yet many Mongolian companies have a long way to go before they meet the requirements of these markets. In the past 12 months there has been a heightened focus on raising capital and a number of firms are attempting to attract greater flows of capital to Mongolia.

Lack of skilled labour

There is a critical lack of skilled labour in Mongolia. Exploration and mining companies have difficulty finding labour to support their operations, including drilling, blasting, loading, haulage, processing, mine administration, and IT support. Most companies have had to invest in their own in-house training programs and infrastructure to support their operations, due to the limitations of the vocational training and educational institutions in Mongolia. Those that do exist use outdated Russian curriculum and equipment that are no longer used in Russia. In early 2010, the Agency of TVET (Technical and Vocational Education and Training) was created to reform the outdated system and develop curriculum that aligns with the labour market needs, specifically in the mining and construction sectors. A 20 member body called the Mongolia Council of Vocational Training has been established that incorporated the Ministry of Education, Ministry of Labour and Social Welfare, the Business Council of Mongolia, the Mongolia Chamber of Commerce and Industry, and representatives of the private sector. This Council aims to develop a coordinated approach to the skills shortage issue. The Millennium Challenge Corporation has allocated US$47 million to TVET, the project scope addressing curriculum delivery through to career guidance and labour market information systems. In July 2010, Oyu Tolgoi announced US$58 million to be allocated to vocational training over the next 5 years. This funding will be used to build new and upgrade existing colleges and provide the curriculum and training required to produce graduates that have the skills to meet the needs of the OT project.

Technical skill shortage

Mongolia also has a shortage of technical skills, especially in modern techniques and methods of mine management, mechanical engineering, process engineering, geology, hydrology and geophysics. The majority of available labour has tertiary qualifications based on an outdated Russian curriculum, and tend only to have limited experience with equipment and processes outside Mongolia, Russia or Eastern Europe. Even by Russian standards the curriculum taught at the only technical university in Mongolia, called the University of Science and Technology in Ulaanbaatar, is outdated and in need of overhaul to meet the anticipated needs and demands of the mining sector in the future.

Environmental concerns

Mongolians have a deep concern for the environment. The country only recently emerged from a nomadic, herding way of life, with an animist religious tradition. Although half of the population reside in the capital, the country is predominantly rural and there is still a strong connection to the land. Mongolians are fearful and suspicious of foreign mining company's intentions, regarding the environment. Past and present mining methods employed by Mongolian, Russian and Chinese projects have left considerable environmental damage. The mining legislation and licence conditions place considerable importance on environmental management plans for projects as a prerequisite to operating in Mongolia and retaining an exploration and mining licence.

Corruption

The potential investor needs to be aware of growing complaints of corruption from foreign operators and investors in Mongolia. On the official side, there are claims of misconduct in mining licence application and tender processes. Foreign licence applicants are often informed that a mysterious local licence has already been granted for a property they are applying for, or an unexpected decision has been made to put the property out to tender. Other reports claim that frequent and irregular inspections by numerous government departments and authorities require constant payment to maintain permits and licences to operate in Mongolia. It is not always considered a level playing field for Western listed companies competing against other foreign investors whose practices and behaviour for securing projects, does not face the same level of scrutiny in their home countries.
Nevertheless, it is important to remember that Australian law imposes very harsh penalties for any Australian person or company that engages in the bribery of foreign public officials in a business transaction, even when engaged in outside of Australia. The penalties range from a maximum of ten years' imprisonment for individuals, to fines for bodies corporate of up to $11 million, or three times the value of any benefits obtained, or 10% of the company's annual turnover, whichever is greater.

Competitive environment

There is intense competition in all areas of the Mongolian mining sector. Traditionally the USSR and now the Russian Government and its privatised mining companies are still the biggest investor in the Mongolian mining sector. Although this is changing with more foreign companies entering the market, Mongolian companies are more familiar with Russian and East European companies, due to a greater understanding of their language, customs, methods, technologies and equipment. This is obviously not the case for foreign mining companies, with the two next most prominent investors in the Mongolian mining sector being Canadian and Chinese companies. Canadian mining companies were one of the first western operators in Mongolia and have had a growing presence ever since, operating a number of prominent projects including Boroo Gold and Oyu Tolgoi among other exploration projects. The Chinese have tended to joint-venture with local Mongolian companies, and are a source of major competition in terms of investment capital and the supply of consumables, equipment and labour. Korean companies are the biggest investors in the civil construction sector of Mongolia and their investment in the mining sector is expanding every year. Following these investors come the Japanese, UK and USA.

12. Key mining and inwards investment authorities

Ministry of Mineral Resources and Energy

The Ministry of Mineral Resources and Energy (www.mmre.gov.mn) is the ministry responsible for the mining and petroleum industries in Mongolia. This is one of 13 ministries and oversees the Mineral Resources Authority (www.mram.gov.mn), which is the enabling authority for all exploration and mining activities in Mongolia.

The Mineral Resources Authority of Mongolia (MRAM), also known by its Mongolian acronym AMXEG, is an independent implementing agency of the Ministry of Mineral Resources and Energy and is responsible for compiling information about Mongolia's mining industry, issuing mineral licences, conducting geological surveys and archiving geological data.

The main responsibilities of the Mineral Resources Authority include:

- registering applications for exploration and mining licences
- providing relevant government departments with information about mining for policy formulation and the drafting of legislation
- conducting research to assist the development of the mining sector and to inform potential investors
- advising, assisting and providing information to investors seeking to invest in the Mongolian mining sector, and
- promoting investment opportunities in the resources sector of Mongolia.

The authority implements and administrates these responsibilities through its various divisions, including the Geology Research Division, Mining Research Division, Coal Research Division, Geology and Mining Cadastre Division, Geology and Information Project.

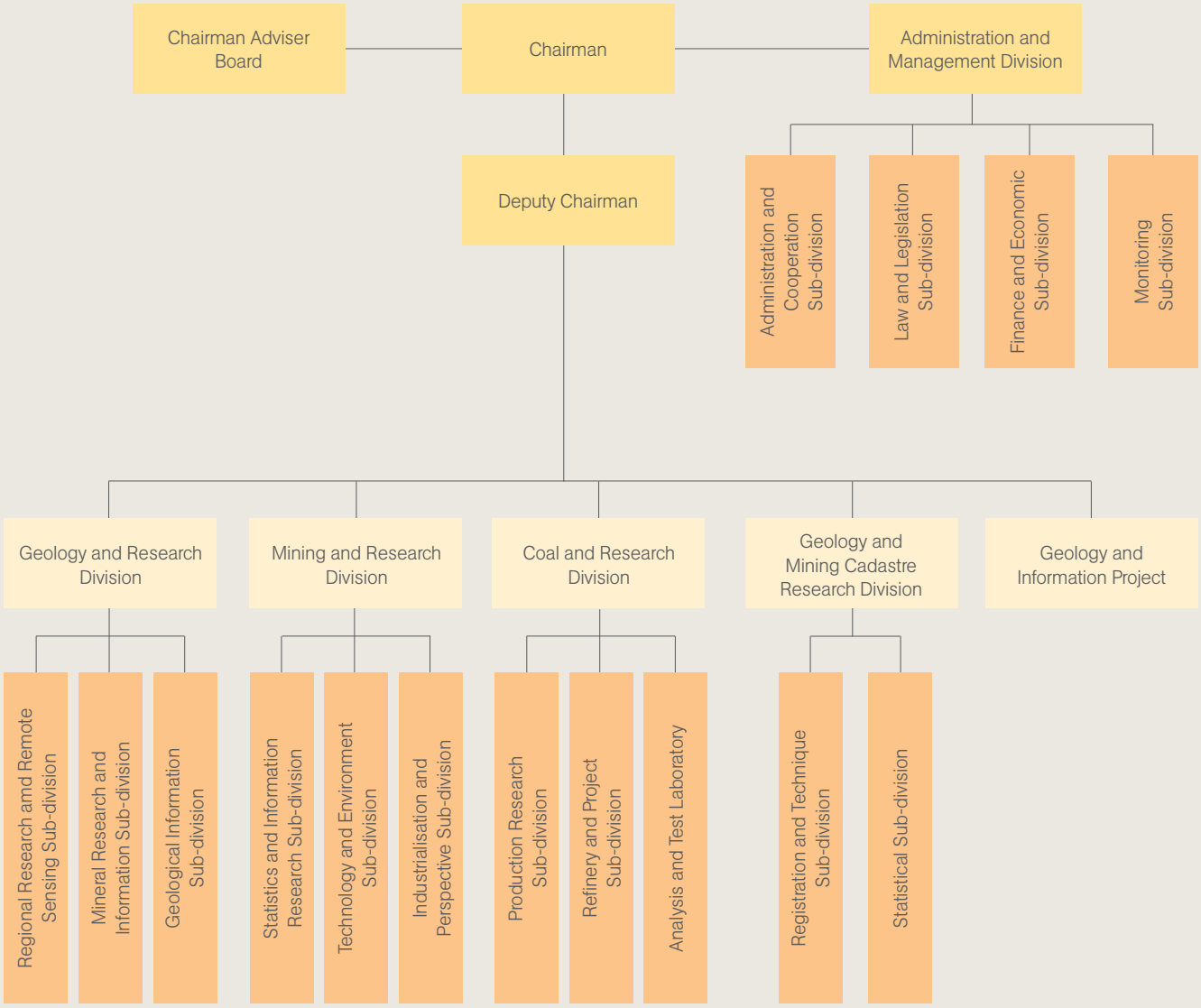
The **Geology Research Division** provides the government with geological information for the formulation of policies and programs concerning geological research and development. Within this division, the Geological Information Centre archives all geological information, maps and records for private and public use.

