MONGOLIAN INVESTMENT SEEKING PROJECTS

Ulaanbaatar, 2010

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Food sector

The total investment of 39.8 trillion tugrugs was made in Mongolian food sector last year, and the number of jobs in the sector increased by 10.6 percent. By the end of 2008, the total volume of food production has increased by 19.1 percent, and reached 163.4 trillion tugrugs at the constant prices of 2005. A food supply level increased by 17.8% in meat and meat products, while the production of milk and milk goods increased by 28.2%, and flour and flour goods increased by 22.5% respectively.

Mongolia consumes over 7 million heads of livestock annually for food purposes, produces 200 thousand tons of meat, and fully meets the domestic demand. From the total produced meat, 30% accounts for beef, 40% for mutton, 15% for goat meat and about 15% for horse meat. The number of livestock used for food in 2007 accounts for about 17.4% of the total livestock. At the country's average, 100-120 kilograms of meat were allotted per person.

Only 5-10% of the meat produced in agriculture is prepared in livestock slaughter industries, and is mainly exported.

There are 29 livestock slaughter factories operating in the country, with capacity to produce 85 thousand tons of meat per annum. These factories have a cooling storage with capacity to store 25 thousand tons of meat at once, and have been actively working to meet the demands of the Capital city, Darkhan and Orkhon aimags' populations. The average export of meat is 10 000 tons per annum, of which 97% is exported to Russia.

By the end of 2008, 43 million livestock has been counted in Mongolia and 41.7% of this livestock has produced 465.2 million liters of milk. Only 8 million liters, that are equivalent to 2% of the total milk production in the country, are processed in dairy plants annually.

In average, 130.8-146.7 liters of milk were allotted per person in 2007 in milk production sector. Although this corresponds to the appropriate level of milk usage, a person living in urban areas consumes 4 times less milk than that of person living in rural areas.

Over 70 tons (25 million liters per annum) of milk is produced daily at a country level, and about 200 dairy plants with capacity to produce wide range of dairies are in operation.

The Government of Mongolia has approved 'Milk' national program, and started its implementation in 2007. With the aims to create favorable conditions to develop a large number of dairy farms in major cities, to support a cooperation between the processing factories and farmers and to build small milk processing factories in remote aimags. With the total investment of 1.8 trillion tugrugs, the program aims to build 4 centers that cool and store 500-5000 liters of milk, 22 complex facilities that process 400-1000 liters of milk daily.

Our country harvested 200.0 thousand tons or 1.8 times more wheat last year than that was in 2007. Likewise, 143.6 thousand tons or 26.4 percent more potato and 81.6 thousand tons or 9.6 percent more vegetables were sown last year than that were planted in 2007. Consequently, this has generated opportunities to supply the population demand in total for potato, half demand for flour and other vegetables through the domestic production only.

The Government has also provided the alleviated interest rates on loans and has taken policies to support poultry husbandries. As a result, over 71 million eggs were supplied for the domestic consumption in 2008.

Livestock sector

As one of the key sectors in the economy, the agricultural sector in Mongolia produced about 20 percent (2 266 505 million tugrugs) of the country's GDP in 2008. 89.3 percent of it was produced by livestock sector.

From total 171.5 thousand herder households in Mongolia, 366.2 thousand herders are working in livestock sector. The age group of herders is as follows: 48.5% is between 16-34 years old, 38.7% is between 35-60 years old, and the remaining percent belongs to those who are 60 years old or older.

According to the preliminary results of the 2008 livestock census, 43.3 mln livestock was counted in Mongolia, from which 0.3 mln is camel /0.6%/, 2.2 mln is horse /5%/, 2.5 mln is cattle /5.8%/, 18.4 mln is sheep /42.4%/ and 20.0 mln is goat /46.1%/. The total number of livestock increased by 7.5 percent or 3.0 mln heads last year compared to that of 2007, in which the number of camel increased by 2.2 percent or 5.8 thous, cattle by 3.2 percent or 77.6 thous, sheep by 8.1 percent or 1372.3 thous, goat by 8.8 percent or 1621.5 thous, however the horse number decreased by 2.3 percent or 52.6 thous.

In average, Mongolia produces of 22.1 thousand tons of wool, 5.6 thousand tons of cashmere, 1.2 thousand tons of camel wool, 170.4 thousand tons of meat, 7.5 million hides and skins and 335 million liters of milk annually. From the total production, 41.4% of wool, 77.6% of cashmere and 12.9% of meat were exported to China, Russia and Japan.