The **Mining Research Division** is responsible for conducting research on mineral commodities, compiling statistics on the mining industry in Mongolia, developing regulations for environmental protection and labour safety, and promoting investments in the mining sector.

The **Coal Research Division** is responsible for researching, supervising, and inspecting coal mining techniques and technologies.

The **Geology and Mining Cadastre Research Division** is responsible for issuing and managing licences for mineral exploration and mining activities, maintaining the registers, collecting and distributing fees, and reviewing and resolving boundary disputes.

Organisational Structure Chart of MRAM



FIFTA – Foreign Investment and Trade Agency of Mongolia

The other agency relevant to mining investment is the Foreign Investment and Trade Agency of Mongolia (FIFTA, www.investmongolia.com).

This is the government-enabling agency responsible for foreign direct investment into Mongolia. The main responsibilities relevant to mining investment include:

1. Investment promotion

- investment promotion, including organising conferences and workshops on investment opportunities in Mongolia, arranging bilateral business meetings, and hosting business and trade missions.
- investment matchmaking services to both foreign and Mongolian investors seeking investment and business cooperation; to introduce investment projects to foreign investors, and
- provides promotional publications and materials on the investment and business climate of Mongolia.

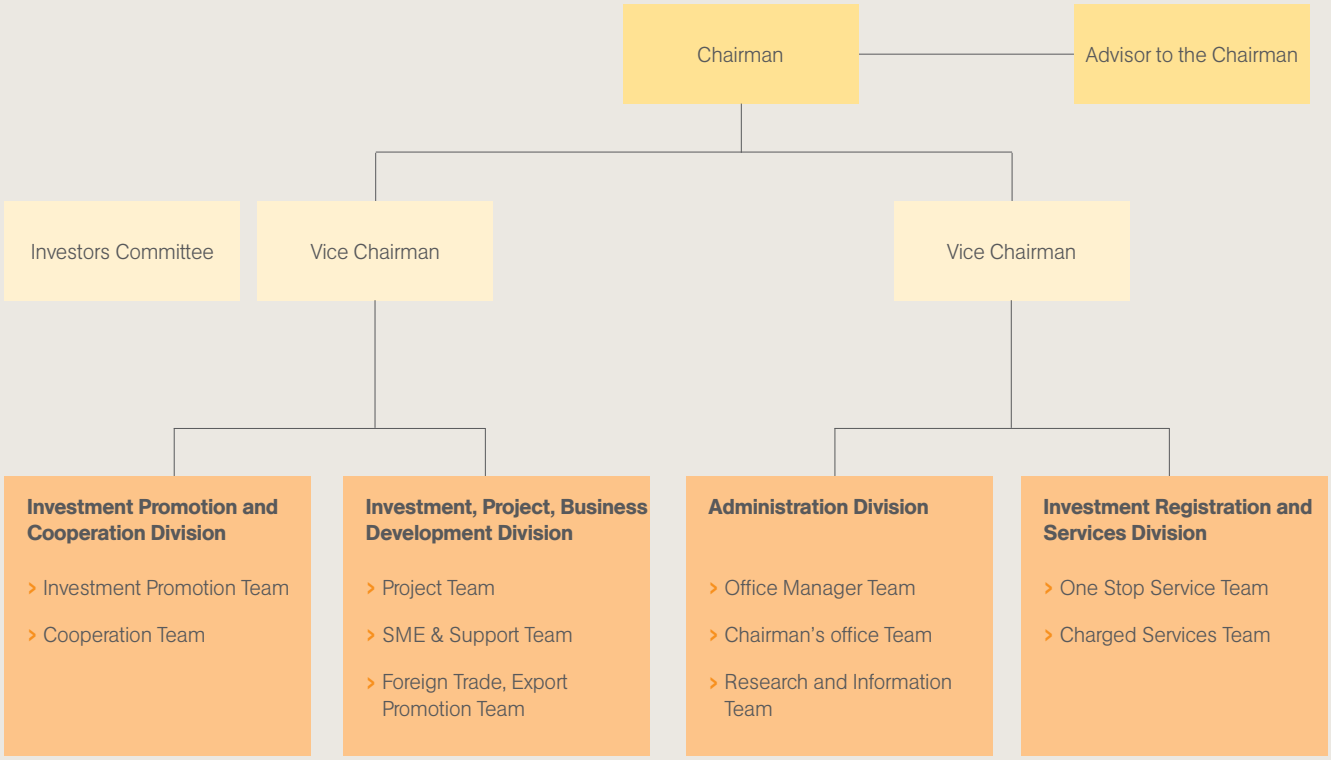
2. Investment registration

- pre-registration service provides investors with first-hand information, advice and guidance on investing and doing business in Mongolia, including professional assistance in compiling registration documents.
- registration service to issue investors setting up a company or representative office in Mongolia with a certificate of incorporation, and
- post-registration service assists investors in the initial stages of the investment process, including supporting import of capital and equipment, facilitating residency permits and multiple entry visas with relevant authorities, and assisting the investor to navigate and manage the relationship with other relevant enabling agencies to ensure the smooth passage of investment.

3. Investment projects and business development

- provides investors with business start-up related information including on the business legal environment, banking and financing issues, main business costs, site development, and licensing regulations.
- assists investors in developing investment project plans, better managing financial and human resources and finding out more about product markets, and
- supports investors in promoting their products, finding suitable partners for investment projects and bringing their requirements to the policy-making level.

Organisational Structure Chart of FIFTA



SECTION 2

01. Existing Mines

Existing Mine # 1

Name of Existing Project	Erdenet
Mineral mined	Copper (Cu) and Molybdenum (Mo)
Location	400 kilometers NW from Ulaanbaatar Erdenet city, Orkhon Province
Operator of mine (company name)	Erdenet Mining Corporation LLC (EMC)
Web Address of the mine operator	**www.erdenetmc.mn**
Investors & per cent Shares	EMC is a Mongolian-Russian joint venture. 51 per cent of shares are owned by the State Property Committee of Mongolian Government, and 49 per cent of shares are owned by the Russian Government.
History of Mine: when started, change of owners, political problems, etc	Mining operations started in 1976 and there have been limited changes to the ownership structure and minimal disruptions to operations.
Description of mining operation (underground/open cut. Process. Concentration, washing, etc.)	Open pit mine. Biggest mine in Mongolia with crushing, grinding, sorting, processing, concentration and pouring plant.
Proven mineral reserves	Estimated 1.78 Million tonnes
Grade of ore	**Ore content:** Cu 0.579 per cent; Mo 0.018 per cent **Metal recovery:** Cu 86.15 per cent; Mo 40.82 per cent
Production capacity	25 million tonnes of ore per year. Over 530 thousand tonnes of copper concentrate and 3 thousand tonnes of molybdenum concentrate per year.
Description of Infrastructure (roads, rail, power, water, etc.)	Erdenet is connected by rail to the East-Siberian railway network and to the Chinese railway network. It is also connected to the Irkutsk highway. The mine has its own power plant, road aggregate and explosive plant. A city for some 6000 employees has been built alongside the mine. The mine has a Solvent Extraction Electro Winning plant capable of producing 3,000 tonnes of CU cathode/year. Plans to upgrade plant to produce 20-25,000 tonnes/year.
Comments on project (profitability, political issues, technical challenges, etc.)	Head grades are expected to decline from 0.61 per cent to 0.5 per cent as the mine advances in to the primary sulfide zone. It is a high cost producer (US0.57¢/lbCu) and uses outdated Russian mining methods and processing technology. Infrastructure is in need of upgrading and production capacity is questionable. Feasibility study to examine using heap leach and roasting technology to increase grade of Mo-oxide.
Mine Manager's name email address and/or telephone no	Dr. Ing. D.Tsogbaatar Director of Ulaanbaatar Representative Office Ulaanbaatar Representative Office Peace Avenue -14, Ulaanbaatar, Mongolia Tel: +(976) 99115878 Fax: +(976) 11 312039

Existing Mine # 2

Name of Existing Project	Boroo Gold Mine
Mineral mined	Gold
Location	110km North of Ulaanbaatar
Operator of mine (company name)	Borro Gold Co. LLC
Web Address of the mine operator	**www.centerragold.com**
Investors & per cent Shares	Centerra Gold 100 per cent
History of Mine: when started, change of owners, political problems, etc	Boroo deposit was discovered in 1910 and was mined until 1920s when a civil war interrupted production. Mining resumed in 1933 and a refinery was installed in 1942. In 2002, Cameco Gold purchased a controlling interest in AGR, and contracted Clough Engineering to build a processing plant that was completed by the end of 2003. The mill went into production in March 2004. In May 2009, Ausenco was contracted to upgrade the plant and increase capacity.
Description of mining operation (underground/open cut. Process. Concentration, washing, etc.)	3 small open pit mines. Drill, blast, loader hauled at a rate of 6,000 tonnes per day. The ore body extends over an area measuring 2.5 by 1.5 kilometres. Mineralised zones occur up to 400 metres wide and typically average from 10 to 30 metres in thickness. The mill features a conventional design that consists of crushing, grinding, gravity concentration, cyanide leaching and gold recovery in a carbon-in-pulp (CIP) circuit.
Proven mineral reserves	20 million tonnes containing 1.04 million ounces of gold.
Grade of ore	3.68 grams per tonne
Production capacity	1.75 million tonnes of ore milled at a recovery rate of 90 per cent to produce more than 30 tonnes or an average of 180,000 ounces of gold per year.
Description of Infrastructure (roads, rail, power, water, etc.)	Boroo is located 10km from the paved Ulaanbaatar – Irkutsk highway 35km from Trans-Mongolian railway. 3km from mains power lines 12km from water source
Comments on project (profitability, political issues, technical challenges, etc.)	6 year life. Mine operations was suspended in May 2009 for four months due to industrial strike by 200 workers protesting against lay offs and following inspection by the State. Professional Surveillance Inspectorate.
Mine Manager's name email address and/or telephone no	Ian McNeil Senor Operations Manager Boroo Gold Co. Ltd Bodi Tower, 11th Floor, Sukhbaatar Square PO Box 223 Ulaan Baatar, Mongolia 210648 Tel: +(976) 11 317798 Mobile: +(976) 9911 0766 Fax: +(976) 11 316100 Email: ian.mcneil@centerragold.mn

Existing Mine # 3

Name of Existing Project	Bor - Undur, Airag, Adag, and Urgen
Mineral mined	Fluorspar (CaF2) and Gold (Au)
Location	380km SE of Ulaanbaatar. Khentii aimag.
Operator of mine (company name)	Mongolrostsvetmet Mining Corporation LLC (Monros).
Web Address of the mine operator	**www.mongolros.mn**
Investors & per cent Shares	JV between the Mongolian Peoples Republic and the USSR. 51 per cent owned by the State. Property Committee of Mongolia and 49 per cent owned by the Federal Property for the Russian Federation.
History of Mine: when started, change of owners, political problems, etc	Production started in 1982. A floatation mill was competed in 1985 with full production in 1986. Further improvements to the mill in 1998 increased production.
Description of mining operation (underground/open cut. Process. Concentration, washing, etc.)	3 open pit mines and 1 underground mine. Three stages of crushing and two stages of grinding with closed circuit. Conventional flotation process in column and pneumo-mechanical cells.
Proven mineral reserves	6.0 Mt
Grade of ore	40 per cent CaF2 average
Production capacity	500 thousand tonnes / year of CaF2 ore per year 120 thousand tonnes / year of CaF2 acid grade concentrate 50 thousand tonnes / year of CaF2 metallurgical grade concentrate 1500 kg Au / year
Description of Infrastructure (roads, rail, power, water, etc.)	Ore is delivered by railroad from Airag and Urgen, by truck from Adag mine, and by loader from the Bor-Undur mine, the mines crushing and grinding plants, but the main sorting and mineral processing plant is located at the Bor Undur mine, which has all the transport, railway, administration and maintenance infrastructure.
Comments on project (profitability, political issues, technical challenges, etc.)	The company profits have been adversely affected by the fall in the fluorspar price and a fall in demand from its main market in Russia.
Mine Manager's name email address and/or telephone no	Mr D.Batsaikhan Head of Procurement Department Mongolian-Russian JV "Mongolrostsvetmet" Address: Bayanzurkh Distruct, Ulaanbaatar, Mongolia Tel: +(976) 11458072, 458521 Fax: +(976) 11458380, 458430 Email: mailbox@monros.mn Mr T. Dorjbal Sales Director Tel: +(976) 99115657, Email: dkhulan@magicnet.mn G. Yondon, Business Development Manager Tel: +(976) 99093694 Email: yondon_g@yahoo.com

Existing Mine # 4

Name of Existing Project	Tumurtiin Ovoo Zinc Mine
Mineral mined	Zinc
Location	570Km East from Ulaanbaatar. Suhbaatar Province.
Operator of mine (company name)	Tsairtmineral LLC.
Web Address of the mine operator	**www.tsairt.mn**
Investors & per cent Shares	Joint Venture of NFC (China) 51 per cent and Metalimpex LLC (Mongolia) 49 per cent
History of Mine: when started, change of owners, political problems, etc	15 year Stability Agreement signed with the Government of Mongolia in 1998. Feasibility study completed in 1999. Construction of mine commenced in 2002. Mining commenced 2005.
Description of mining operation (underground/open cut. Process. Concentration, washing, etc.)	Open pit.
Proven mineral reserves	9.2 Mt of zinc ore with 951 thousand tonnes of zinc.
Grade of ore	13.6 per cent
Production capacity	Mining and processing 300 thousand tonnes / year zinc ore 66 thousand tonnes / year zinc concentrate 34 thousand tonnes / year zinc
Description of Infrastructure (roads, rail, power, water, etc.)	The mine is fed by a 110/10 kW substation, which branches out through a "T" connection from Choibalsan-Baruun Urt 110 kV high voltage electricity transmission line. Water is supplied to the mine through a 32-km long pipe from the Shine Us aquifer in Asgat soum of Sukhbaatar province. Produced zinc concentrates are exported via truck and rail.
Comments on project (profitability, political issues, technical challenges, etc.)	14 year life. Contract value of the project is USD 44.59 million. RMB 200 million was provided by China EXIM Bank as preferential loan. 25 years of service life at 300kt/pa mining rate and 66kt/a of concentrate.
Mine Manager's name email address and/or telephone no	S.Batkhuu Vice Director Ulaanbaatar Office Suite 202, G&D Center, Student Street 16/3, 8th Khoroo, Sukhbaatar District, Ulaanbaatar- 48, Mongolia Tel: +(976) 11 325342 office +(976) 99114538 mobile Fax: +(976) 11 326900 Email : oyungerel@tsairt.mn

Existing Mine # 5

Name of Existing Project	Eldev Coal Mine
Mineral mined	Coal
Location	300 km SE of Ulaanbaatar. Dalanjargalan soum of the Dornogobi province in South-Eastern Mongolia.
Operator of mine (company name)	MAK Corp
Web Address of the mine operator	**www.mak.mn**
Investors & per cent Shares	Mongolyn Alt Corporation (MAK) and Chin Hua Corporation
History of Mine: when started, change of owners, political problems, etc	Started mining operation from 2001.
Description of mining operation (underground/open cut. Process. Concentration, washing, etc.)	Open Pit Soil removal with Caterpillar bulldozer and excavator Coal transport with Chinese Tonly, Northbenz, and Russian Belaz heavy trucks Chinese FGX 12 technology to clean coal Chemical laboratory equipped with the US LECO technology
Proven mineral reserves	32.5 Mt
Grade of ore	High calorie stone coal deposit
Production capacity	500 thousand tones annually,
Description of Infrastructure (roads, rail, power, water, etc.)	The mine is 20 km away from a railway line. In 2001 MAK Corp built an Electric Transmission. Line between Choir City and Eldev Mine Site that is capable of supplying 10 kW electricity. In 2003-2004, MAK Corp constructed a high quality unpaved road between Eldev Mine and Olon Ovoot railway station. In 2002-2004, MAK Corp built a warehouse and train loading facility equipped with equipment from the Russian ASI Corp.
Comments on project (profitability, political issues, technical challenges, etc.)	Coal supplies the Power Plant at Darkhan, Erdenet Ore Dressing Plant and the Khutul Cement and Lime Factory. In 2007, a test on smokeless semi-coking coal successfully completed in Chinese Shenmu coal plant. USD 45 million worth credit agreement has been concluded between the “Mongolian Gold” company and the European Bank for Reconstruction and Development. The funds will be earmarked for the construction of a smokeless semi-coking fuel plant using Eldev coal. Planning to produce 100,000 smokeless semi-coking coal for demand of dwellers of Ulaanbaatar city
Mine Manager’s name email address and/or telephone no	Mr B. Nyamtaishir, President Tel: +(976) 99114770 Erdenetsetseg, Assistant to President Tel: +(976) 99631277 14th Building Khoroo 13 Bayanzurkh District Ulaanbaatar – 210349, Mongolia Tel: +(976) 11 455882, 450199, 455785 Fax: +(976) 11 458075 Email: mak@mak.mn Website: www.mak.mn

Existing Mine # 6

Name of Existing Project	Ukhaa Khudag
Mineral to be mined	Coal
Location	550 km to the south of Ulaanbaatar city Omnogovi aimag, Tsogttestsii soum, Tsagaan-Ovoo bagh
Operator of mine	Energy Resources LLC
Investor organisations	Energy Resources LLC
Shareholders	Petrovis (Mongolia) MCS (Mongolia) Monnis (Mongolia) Shunkhlai (Mongolia)
Current status	Started operation
Type of mining operation	Open-pit (boxcut)
Proven mineral reserves	Est. 364 Mt
Grade of ore	High quality coking coal
Planned production capacity	2009: 0.6Mt coking coal 2010: expanded to 1.75Mt of coking coal
Infrastructure	245 km road to Mongolian-Chinese border checkpoint of Gashuun Sukhait to be upgraded to compacted gravel by 2011, and there are plans to upgrade this to a sealed road in the near future by 2012. Commenced a feasibility study for the construction of railroad to the Chinese border. Commenced construction of a coal dressing plant with water obtained from onsite bores. Currently using diesel generators, but the mine will be connected to the central electricity network in 2010.
Comments	Leighton Contractors LLC currently contracted for 4 years to build and operate the mine. Leighton's are tendering for the planned railway line.
Contact details and contact person	Dr. Battsengel Gotov Chief Executive Andrew Little Technical Director Energy Resources LLC Central Tower 2 Sukhbaatar square, SBD-8 15th floor Ulaanbaatar 210620A Mongolia Phone: +(976) 70122279, 70132279 Fax: +(976) 11 322279 Email: contact@energyresources.mn Website: www.energyresources.mn