The Government of Mongolia has been implementing specialized programs and projects to gain more benefits from livestock, and to intensify the livestock sector as a whole. The considerable enhancements have been appearing in the livestock quality as a result of imports of livestock and animals of pure breed from the countries like Russia, China, Germany, France and Canada. As of 2005, the number of farmers specialized in growing the livestock and animals of pure breed was less than a hundred, but now this number has increased to 920. They breed 12 612 cows in 409 dairy farms, 5285 cows in 48 beef farms, 11582 pigs in 154 pork farms and 309.9 thousand birds in 207 poultry farms. The farmers produce 2200-2500 kilograms of milk and 180-214 kilograms of meat from each cow and 250-290 eggs from each bird annually.

The Government of Mongolia has been developing policies not only to supply the population demand of major cities by natural and healthy products, but also it directs its programs to raise the quality of domestic agricultural products to the level of that of developed countries and to further increase the exports.

Crop sector

As the end of 2008, there were 192.5 thous. ha of sown area in the country, which consists of 154.0 thous. ha of cereals, 12.3 thous. ha of potatoes, 6.4 thous. ha of vegetables and 5.5 thous. ha of fodder crops. In comparison with the data of 2007, the total sown area has decreased by 5.0 percent or 10.2 thous. ha, however the statistics show that the sown areas of cereals, potatoes, vegetables and fodder crops were increased by 26.4 percent or 32.2 thous. ha, 7.2 percent or 0.8 thous. ha, 4.5 percent or 0.3 thous. ha and 12.4 percent or 0.6 thous. ha respectively.

In 2008, total amount of 212.9 thous.ton cereals, 134.8 thous.tones potatoes and 78.9 thous. ton vegetables were harvested. As well as 1009.8 thous.tones hay harvest and 27.6 thous.tones hand made fodder were prepared. Compared with the 2007, volume of cereals, potatoes, vegetables and hay harvest were increased by 98.1 thous.tones or 85.5 percent, 20.3 thous.tones or 17.7 percent, 2.5 thous.tones or 3.2 percent and 76.7 thous.tones or 8.2 percent respectively, but hand made fodder was decreased by 7.7 thous.tones or 21.9 percent.

An increase in harvest production in 2008 was promoted by the'Third Campaign for Reclaiming Virgin Lands', which was adopted and carried out by Mongolian Government. In addition, the technological reforms and nice weather conditions in harvest regions over

harvesting campaign period in Central and Northern parts of Mongolia have helped considerably. In the framework of the government action to develop Mongolian socio-economic in 2008, the output of grain production increased to 130.0 thousand tons, 55.0% of domestic demands for vegetables and 95.0% for potatoes were supplied domestically.

In 2008, the government considers that its goals were accomplished as 212.9 thousand tons of grains were hoarded in the state storages, and 54.9% of vegetable demands of the population were provided by the domestic production. But for potatoes, only 79.2% of national demands were supplied by the domestic production which stands for considerably lower number than were planned. The crop sector is one of the key industrial fields in the country that produces over 20 percent of total agricultural products, and supports over 60 000 cultivators' works and livings.

Mongolia has successfully organized 'Virgin land campaign', the first campaign in 1959 and the second campaign in 1976 respectively with an assistance Soviet Union technique and management. As a result, the size of arable land has reached 1.2 million ha and the country was able to meet the whole domestic demands on seed, potato, vegetable, meat and provender. For instance, it has cultivated seeds in 673.3 thous. ha land, has accumulated 840.0 thous. tons of yield, and has imported only 100 thousand seeds at the country level in 1989.

Most of the entities in Mongolian crop sector are wholly privatized, and as of today, there are over 1100 private entities, organizations and individuals that occupy 606.9 thous. ha land and 795 of these entities own up to 300 ha land, 140 own up to 300-600 ha land, 102 possess up to 600-1500 ha land, 47 own up to 1500-3000 ha land, and 19 own more than 3000 ha land respectively.

These entities employ over 290 engineering and technical staff, and operate with over 960 tractors, 526 combines and other agricultural trailer machines, of which 70 percent has been utilized before 1990.

The occupancy rates of cultivated land in aimags are as follows: seeds are in 59.6%, potatoes and other vegetables are in 22.2% of the cultivated land in Selenge aimag; seeds are in 12.7%, potatoes and other vegetables are in 19.1% in Tuv aimag; seeds are in 14.9%, potatoes and other vegetables are in 6.4% in Bulgan aimak; seeds are in 8.3% and potatoes and other vegetables are in 6% of the cultivated land in Khuvsgul and Darkhan-Uul aimags respectively. The above 5 aimags cultivate the total 95.4% of seed, and 58.2% of potatoes and vegetables production at the country level.

In the last few years, the state has provided 11.7 trillion tugrugs as subsidies for the restoration and development of irrigative crops and for the construction and repair works of new irrigation systems. As a result, the present size of an irrigation land has become 35.0 thous. ha.

However, due to certain factors such as climate change, global warming, financial incapability of the entities to run plantation operations and lack of experts and expertise in the field resulted in an exploitation of a mere 30 percent of total crop land of the country. Therefore, as of 2007, mere 47% of vegetable and 86% of potato demands have been provided by the domestic production.

Hence, the Government of Mongolia has generated the national program 'The third wilderness campaign' on crop development. Due to its implementation, 205.8 thous. tons of seeds, 142.1 thous. tons of potatoes, 80.6 thous. tons of vegetables, and 15.7 thous. tons of provender plants have been hoarded in 2008.

As compared to the previous year's hoarded yield, the production of seeds has increased by 91.2 thous. tons, potato by 28.5 thous. tons, and other vegetables by 1.5 thous. tons by supplying the total domestic demand in potato and 49% in other vegetables.

Crop production

			Completion			Objective		
№	Capacity		2006	2007	2008	2009	2010	2011
1	Space of total turn (thousand/hec)		306.3	301.0	444.0	565.9	616.0	643.0
3	Total land to cultivate		186.3	154.3	187.6	285.9	316.0	343.0
4	Wheat		115	116.1	150.4	256.4	280.0	300.0
5	Potato		10.5	11.6	12.3	12.5	13.5	14.5
6	Vegetable		5.8	6.1	6.5	7.0	7.5	8.5
7	Livestock provender		3.3	5.6	6.2	10.0	15.0	20.0
8	Oil plants		51.7	14.9	12.2	0.0	0.0	0.0
9	Unit yield (centners)							
10	Wheat		11.7	10.2	1.33	1.26	1.25	1.51
11	Potato		103	97.7	11.55	12.00	13.48	14.14
12	Vegetable		119	128.2	14.00	16.00	18.00	20.00
13	Livestock provender		29.3	17.0	2.00	2.50	2.50	2.60
14	Oil plants		1.6	8.0	4.50	0.00	0.00	0.00
15	Yield to accumulate (thousand/ tones)							
16	Wheat		132.9	109	200.5	330.0	349.0	454.0
17	Potato		109	113.6	142.1	150.0	182.0	205.0
18	Vegetable		70.4	79.1	80.6	102.0	135.0	170.0
19	Livestock provender		10.0	12.0	15.7	25.0	37.5	52.0
20	Oil plants		8.5	12.0	5.4	0.0	0.0	0.0
21	Physiological needs (thousand/tones)				Supply (%)			
22	Wheat	400.0			50.13	82.50	87.25	113.50
23	Potato	132.0			107.65	113.64	137.88	155.30
24	Vegetable	168.0			47.98	60.71	80.36	101.19

Light Industry

The processing industry accounted for 3.6 percent of Gross Domestic Product of Mongolia between 2004-2007. This amount is 5 times less than that of agriculture, shooting, forestry and construction sectors, over 6 times more than that of mining and extracting industries; over 2 times less than that of transportation and communication sectors and twice lower than that of real estate, rental, and other business sectors respectively. These imply that the basis for stable social and economic development and value added production has not been the case in Mongolia.

The amount of high technology saturated products in the processing industry is retained still in a low level. According to the UNIDO report, 85 percent of our country's export products are first-level processed raw materials and a mere 10 percent is value added finished products that are produced using an advanced technology.

'National integrated development policy based on the Millennium development goals' of Mongolia has been defined through the following 5 main development policies: geology, mining and heavy industry, processing industry, small and medium industry service, agriculture and food industry, travel and tourism, and was planned to take place in the following two phases: 2007-2015, and 2016-2021.

Mongolia prepares 21 thous. tons of fleece, 6 thous. tons of goat cashmere, 1000 tons of camel wool, 400 thous. ox hide, 300 thous. horse hide, 3.3 million sheepskins, 3 million goatskins annually.

Although national industries make up 40% of cashmere and 36% of wool, the production of value-added finished products is still low. In skin and hide sector, 10% of horse hide, 80% of ox hide, 90% of sheepskin and 16% of goatskin are exported in semi-processed condition.