Existing Mine # 7

Name of Existing Project	Ovoot Tolgoi
Mineral to be mined	Coal
Location	Omnogobi Aimag, Gurvan Tes soum ,Umnugobi province
Operator of mine	South Gobi Sands LLC
Investor organisations	South Gobi Energy Resources Ltd.
Shareholders	80 per cent Ivanhoe Mines, remaining shares listed as TSX Venture ExchangeTrading Symbol: SGQ
Current status	Started operating in 2008
Type of mining operation	Open cut. Initially: Liebherr 994 excavator, Letourneau 1350 loader and Terex 100t haul trucks; 2009: Liebherr 996 hovel and Terex 240t haul trucks Secondary focus on developing underground mine
Proven mineral reserves	150Mt measured and indicated, 29Mt inferred
Grade of ore	7527kCal/kg to 7778kCal/kg (low ash, low sulphur)
Planned production capacity	1Mt in 2008, rising to 8Mt by 2012
Infrastructure	Connected with China by gravel road and a railroad is being planned.
Comments	Planned railway and paved road south to the Chinese border for export of coal. Will meet with an existing railway running north from China to the Mongolian-Chinese border. Coal-handling facility to be completed in early 2011.
Contact details and contact person	David Bartel President & Executive Director Southgobi Sands LLC 10th Floor, Monnis Tower Chinggis Avenue –15, 1st Khoroo Sukhbaatar District Ulaanbaatar, Mongolia 210648 Tel: +(976) 11 310775 Fax: +(976) 11 311469 Email: info-southgobi@southgobi.com Website: www.southgobi.com

Existing Mine # 8

Name of Existing Project	Nariin Sukhait
Mineral to be mined	Bituminous Coal
Location	Located 880 km away from Ulaanbaatar city. Gurvantes Soum, Umnugobi Province. 50 km away from Shiveekhuren border port between Mongolian and Chinese border.
Operator of mine	Mongol Alt (MAK) LLC
Investor organisations	Mongol Alt (MAK) LLC (in 2002 started operation as Mongolian Chinese JV Chin Hua-MAK-Nariin Sukhait LLC)
Shareholders	Chin Hua Corporation, Inner Mongolia
Type of mining operation	Open cut Soil removal by Caterpillar bulldozers and excavators Coal transport by Chinese Tongli heavy truck US LECO laboratory
Proven mineral reserves	Geological reserve of the deposit is 229 Mt of which 17 Mt will be exploited
Grade of ore	Volatile matter: 32 per cent – 35 per cent Phosphorous: 0.001 per cent – 0.010 per cent Alkali (K2O and NaO): 0.23 per cent – 1.01 per cent Sulfur: 0.3 per cent – 1.0 per cent Ash: 5.5 per cent – 12.0 per cent
Planned production capacity	2008 : 1.5 Mt 2009 to 2013 : 3 Mt
Infrastructure	MAK Corp built a 35 kWt electricity transmission line between mine site and Chinese border Paved road almost completed between mine and Chinese border. In 2008, MAK Corp was granted permission to construct 47km railroad between the mine and the Chinese border.
Comments	A direct correlation appears to exist between increasing coal depth and increasing free swelling indices (FSI), with the higher values ranging between 6 and 8 Selective mining may be able to produce a raw, low ash (less than 7 per cent), high FSI (greater than 6) and low alkali (less than 0.35 per cent) product
Contact details and contact person	B. Nyamtaishir, President Tel: +(976) 99114770, Erdenetsetseg, Assistant to President Tel: +(976) 99631277 P.O.Box 237 14th Building, Khoroo 13 Bayanzurkh District Ulaanbaatar 210349 Mongolia Phone: +(976) 11 455785, 455338 Fax: +(976) 458075 Email: info@mak.mn Webiste: www.mak.mn

Existing Mine # 9

Name of Existing Project	Ulaan Ovoo
Mineral to be mined	High quality bituminous coal
Location	Selenge aimag (northern area, 17km from Russian border)
Operator of mine	Prophesy Resources Corp. (TSX-V:PCY, OTC: PRPCF, Frankfurt: 3P1)
Current Status	11 May, the company entered into a Mine Services Agreement with Leighton Asia Limited with a view to a pilot production of 250,000 tonnes commencing in late 2010. 21 May, the company secured rail loading facilities to transport over 1.5 million tonnes per year to Russia and China. 7 June, 2010 exclusive agreement with Sojitz Corporation of Japan to jointly market thermal coal from Ulaan Ovoo coal deposit to buyers in China. Wardrop Engineering completed a mine prefeasibility study in July.
Type of mining operation	Open cut
Proven mineral reserves	174.5 million tons Measured, 34.3 million tons Indicated 35.9 million tons of Inferred thermal coal
Grade of ore	Ash: 12.46 per cent Sulfur: 0.4 per cent Nitrogen: 1.26 per cent Volatile matter: 28.65 per cent Average calorific value : 5,204 kcal/kg
Planned production capacity	6 Mt a year for 20 years (maximum) Prefeasibilty study considering a total of 74 Mt over a 13 year mine life 2010 – 0.3 mt 2011– 3.5 mt
Infrastructure	Water supply from nearby Zelter River 120km from Trans-Mongolian Railway 20kms from paved Trans-Mongolian Hwy connecting Ulaanbaatar and Irkutsk. Power supply from main power lines on highway.
Comments	March 31, Prophesy Resources Corp. merged with the Redhill Energy to create New Prophesy company.
Contact details and contact person	John Lee Co-Chairman & CEO Prophesy Resources Corp Tel : +1 800 851 1528 O. Enkhbaatar Executive Director Prophesy Resources Corp Mongolia office Tel : +(976) 99116509 Email : obaatar@gmail.com Suite 203, 15A-5, Ambassador Office Peace Avenue, Sukhbaatar District Ulaanbaatar, Mongolia Tel: +(976) 11 331669 Fax: +(976) 11 312721 Email: info@prophecyresource.com Website: www.prophecyresource.com

Existing Mine # 10

Name of Existing Project	Bayangol
Mineral to be mined	Iron
Location	Selenge aimag, Yeruu soum, Selenge province
Operator of mine	Boldtumuer Yeruu Gol LLC
Investor organisations	Credit Suisse, Clarity Partners, Temasec Holdings,
Shareholders	Dorniin Gobi LLC owns 50 per cent, Virginia and Great Britain's Hong Kong Lung Ming Investment Holding Limited own 50 per cent
Current Status	Production started in 2008
Type of mining operation	Open cut
Proven mineral reserves	Total definite reserve is 82.5 Mt, but potential to reach 150 Mt.
Grade of ore	45 per cent average iron content
Planned production capacity	2009-2028: 3 Mt/year
Infrastructure	A 98km long railroad has been completed from the Dulaankhaan station. The mine is provided with improved road access and high voltage power lines and a workers camp.
Comments	Bold Tumur Yeruu Gol LLC was founded in 2004 to mine iron ore and export iron concentrate to China.
Contact details and contact person	Boldtumur Yeruu Gol LLC Western Selbe Street-20, 5th khoroo, Chingeltei district, Ulaanbaatar city, Mongolia. Tel: +(976) 11 329360 Fax: +(976) 11 318088 Email: info@bteg.mn Website: www.bteg.mn

Existing Mine # 11

Name of Existing Project	Tumurtei Gol
Mineral to be mined	Iron
Location	381 km from Ulaanbaatar Selenge aimag, Khuder soum
Operator of mine	Erdes Group LLC
Investor organisations	Erdes Holdings LLC
Shareholders	Erdes Holdings LLC 100 per cent
Current Status	Exploitation has been started 2008
Type of mining operation	Open cut
Proven mineral reserves	Est. 16.4 Mt resource 13815,8 Mt probable 2584.3 Mt inferred
Grade of ore	48.37 per cent average grade of ore 0.695 per cent average sulphur content 0.035 per cent average phosphorate content
Planned production capacity	1 million tonnes/year @ 63 per cent recovery rate
Infrastructure	Transportation by heavy trucks 90km from the mine to the Dulaankhaan railroad station by an improved road.
Comments	Looking for investment needed to increase production capacity.
Contact details and contact person	L. Natsagdorj President Mobile phone: 99114731 Erdes Holding LLC New Century Plaza, 6th floor Chingis Avenue 15 Sukhbaatar District Ulaanbaatar, Mongolia Phone: +(976) 11 331107, 331110 Fax: +(976) 11 331102 Email: secretary@erdes.mn, Website: www.erdes.mn