As of today, there are over 40 small and medium industries in wool processing sector, over 50 in cashmere processing industry, 100 small braiding workshops, over 30 industries in skin and hide processing industry, 300 industries in wood processing sector and 200 small and medium industries in printing sector respectively.

The policies on developing livestock raw material processing industry are focused on widening the complete processing steps, and generating small and medium industrial complexes that produce finished goods such as knitted, leather, shoes, and other clothing, rather than focusing on establishing more first level industries that exceed the raw material's resource.

According to the Government's aim to develop the processing industry as a priority sector, within the framework of the industry development policy, the Parliament of Mongolia has approved and has been implementing the 'The main directions on establishing and developing industrial and technological parks' with the purpose to support the production of export products that are capable of competing in the foreign markets, to reduce the unemployment, to facilitate a stable development in the regions and to improve the foreign trade balance, as well as to increase the integration of Mongolia with the global markets.

Within this framework, a necessary research has been made in the province centers on their conditions and possibilities to host the industrial and technological parks as planned. Based on the assessment of technical and economic basis, and plotting and research on environmental condition, the master plans to develop industrial and technological parks in Darkhan, Erdenet, Uliastai cities, and Baganuur, Bagahangai, Nalaikh, Khan-Uul districts have been made respectively.

Moreover, according to the research made on each aimag and soum, the draft of 'Directions on developing industries in provinces' between 2009-2012 has been produced.

Project 1. **Agricultural products and raw materials stock market**

Project life, location	- 2010-2015 - 4 main regional centers	
Total investment	Total investment: USD 50 million - Infrastructure, premises and laboratory: USD 35 million - Raw material and current asset: USD 10 million - To build a chain stock market to collect the commodity and raw materials; transport and equipment: USD 5 million	
Payback period	- 10-15 years	
Project rationale	The Government's Action Plan 2008-2012 /2.2.5/: - to create a Mongolian brand in the processing industry and to increase the volume of production of cashmere, camel and sheep wool and leather products that are capable to compete in the world market;	
Project goal, demand	- Currently, 80% of raw cashmere and wool and 90% of raw leather and hide are being exported to abroad by bringing zero or very low value-addedness. - Although there are ample factories in the country that are capable of producing the finished products, these factories use only 20-30% of their capacities each year due to a lack of current assets to buy the raw materials necessary for production. - The aim of this project is to produce and export finished products, that are inclusive of value-addedness, with raw cashmere and wool and to bring a considerable enhancement in the country's social and economic development.	
Project's socio-economic benefit	- Better utilization of capacities of domestic processing factories - Will increase the number of new jobs by 3000-6000 in each section - The state budget revenue will rise up to 20 times due to value added production of cashmere and wool goods	
Required infrastructure	- We possess the required infrastructure, workforce, expertise as well as the economical rationale in our country.	
Exploration history	- The market research and estimation is well done.	
Production capacity, technology	- Currently installed techniques and existing technologies are sufficient to produce the high quality products that shall meet world demand and criteria.	
Environmental impact	- Shall use an environment-friendly technologies that comply the international standards - The cashmere and woolen products provide numerous benefits such as non-chemical, keeping warm, non-flammable, moist-absorbing and curing some of the human illnesses	
Project personnel	**Name**	Enkh-Amgalan.Ch
	Job Title	Director, Food Production, Trade, Service Policy Implementation Coordination Department
	Organization name	Ministry of Food, Agriculture and Light Industry
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Project 2. **Creation of Mongolian Flora Digital Database System**

- **Project abstract**	
Project background	In 1992, Mongolia acceded to the Convention on Biological Diversity. In the past, we had a digital database describing only mammals, amphibians, fish and reptiles, Red Book flora and fauna of Mongolia. Today, a digital database system covering the flora of Mongolia is not compiled yet. By registering and recording biological resources /about 2800 species of flora/ of Mongolia in a digital form, one creates a platform from which many tasks will be achieved - a protection of biodiversity, their sustainable use, granting accesses to genetic resources along with implementation of benefit sharing mechanisms.
Total proposed cost or needed investment for the project	Total cost of complete database system is USD 8 million. Non complete but self-containing system establishment cost of USD 2,87 mln is requested in the first phase.
Estimated investment profit rate	The database system will be an integral part of biodiversity legislation and will serve as the first reference source for investors in biotechnology, medicine, agriculture, cosmetics and etc. The value created is invaluable for all stakeholders and business as well.
Timeline for investment repay	The nature of the project is not enterprise but background for all future enterprises to come after.
Brief of project implementation plan	
Timeline of a project	2010-2012
Project scope	Mongolian flora /about 2800 species/ digital database system
Desired outcomes of a project	Mongolian flora database will serve as scientific platform from which activities such as protection, use and access granting of economically useful plants and other flora will have their reference. It will be a basis for the creation of agricultural, biotechnological and cosmetic new products.
Project inputs and resources	Since 1889, a numerous metadata has been gathered, processed and compiled from many different sources like Russian expeditions, local and foreign conservation banks and researches.
Project implementation and production venue	A particular plant's information shall be compiled with a help of specialists from specific disciplines and stored in powerful computer servers in the office.
Production capacity	The company has a full capacity to complete this project, and to produce a highly intellectual product (database system).
Project risks, constraints, exclusions and special cases	- Due to nature of this work, a change of the project manager will cause stagnation in the work process - A delay or termination in financing
Target markets	The creation of such database system will allow implementing the mechanisms for flora protection, sustainable use, granting accesses to genetic resources, resource evaluation which will lead to a greater participation and emergence of local private entities, research organizations in this field. It will open the door to cooperate with pharmaceutical, biotechnological companies of developed countries on the basis of granting accesses to genetic resources, provision of necessary information, and agreement on monetary and non-monetary benefits.

Cooperation mode with investor	All possible support and help will be given to the investors.
Brief economic estimation	The project result is a foundation of all future economic activities of different enterprises. Investments will grow in a similar pattern as after adoption of mineral law.
Company related information	
Qualifications of the company	The company ventured for biodiversity, bio-prospecting, research and production and is reckoned to be the most CBD knowledgeable in Mongolia.
Previous experience on similar projects	Versatile experiences of our team, clear vision of objectives to be achieved, knowledge about stakeholders and their interests, and local knowledge are the key strength points upon which confidence is based. Because of the existence of many stakeholders who would profit from the results of this project and because their objectives are dispersed in different fields such as bio-business, nature conservation, academic research and etc. It is necessary to organize the implementation of the project in most objective un-biased way where the interests of stakeholders should meet and not conflict. For that reason the success of this project will depend on the vision and the capability of the project manager
Project personnel	
Surname	Erdenechimeg
Name	Amar
Job title	CEO
Organization name	GenePros LLC
Organization activity	The company ventured for biodiversity, bio-prospecting, research and production and is reckoned to be the most CBD knowledgeable in Mongolia Dr. E.Amar is a member of biodiversity council of Mongolia. Currently, he is working on formulation of biodiversity law of Mongolia. The company is working on anti-cancer lead discovery from a particular genetic source in Mongolia. Additionally, he is working on extraction of biologically active compound aimed for skin whitening.
Address	9 toot, 14 build., 1 horoo, 1-40000, Suhbaatar District, Ulaanbaatar, Mongolia
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Project 3. **Extension of cashmere and textile factory**

<table>
<tr><th colspan="6">Project abstract</th></tr>
<tr><td>Project background</td><td colspan="5">- to implement the previous mission of 2010,
- to broaden a wool fabric production to the cashmere textile,
- to increase textile production capacity up to 25%,
- to train employees in skills for spinning-machine,
- to develop company offerings by increasing cashmere fabric and textile production,
- to develop the parallel fabric and textile production of sheep wool, camel wool, yak hair and goat cashmere,
- to develop maneuvers of company for achieving company goal under the mission of 'Production renewing project of Mongol Nekhmel Joint Stock Company between 2008-2010'.</td></tr>
<tr><td rowspan="6">Total proposed cost or needed investment for the project</td><td rowspan="2">No.</td><td rowspan="2">Performances</td><td colspan="2">Total /millions/</td></tr>
<tr><td>USD</td><td>MNT</td></tr>
<tr><td>1</td><td>Annual total revenue of the project</td><td>-</td><td>7588.80</td></tr>
<tr><td>2</td><td>Annual total expense of the project</td><td>-</td><td>5135.20</td></tr>
<tr><td>3</td><td>Profit</td><td>-</td><td>2453.60</td></tr>
<tr><td>4</td><td>Required investment for buying necessary equipments</td><td>2.2</td><td>3190.00</td></tr>
<tr><td>5</td><td>Total time for compensating investment by profit</td><td>-</td><td>1.3 years</td></tr>
<tr><td>Estimated investment profit rate</td><td colspan="5">- Total profits of the projected year: MNT 2453.6 million
- Total revenues of the projected year: MNT 7588.8 million
- Profit percents: 32.3</td></tr>
<tr><td>Timeline for investment repay</td><td colspan="5">- Total time for compensating investment by Annual profit: 1.3 years
- Payment terms for investment under the loan payment scheme/ business owner's opinion: 5 years</td></tr>
<tr><th colspan="6">Brief of project implementation plan</th></tr>
<tr><td>Timeline of a project</td><td colspan="5">2010-2015 year</td></tr>
<tr><td>Project scope</td><td colspan="5">'Mongol Nekhmel' Joint Stock</td></tr>
<tr><td rowspan="4">Project objectives</td><td>No.</td><td colspan="2">Performances</td><td>Measuring units</td><td>Total</td></tr>
<tr><td>1</td><td colspan="2">New equipment, which will be bought and installed for production:
*48/1-64/1 spinner line /Italy/
**Shima Seiki-textile machine /20 units/</td><td>Complex
Complex line</td><td>USD 1.2 mln
USD 1.0 mln</td></tr>
<tr><td></td><td colspan="2">Total</td><td></td><td>USD 2.2 mln</td></tr>
<tr><td>2</td><td colspan="2">Annual output:
*cashmere textile /by sweaters/
*cashmere fabric</td><td>Pieces
meters</td><td>81600
40800</td></tr>
</table>