Existing Mine # 12

Name of Existing Project	Tayannuur
Mineral to be mined	Iron
Location	Located 1300 km to the southwest of Ulaanbaatar. Gobi-Altai province, Tseel soum. 168km to Burgastain checkpoint on Mongolian-Chinese border
Operator of mine	Altain Khuder LLC
Investor organisations	Bulgan Alt LLC 79 per cent; Deutsche Bank 21 per cent
Shareholders	Altain Khuder LLC 100 per cent
Current Status	Exploitation started in 2008
Type of mining operation	Open cut Terrex screening and crushing plants Caterpillar mobile plant
Proven mineral reserves	Est.16.19 Mt 6.41 Mt to be mined.
Grade of ore	B-41.24 per cent, C-24.9 per cent
Planned production capacity	2008: 507 thousand tonnes 2009: 2.1 Mt tonnes 2010: 3.2 Mt tonnes
Infrastructure	170 km gravel road to be constructed by 2010. Railway to Chinese border planned by 2013. 260 km electric transmission line from Chinese Santanhu border city by 20011.
Comments	Financial source to expand mine, infrastructure development uncertain
Contact details and contact person	R.Tsetsegbazar CEO of Bulgan Alt LLC Tel : +(976) 99115603 G,Batdorj Executive Director of Altain Khuder LLC Corpus 1, “D” unit, “Tengeryn Tsag” Center, Olympic Street-12, Sukhbaatar District, 1st khoroo, Ulaanbaatar, Mongolia Tel: +(976) 11 324930 Fax: +(976) 11 327991 Email: info@tayan-nuur.com Website: www.tayan-nuur.com

02. Planned Mines

Planned Mine # 1

Name of Existing Project	Oyu Tolgoi
Mineral to be mined	Copper-Gold
Location	600km south of Ulaanbaatar, 80km north of Mongolian-Chinese border Khanbogd soum, Omnogovi aimag
Operator of mine	Oyu Tolgoi LLC
Investor organisations	Ivanhoe Mines (66 per cent), Government of Mongolia (34 per cent), strategic investment by Rio Tinto
Shareholders	Rio Tinto became one of the major shareholders in October, 2006 with a 9.95 per cent share of Ivanhoe Mines with the purchase of 37.1 million shares @ US$8.18/share for a total of US$303million. In September, 2007, Ivanhoe obtained a non-revolving, convertible credit facility from Rio Tinto worth US$350million for maintaining mine development. In June 2010, Rio Tinto increased further its ownership of Ivanhoe Mines up to 29.6 per cent by providing additional US$393.1 million funding. Joint-venture with Entree Gold Inc. (80 per cent Ivanhoe, 20 per cent Entree) on the Heruga Deposit and Hugo North extension concluded June 2008. Ivanhoe has a 70 per cent participating interest in all minerals extracted on these properties from surface to 560m depth, and 80 per cent participating interest in all minerals extracted on these properties from below 560m depth.
Current Status	Investment (Stability) Agreement signed in October 2009 with 34 per cent equity stake owned by the Mongolian government, and full scale construction began in June 2010 with some 4,400 workers on the site. Works on Shaft No.1 and No.2, as well as the ore concentrator are near completion.
Type of mining operation	Open pit and block cave. Open pit during the first years of operation on the Southern Oyu deposits, and an underground block cave operation is developed to produce ore from the northern Hugo Dummett Deposit.
Proven mineral reserves	Indicated Resource (as of 1/3/2008) : 1,387,430,000 tonnes @ 1.33 per cent Cu, 0.47g/t Au Inferred Resource (as of 1/3/2008) : 2,157,130,000 tonnes @ 0.81 per cent Cu, 0.34g/t Au Probable Reserve (as of 1/1/2006) : 930,000 tonnes @ 0.5 per cent Cu, 0.36g/t Au Project total for "indicated resource" is: 40,680Mlbs of Cu @ 0.6 per cent CuEq cut-off and 30M oz Au
Grade of ore	See above
Planned production capacity	In May 2010 revised Integrated Development Plan was released with projected 1.2 billion pounds (544,000 tonnes) of copper and 650,000 ounces of gold every year for the first 10 years after operations start in 2013.
Infrastructure	Fluor Corporation is in charge of overall program management, as well as services related to engineering, procurement and construction management for the ore processing plant and mine-related infrastructure such as roads, water supply, a regional airport and administration buildings. Work on concentrator 80 per cent complete Currently, temporary diesel-fuel power station onsite Airstrip onsite, capable of carrying small aircraft Planned haulage road to join coal haulage road from Tavan Tolgoi to Chinese border
Comments	Oyu Tolgoi expected to contribute ~ 34 per cent to GDP of Mongolia. Tsagaan Tolgoi, a coal deposit 115kms from Oyu Tolgoi, and owned by Ivanhoe subsidiary, South Gobi. Energy Resoureces (TSX-V: SGQ), will supply 25 million tonnes of coal to the Oyu Tolgoi project for large scale power generation.
Contact details and contact person	Maria Derby-Parker Corporate Affairs and Social Responsibility Tel: +(976) 99113339, Email: LaytonC@Ivancorp.net Ivanhoe Mines Mongolia Inc. LLC 6th Floor, Monnis Tower Chinggis Avenue -15, 1st Khoroo, Sukhbaatar District Ulaanbaatar, Mongolia 210648 Tel: +(976) 11 331880, Fax: +(976) 11 331890 Email: OTLLCinfo@ot.mn, Website: www.ot.mn

Planned Mine # 2

Name of Existing Project	Tavan Tolgoi
Mineral to be mined	Coal
Location	540kms south of Ulaanbaatar. Tsogttsetsii soum, Omnogovi aimag
Operator of mine	To be selected
Investor organisations	Government of Mongolia will seek a strategic investor offering 30 per cent equity ownership in Erdenes Tavan Tolgoi share holding company.
Shareholders	Under the Parliament decision in June 2010, a state owned share holding company will be established, with 10 per cent shares to be distributed to each citizen free of charge, 10 per cent to be sold to domestic companies at nominal price, and 30 per cent to be sold to the strategic investor. GoM will retain 50 per cent ownership.
Current Status	Small-scale production (2 Mt exported to China in 2009) by a small property owned by Local government and several domestic companies.
Type of mining operation	Open pit
Proven mineral reserves	900.5 Mt of Measured and Indicated coking coal 881 Mt of Inferred coking coal 634 Mt of Measured and Indicated thermal coal 4 billion tonnes of Inferred thermal coal
Grade of ore	Ash: 13.9-15.8 per cent Sulfur: 0.5 per cent Volatile matter: 24.4-31.4 per cent Average calorific value : 4,800-5,000 kcal/kg
Planned production capacity	15-30 Mt of coal per annum
Infrastructure	Planned railway from Tavan Tolgoi to Gashuun Sukhait (Mongolian-Chinese border checkpoint), a total of 270km, will carry 7-12 million tonnes of coal (running through Oyu Tolgoi, a distance of 164km, south-east). Planned water pipeline from “Balgasyn Ulaan” Lake to Tavan Tolgoi; a distance of 70km. Diameter of pipeline is to be 600mm. Mine has a 100MWatt power station
Comments	Leighton LLC is the mining contractor on the Energy Resources licence adjacent to the Tavan Tolgoi property. If production is at 15Mt/year, government is expected to receive US$8.7 billion revenue from the project; if 30Mt/year, US$13.9 billion. Expected to have a workforce of 1,700 people, with more than 90 per cent being Mongolian. Expected investment of US$2.087 billion for 15Mt/year in the first five years. If, at 30Mt, expected investment of US$2.436 billion tonnes. June 2010, the Mongolian Parliament decided to establish a steta owned share holding company which will, in its turn, will sell 30 per cent equity stake in the project to strategic investors, tender and contract mine operator, marketing and sales company.
Contact details and contact person	B.Enebish Executive director Erdenes MGL Tel: +(976) 99118409 Diplomat Bldg. 95/63, 5th khoroo, Chingeltei District, Ulaanbaatar-211238 Mongolia Tel: 976 -70110735, Fax: 976 -70110725 Email: info@erdenesmgl.mn, Website: www. erdenesmgl.mn

Planned Mine # 3

Name of Existing Project	Tumurteit
Mineral to be mined	Iron
Location	Selenge aimag, Khuder soum, 90 km from Dulaankhaan railway station, 380km from Ulaanbaatar, 30km to Russian border
Operator of mine	Darkhan Metallurigcal Plant LLC, 100 per cent
Investor organisations	None
Shareholders	None
Current Status	Exploitation started in 2008
Type of mining operation	Open pit
Proven mineral reserves	229.3 Mt
Grade of ore	B-51.64 per cent, C-50.17 per cent
Planned production capacity	1 Mt / year ore, 4,0-6,5 Mt / year of concentrated iron ore.
Infrastructure	Dulaankhaan railway station is connected by an improved gravel road to the mine. 98km railroad to adjacent licence area owned by Boldtumur Eruu Gol LLC. 15-20 km electricity line connecting Darkhan city with the 110 kW Bugantai plant southwest of the mine
Comments	Mongolian – Chinese JV called Tumurtei Khuder LLC mined 461thousand tonnes of iron ore in 2006. Presently not mined. A special licence owned by a Chinese company was terminated and the licence transferred to the locally owned Darkhan Black Metallurgical Plant.
Contact details and contact person	Darkhan Metaalurgical Plant LLC Darkhan Soum, Darkhan Uul Province Mongolia Tel : +(976) 1372 24203 Fax: +(976) 1372 23946 Email: info@dmplant.mn Website: www.dmplant.mn