	3	Total Annual Output	Million MNT	7588.80
	4	Annual	Million MNT	2453.60
	5	New Jobs	People	40
	6	Projected annual goat cashmere production	Tons	85.5
	7	Thread Production: *for fabric production * for textile production	Tons Tons Tons	30.6 20.4 10.2
Desired outcomes of a project	- Total Annual output increase: 3.6 times or 7588.8 million MNT - Annual profit: 3.7 times or 2453.6 million MNT - New jobs created: 40 - Additional internal production: 4768.8 million MNT			
Project inputs and resources	No.	Performances	Measuring units	Total
	1	Newly purchased equipment for production: *Machinery /equipment/ *Raw Material Production /cashmere/	Million MNT Tons	3190.00 85
	2	To prepare and maintain production area	Million MNT	20
	3	To prepare power and water supply lines of production area	Million MNT	15
Project implementation and production venue	In 'Mongol Nekhmel' Joint Stock Company, Ulaanbaatar, Mongolia			
Production capacity	Additional: - Annual spinning production capacity: 60 tones - Fabric production: 40800 meters - Textile production: 81600 pieces			
Project risks, constraints, exclusions and special cases	- Bank loan conditions for current assets may be complicated			
Target markets	- Foreign markets such as Japan, Germany, Denmark, Sweden, Switzerland, France, Russian Federation, Hungary			
Cooperation mode with investor	- Investors may select various types of cooperation.			
Brief economic estimation	- We will fully use Italian complex spinning line by increasing utilization up to multi-lines and following calendar days under the terms, which indicated in the Labor Law of Mongolia after we used the single-line initially. Thus, we will be able to produce 60 tons of 48/1-61/1 cashmere strings, to increase such production at least twice more, to increase spinning capacity and to have an opportunity to increase the types and quantities of fabric products. - We will produce 81.6 thousand sweaters, 40800 meters of wool cloths			

	through our current knitting and processing workshops by double-line of Japanese complex with a purpose to supply them to foreign markets. We will also use the opportunity to supply them to other domestic sewing production markets.
Additional information and appendixes	1. Required long-term loan for investment: USD 2.2 mln or 3190.0 million MNT 2. Duration of long-term loan: 5 years 3. Annual interest offer: not more than 9.6 percents 4. Equipment buying time: First half of 2010 5. Time for installment, experiment and adjustment: Second half of 2010 6. Time for preparing raw materials: Second half of 2010 7. Date of opening the production: July 1, 2010 8. Date of receiving loan: April 1, 2010 9. Date of loan payment: April 1, 2011 10. Current loan demand: 1350.0 million MNT
Company related information	
Qualifications of the company	'Mongol Nekhmel' Joint Stock Company was established in 1934, as one of the branch of Industrial Production that was established during the USSR period. It is the first equipped production of Mongolian industry that based on Fabric Production. The factory and the production type were changed and expanded for many times from its first dedication that were only the production of hot washed wool, cloth and felt including: felt boots since 1936, wool textile products since 1942 and soon it became independent. Since 1960, the factory became able to produce 1 million meters of textiles in favor of People's Republic of China and began producing various types of wool blankets, cloths and felts. Thus, the factory exported 30 percents of its total products to the USSR, Poland, Germany, Vietnam, North Korea, Romania, and Hungary. The factory also supplied its remaining 70 percents of products to the domestic market demands of laborers and herdsmen. Between 1973-1987, the factory has renewed its equipments by modern equipments from the USSR, Germany, England, Belgium etc. Consequently, the production capacity reached 1.35 million m2 fabrics and factory has become able to fully utilize its capacity by the end of 1980's and its workers reached 800. Since 1992, the factory was privatized and formed as 'Mongol Nekhmel' Joint Stock Company. The annual outputs have sharply decreased year by year, during the transition years from the socialist economy into the market economy. We even completely stopped our production between 1999-2000. During this hard time, the administration of the factory has done some management changes and as the result we have started recovering our activities since 2001, the beginning of this new millennium. Currently, the factory has only 2 workshops of knitting and processing lines and was expanded to have a full-line structure of wool washing production with cleaning

	workshop, knitting, processing, coloring, spinning workshops and its equipment was renewed for many times. Now we are capable to produce the blankets, cloths, towels, neckwears etc. that are made of wool and cashmere. We also have branches that produce wool strings.
Previous experience on similar projects	The company used to be the only Mongolian factory that supplied the domestic market demands by blankets, cloths, wool cloths, and army clothes materials and exported its 30 percents of production to former Socialist Republics. Although there are few new productions established after a transition to the market economy, our factory still remained as the only production that was capable to fully produce wool and cashmere by our full-line equipments. Other factories still lacked some equipment for a full processing stage. Today, we are producing the products of some Mongolian brands such as Goyo, Altai Cashmere by their order through our knitting, processing workshops. Although some sales channels have been opened to us, we could not successfully supply all 21 provinces of Mongolia and we only supply some of the foreign countries. The main reason of this disadvantage is caused from our ineffective management policy that is focused only on the factory expansion like renewing the old equipments, the factory premises maintenance etc. Thus, we spent MNT 1 trillion on those issues and could not resolve the issues to compensate a lack of current assets and, therefore, could not form the financial sources. Currently, we are able to produce and supply our products as a wholesale to 21 provinces of Mongolia and to export them to some developed markets including Europe, America, and an emerging markets in Asia. Mongolian commercial banks have a poor credit-granting capability. In addition, the situation is complicated due to the high interest rates on bank loans. As raw materials of wool can only be gained in a very short season between April to June in Mongolia, one needs to purchase these seasonal materials on wholesale-basis. This causes any company to apply for a credit from banks. Each year, banks have to approve loans worth MNT 0.8 to 1.00 billion to cover the credit demand. If all conditions are created, the local factory will be able to produce yak wool and camel wool, fine and uncombed sheep wool and cashmere worth MNT 4 to 6 billion and to earn a profit of MNT 0.8 to 1.5 billion. This will enable it to self-finance its own manufacturing in the future. We conclude that there is a big market for our finished products should the manufacturing is organized as discussed. We are striving to realize our main objective to boost the local production to a higher level. Should the trade environment improve between Mongolia and Russia, we will be able to deliver 10 to 20 thousand tons of textile to the Siberian markets. For instance, if we receive orders from 10 buyers for 2000 throws and blankets (made of yak and camel wool, fine/uncombed sheep wool or cashmere) each, we will be able to fill the orders only with 30 to 40 percent of our annual production which will have a total

	capacity to deliver 38 to 40 thousand meters of products annually. Therefore, we are confident that there is a market for small-sized manufacturers like us. Moreover, our company and Montextile Holding in which the company holds a significant stake has the ability to create the favorable conditions needed for the sale of the products to foreign markets. To secure a reliable market, we need to improve the overall quality of our finished products, to expand the knitting capacity and to significantly boost the annual textile output. To meet these targets, we need the latest state-of-the-art manufacturing technology. Once we are able to improve our wool processing capacity using the locally available raw materials, we have potential markets for our finished products available in Japan, the USA and the Republic of Korea. The purchase of proper manufacturing technology will result in creation of our own textile production allowing us to earn an additional annual profit of MNT 3.0 to 3.5 billion and to recover the manufacturing cost within a fairly short period.
Ability to work on time and within budget	Since the acquisition of the 71 percent stake in Mongol Nekhmel by the current management on June 20, 2001, the company has set up structures needed to modernize and expand the production, to improve technology and to undertake the following projects. Prior to the new management, the company had only one workshop for knitting and processing and possessed only one knitting (3.1 to 5.1mm) and two combing machines. The accomplishments based on the modernization projects that were implemented: - Purchase and installation of a Chinese-made complete line for cleaning and washing wool and cashmere raw materials - Purchase and installation in the knitting facility of 4 units of knitting equipment TP-520 (made in Italy), a jacquard machine TP-520 and a new yarn spinning equipment. - -The finishing facility acquired new equipment for dehairing/combing, drying and shortening from the PR of China, for combing and brushing from the Russian Federation, German-made equipment for textile cutting and combing, and machinery for shortening, washing, polishing and coloring from Italy. Investment: USD 500.000. - The spinning division was installed by Kyowa complete production line purchased in Japan. - Setting up of a jointly owned production facility with the acquisition of a complete Japanese-made combing and spinning line capable of delivering threads 24/2-28/2. Investment: USD 600.000. - Purchase in Japan of 6 units of textile-processing equipment and construction of the first part of textile factory. Investment: USD 4100.000. - Set-up of a new dyeing facility with the installation of a complete line for wool and thread dyeing. Investment: USD 450.000. - Total investment: USD 1 250 000.00