Planned Mine # 4

Name of Existing Project	Tsagaan Suvarga
Mineral to be mined	Copper
Location	Mandakh soum, Dornogobi province
Operator of mine	Mongol Alt (MAK) LLC
Investor organisations	Mongol Alt (MAK) LLC
Shareholders	B. Nyamtaishir 100 per cent
Current Status	Exploitation not yet started
Type of mining operation	Heap leaching
Proven mineral reserves	252 Mt of ore (1.3 million tons in Cu) measured and indicated.
Grade of ore	0.25-0.04 per cent
Planned production capacity	5 thousand tonnes / year cathode copper, 11 years mine life
Infrastructure	Planned construction of copper concentrator for sulphide ores with a projected capacity of 14 million TPY ore processing. Planned construction of SXEW plant for oxide ores with a projected capacity of 5,000 TPY cathode copper.
Comments	MAK Corp paid previous state budget exploration expenses plans to construct sulphide extraction plant by 2011. The deposit has been included in 2009 into the list of 15 strategic deposits subject to GoM 34 per cent ownership. EGIS (Australia), METCON (USA) are in negotiation to conduct feasibility study.
Contact details and contact person	B. Nyamtaishir, President Tel : +(976) 99114770, Erdenetsetseg, Assistant to President Tel : +(976) 99631277 P.O.Box 237 14th Building, Khoroo 13 Bayanzurkh District Ulaanbaatar 210349 Mongolia Phone: +976 11 455785, 455338 Fax: +976 458075 Email: info@mak.mn Webiste: www.mak.mn

Planned Mine # 5

Name of Existing Project	Gatsuurt
Mineral to be mined	Gold
Location	110km Northwest of Ulaanbaatar. Mandal soum, Selenge province
Operator of mine	Boroo Gold LLC
Investor organisations	Centerra Gold Inc.
Shareholders	Centerra Gold Inc 100 per cent
Current Status	Exploration. Ore body defined.
Type of mining operation	Open cut
Proven mineral reserves	11.3 million tonnes of ore containing 1,227,000 oz gold reserve.
Grade of ore	3.6 gm / tonne
Planned production capacity	2010-2013 : 9,370 million ounces / year
Infrastructure	Gatsuurt deposit located 35 km from Boroo deposit. Construction of gravel road between Gatsuurt and Boroo already completed. Oxide and refractory ore from the Gatsuurt deposit will be processed at the Boroo facility. A bio-oxidation circuit will be constructed at the Boroo facility to process the refractory ore from Gatsuurt. Proposal to build ore haulage road to existing Boroo mill. Ausenco contracted to upgrade the Boroo mill capacity.
Comments	According to the plan by Centerra Gold it will start mining operation in Gatsuurt deposit by June 2010, but the investment agreement between the Centerra Gold and the Government of Mongolia has been postponed for unknown period of time.
Contact details and contact person	Ian McNeil Boroo Gold Co. Ltd Bodi Tower, 11th Floor Sukhbaatar Square PO Box 223 Ulaan Baatar, Mongolia 210648 Tel: +(976) 11 317798 Mobile: +(976) 9911 4974 Fax: +(976) 11 316100 Email: ian.mcneil@centerragold.mn Webiste: www.centerragold.com

Planned Mine # 6

Name of Existing Project	Khushuut
Mineral to be mined	Coal
Location	Khovd Province, Western Mongolia, 1,500km west-southweast from Ulaanbaatar, 210km south of the provincial capital of Khovd, 310km northeast from Yarant border crossing at Mongolian-Chinese border
Operator of mine	Leighton Asia
Investor organisations	Mongolia Energy Corporation, HK listed public company (MEC)
Current Status	Exploitation has been started 2010
Type of mining operation	Open pit, 19 years mine life @ 8.0Mtpa
Proven mineral reserves	Est. 460Mt, including 181Mt premium coking coal 140 Mt JORC in-place coal reserves
Grade of ore (per cent)	Moisture (Ad) / Ash (dry) / Volatile (daf) C (1.40 float): 0.85 / 6.77 / 18.00 B (1.40 float): 1.05 / 7.95 / 20.92
Planned production capacity	2010 0.5Mt 2011 3.0 Mt 2013 8.0 Mt
Infrastructure	310km paved road from the mine to Yarant border checkpoint on the Mongolia-Chinese border to be completed in 2010. 1,100t/h coal preparation plant planned for 2013
Comments	October 2009, John T. Boyd Company completed prefeasibility study. January 2010, MEC signed a ten-year contract with Baosteel Group Xinjiang Bayi Iron and Steel (Baosteel Bayi) to supply 9.6-10mt of coking coal. June 2010, MEC awarded a six-year, US$232m contract to Leighton to develop and operate the mine.
Contact details and contact person	James J. Schaeffer CEO Mongolia Energy Corporation Limited 40th Floor, New World Tower 1 16-18 Queen's Road Central Hong Kong Tel: +(852) 2138 8000 Fax: +(852) 2138 8111 Email: enquiry-hk@mongolia-energy.com Mongolia Office, MoEnCo LLC 11th Floor, Central Tower Sukhbaatar Square 2 Sukhbaatar District 8 Ulaanbaatar 210620A Mongolia Phone: +(976) 70110567, 70110568, 70110569 Fax: +(976) 70120572 Email: ulziinaran.pu@mongolia-energy.com Website: www.mongolia-energy.com

Planned Mine # 7

Name of Existing Project	Ovoot Coking Coal project
Mineral to be mined	Coking Coal
Location	Khuvsgul Province, Northen Mongolia
Operator of mine	Aspire Mining Limited
Investor organisations	Aspire Mining Limited
Current Status	Aspire is completing an infill drilling program in order to have an initial JORC compliant resource in the December quarter 2010
Type of mining operation	Open pit
Grade of ore	Average specific energy of 6611kCal/kg
Contact details and contact person	David Paull Executive Director Aspire Mining Limited Tel: +(61) 8 9381 1995 Fax: +(61) 8 6380 2316 Email: david@aspireminginglimited.com Unit 2, 454 Roberts Road, Subiaco, WA 6008, Australia PO Box 1918, Subiaco, WA, 6904, Australia Website: www.aspireminginglimited.com

Planned Mine # 8

Name of Existing Project	Unst Khudag coal mine
Mineral to be mined	Coal
Location	Dundgobi Province
Operator of mine	Hunnu Resources LLC
Investor organisations	Hunnu Coal Limited
Current Status	Trial mining operation commenced in August 2010 for potential off-take customers independent test work. Drilling program commenced with the aim of generating JORC resource in the second half of 2010
Type of mining operation	Open cut
Proven mineral reserves	Exploration target of 250Mt-500 Mt
Grade of ore	high quality thermal coal with Qdb = 5,289 kCal/kg to 5,941 kCal/kg, Qdaf = 6,311 kCal/kg to 6,572 kCal/kg, Ash = 9.6 per cent to 27.5 per cent, and Analytical moisture = 6.71 per cent to 9.34 per cent.
Infrastructure	180km from existing rail
Contact details and contact person	Matthew Wood Executive Chairman Hunnu Coal Limited Tel: +(61) 8 9200 4267 Fax: +(61) 8 9200 4469 Email: info@hunnucoal.com Level 1/33 Richardson Street West Perth, Australia Website: www.hunnucoal.com

Planned Mine # 9

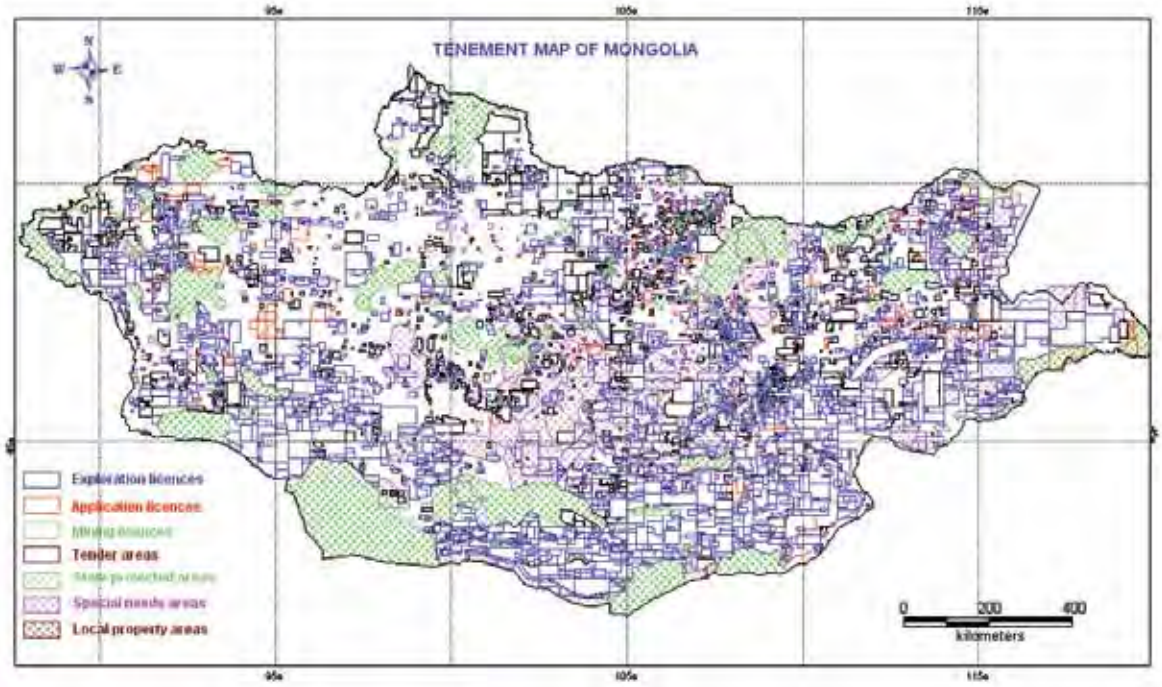
Name of Existing Project	Togrog Nuur
Mineral to be mined	Brown coal
Location	Tov aimag, Bayanjargalan soum, Tuv province
Operator of mine	CAMEX LLC
Investor organisations	Togrog Nuur Energy LLC
Shareholders	Togrog Nuur Energy LLC is wholly owned by Ming Hing Group, Hong Kong
Current Status	Exploitation began in 2008, produces smokeless coal briquettes
Type of mining operation	Open cut
Proven mineral reserves	91.9Mt.
Grade of ore	Ash-: -20 per cent Sulfur-: 1.07-1.16 per cent Volatile matter: 38-53.59 per cent Average calorific value-: 4,084.7-5,712 kcal/kg
Planned production capacity	2010-2032 : 2 Mt/year
Infrastructure	22km from Trans-Mongolian Railway and road 15km from electricity line
Comments	Possible gasification
Contact details and contact person	Bayangol Hotel Office Chinggis Avenue Sukhbaatar District Ulaanbaatar, Mongolia Phone: +(976) 1170110140, 99060006 Fax: +(976) 11319140 Email: info@tne.mn Website: www.tne.mn

SECTION 3

Source: Leighton Asia Limited

Maps

Tenements



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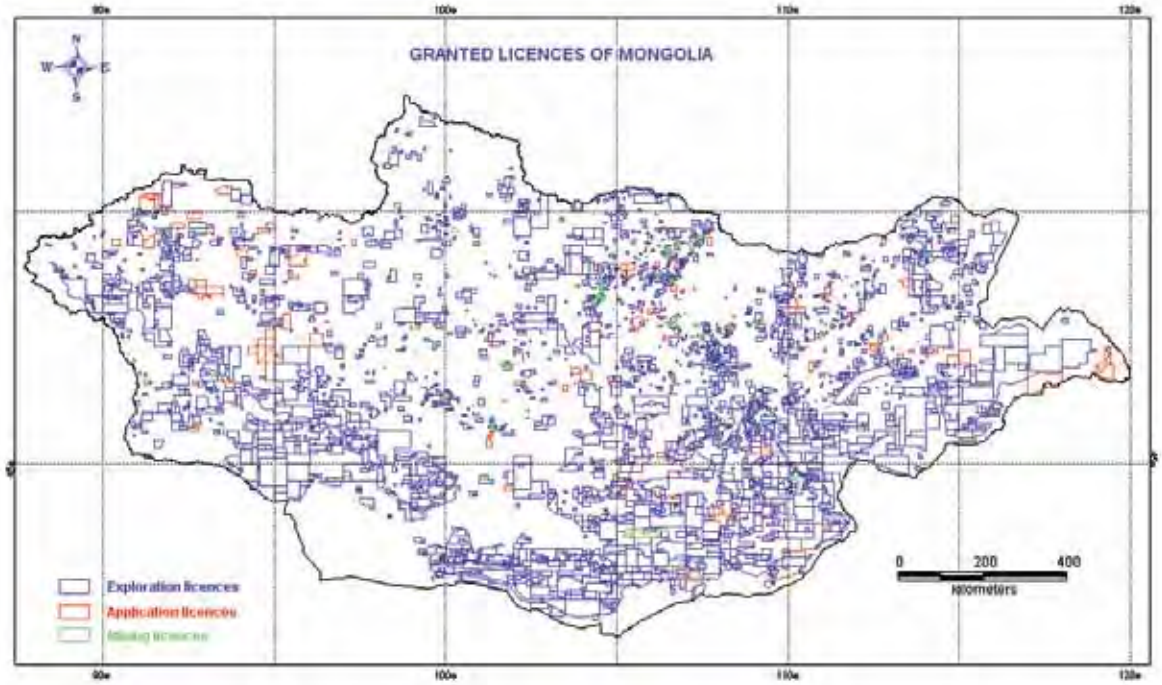
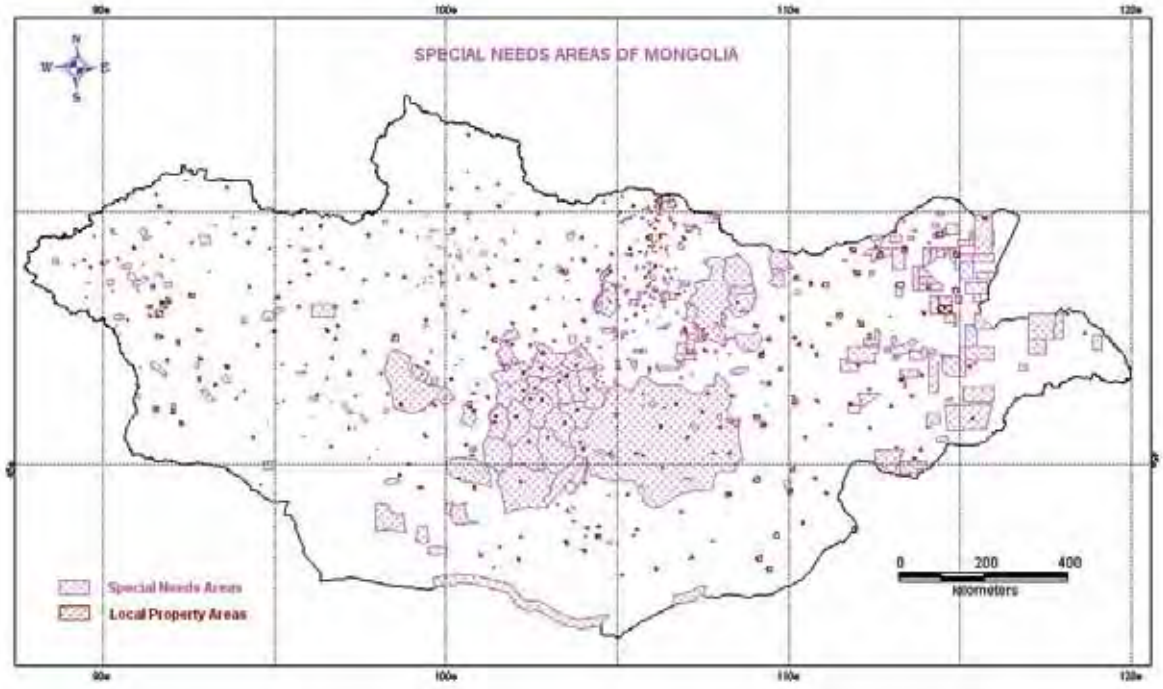
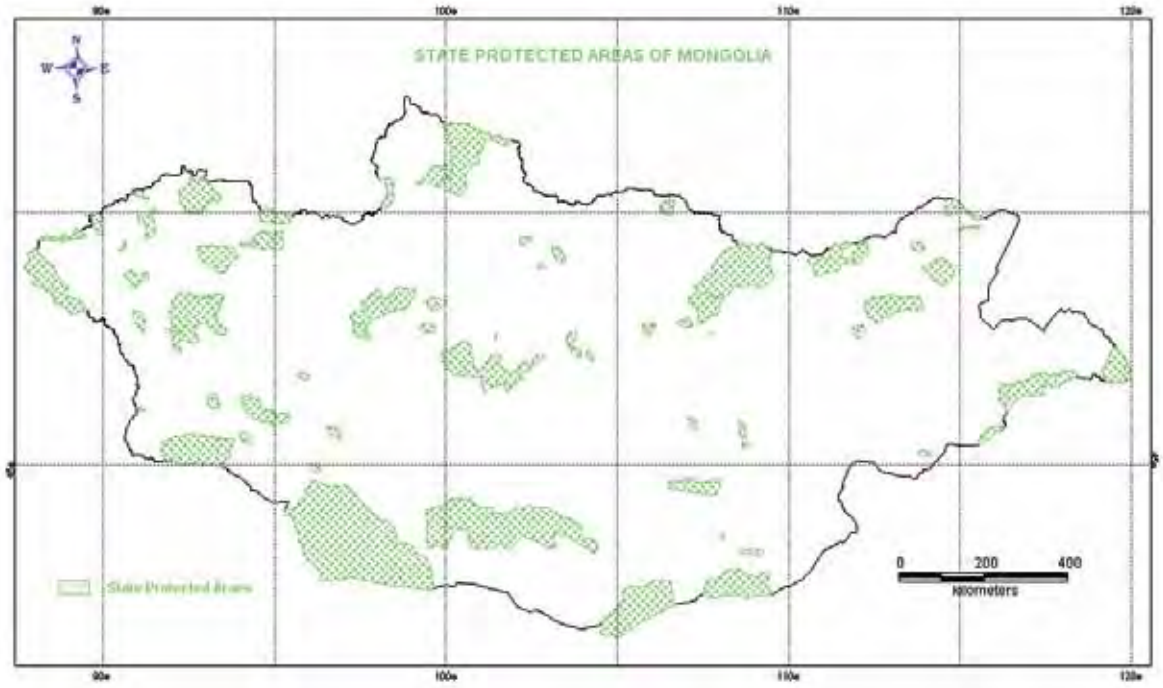


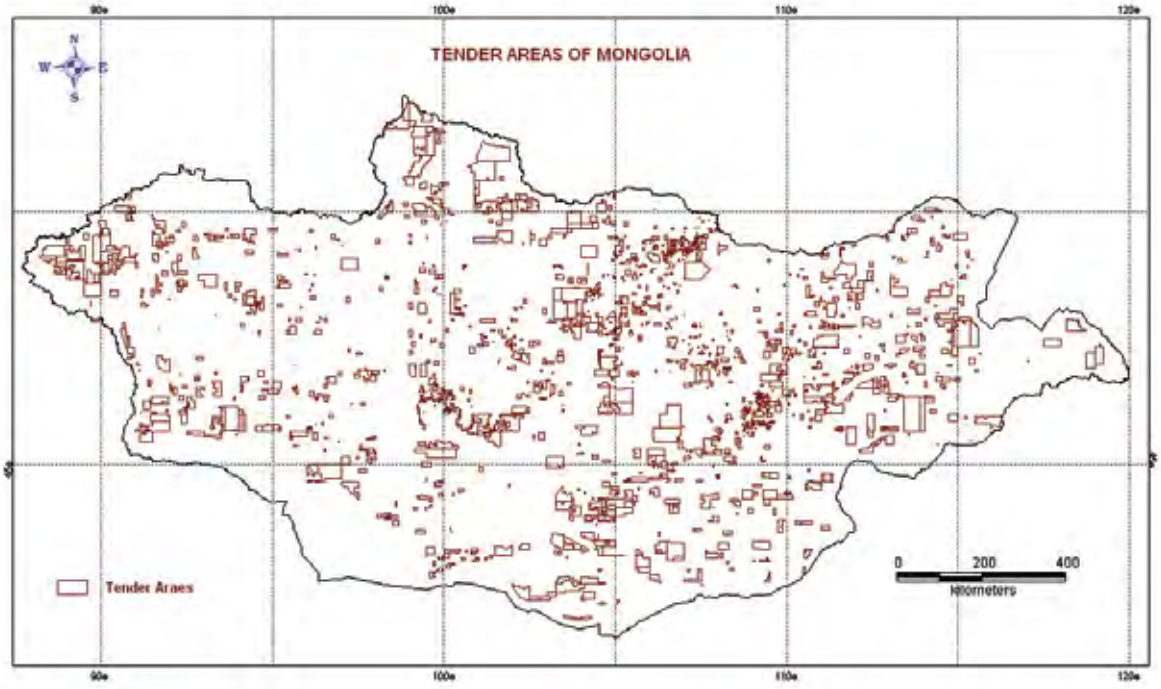
Special Needs Areas



State Protected Areas



Tender Areas



SECTION 4

Source: Rod Commerford & Amanda Dixon, July 2010

Information Sources

1. Relevant government departments

Mineral Resources Authority of Mongolia (MRAM)
Builder's square 3
Government building #12
Ulaanbaatar 211238, Mongolia
Tel: +(976) 11 263 701
Fax: +(976) 11 310 370
www.mram.gov.mn
See section 1.11

Foreign Investment and Foreign Trade Agency (FIFTA)
Suites 801-810 and 1202
Government Building - 11
Sambuu Street-11
Ulaanbaatar, Mongolia
Tel: +(976) 11 326 040, +(976) 11 320 871
Fax: +(976) 11 324 076
www.investmongolia.com
See section 1.11

2. Industry associations

Mongolian National Mining Association
Suite 501-503, "Geosan" Company Building
Ikh Surguulyn Street – 8
Baga Toiruu, Sukhbaatar District
Ulaanbaatar, Mongolia
Tel: +(976) 11 314 877
Fax: +(976) 11 330 032
Email: bolorn@miningmongolia.mn
www.miningmongolia.mn
Peak body association for mining in Mongolia

The Business Council of Mongolia
Khan Bank Headquarters
Seoul Street – 25, P.O. Box – 29
Ulaanbaatar 210644, Mongolia
Tel: +(976) 11 332 345
Fax: +(976) 11 332 345
Email: info@bcmongolia.org
www.bcmongolia.org
Business association for foreign and Mongolian companies operating in Mongolia

Mongolian National Chamber of Commerce and Industry
Khan uul duureg,1- khoroo
Mahatma Gandiin gudamj
Ulaanbaatar Mongolia
Tel: +(976) 11 324 620
Fax: +(976) 11 324 620
Email: info@mongolchamber.mn
www.mongolchamber.mn
Local chamber of commerce and industry

3. Australian consular representation

Honorary Consul
Mr J.Elbegsaikhan (Elbeg)
Australian Government
1st Floor, EVT Co. Bldg
11th Microdistrict
PO Box 498,
Ulaanbaatar 210620 Mongolia
Tel: +(976) 11 462 393
Mobile: +(976) 9916 5764
Email: elbeg@yahoo.com
www.dfat.gov.au
This post is headed by an Honorary Consul and Australia's Embassy in the Republic of Korea (South Korea)

3. Embassy of Mongolia – Australia

Ambassador
Mr Tserendorj Jambaldorj
Embassy of Mongolia
1/44 Dalman Crescent O'Malley
Canberra, ACT 2606
Tel: 02 6286 2947
Email: mngemb@bigpond.com

SECTION 5

Source: Rod Commerford & Amanda Dixon, July 2010

Appendix – Foreign Investment and Company Registration Process

FIFTA MONGOLIA

FOREIGN INVESTMENT AND FOREIGN TRADE AGENCY INVESTMENT AND REGISTRATION FACILITATION DIVISION

List of Documents needed for setting up Foreign Invested Company in Mongolia

APPLICATION LETTER

- By post and addressed to FIFTA

INVESTORS INTRODUCTION

- If an individual, please provide a passport copy and fill the investors form
- If a legal entity, please provide a certificate copy and a brief introduction of company
- Letter of solvency from Bank (foreign or domestic)

COMPANY NAME PERMISSION

- Acquired at the State Registration Office of Mongolia
- English and Mongolia name registration

BANK DESCRIPTION

- Acquired from investor's national correspondent bank

STATUTE AND AGREEMENT OF A COMPANY

- If a company consists of one investor, only the statute is needed,
  If a company consists of two or more investors, both statute and agreement are needed, i.e. signed contract.
- Shall be composed in Mongolian and one other foreign language chosen by investor, shall be printed no less than 4 copies each, each copy shall be approved by notary
- Start-up investment threshold is no less than US$100,000 / samples of statute and agreement are purchased at FIFTA /

COMPANY ADDRESS

- Shall provide an official address where the company holds an activity please provide a lease contract of premises if it's rental

FEASIBILITY STUDY

- Shall provide a feasibility study or business plan of each kind of activity the company plans to hold

OPERATING LICENCE

- State Registration Office
- Permission to open bank account
- Certificate of legal entity

COMPANY STAMP

- Order company stamp for official documents

OBTAIN SPECIAL PERMISSION FROM MRAM

- Exploration and / or mining licence

FINAL PERMISSION TO OPERATE

- Provide FIFTA with all of the above for final permission to operate

SECTION 6: References

- Aquaterra, Water and Environment Consultants
- FIFTA Website – Foreign Investment and Foreign Trade Agency of Mongolia. Official Website. http://www.investmongolia.com/
- Mineral Resources Authority of Mongolia (MRAM) Brochure, 2008.
- *Mining: A Golden Opportunity ? Portfolio Media, Inc*, *Wednesday, Jul 18, 2007*
- *Mining in Mongolia – Overview*, Information Source: MBendi – 2005
- *Mongolian Mining Sector: Managing the Future*, The World Bank, 2005
- MRAM Website. http://mram.gov.mn/en/index.php
- Rubin Weston, Chadbourne & Parke (MNP), and D. Khand, Mongolian
- *The World Factbook*, CIA. https://www.cia.gov/library/publications/the-world-factbook/

In addition to the above, interviews with Mongolian mining authorities and a number of the mining project developers as well as extensive desk research was undertaken.

The Australian Trade Commission – Austrade –
is the Australian Government's trade and investment development agency.

Austrade assists Australian businesses to succeed in trade and investment internationally, and attracts productive foreign direct investment into Australia. Austrade's extensive global network of offices covers more than 100 locations in over 55 countries.

For more information: call 13 28 78 within Australia or +61 2 9392 2035 from outside Australia; visit the Austrade website at www.austrade.gov.au; or email info@austrade.gov.au.

Australia has no permanent trade representation in Mongolia. The Austrade post in Seoul, Republic of Korea, services the Mongolian market and manages relationships with relevant Mongolian authorities and customers.

The Austrade Senior Trade Commissioner in Seoul is Mr Martin Walsh: martin.walsh@austrade.gov.au

Source: Leighton Asia Limited

Australian Government
Australian Trade Commission

Australia
UNLIMITED