Project personnel	
Surname	Ravdan
Name	Enkhtaivan
Job title	Executive director
Organization name	'Mongol Nekhmel' Joint Stock Company
Organization activity	Manufacturers-Exporters-Importers. Yak cashmere, camel wool, sheep wool
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E-mail	info@mongoltextile.com, sales@mongoltextile.com
Website	www.mongoltextile.mn

Project 4. **'Healthy food' project to convalesce the livestock and to enhance the milk and meat production**

Project life, location	- 2010-2015 - Countrywide
Total investment	USD 150 million a/ Livestock vaccination USD 93,0 million b/ Meat and dairy intensive farm: USD 25.5 million c/ Food safety program: USD 31.5 million
Payback period	3-5 years
Project rationale	- The provisions in the National Development Goal /5.2.1.4/, Government's Action Plan /2.3.1/, 'Animal health' and 'Food safety' program are aimed to ensure the supply of primary foodstuff, meat, milk, flour, potato and vegetables to fully meet the domestic demand; - Referring to the livestock census in 2008, the total number of the pastoral livestock was 43.3 million which indicates an increase of 10 million in comparison to that of 2005. Therefore, the promotion of an intensive husbandry of the livestock in order to improve a quality and productivity of livestock and to combat soil erosion and degradation is pivotal. - It is also essential to start applying the modern technologies to protect animals from contagious and parasitic diseases, improving the quality and increasing the supply of the domestic veterinary drug products and vaccines; - As of 2008, the total national production of meat was 223 thous. ton and milk was 542.3 mln liters in our country. The traditional methods and technologies in meat and milk production is still prevalent in the country. According to the statistics of 2007, only 6.4% and 2.2% of meat and milk respectively were processed through a modern processing technology under a full veterinary and sanitary scrutiny. It means the rest percentage of total production of meat and milk is produced and processed out of veterinary and sanitary scrutiny. Therefore, developing a certificate of origin and sanitary certificates on meat and milk are highly necessary. - Penetrating modern machineries and technologies in the food production in order to provide the population with nutritious, high quality and safe foods in balanced and sufficient quantities is essentially needed. By doing so, there ample opportunities to produce and export genuinely natural and 100% ecological products for the exports to the international markets.

Project goal, demand	- to constantly reduce the pandemic of various diseases and improve the health and breeding of livestock by preventing them contagious and parasitic diseases. - to bring the quality and health requirements and standards on meat and milk products consistent with the international standards. - to increase the number of stock and improve the quality and productivity of cattle, the main resource of the meat in the country, and sheep. - to produce at least 50.000 tons of processed meat and to raise the amount of meat processed by intensive farming to 10.000 tons by increasing the meat production by 35% compared to that of 2007. - to produce no less than 20.000 tons of milk using a modern technology. - to establish an integral database on 'animal health and animal-originated raw materials' and to develop markets for animal-originated products and raw materials;
Project's socio-economic benefit	- Improved coordination between sectoral policy and approved projects and programs; to improve the program's implementation and public awareness; - to conduct fundamental and regional researches on animal health and diseases; - Improvement of the service qualities and attestation of veterinary hospital in the country - Increased production of ecologically clean foodstuff and selected food products that can replace imports. - Improved capacities of diagnosing laboratories at veterinary hospitals. - Capacity building and retraining of veterinary staff at the veterinary hospitals; - Increased manufacturing of safe foodstuff and development of domestic food production using modern machineries and technologies; - Investment promotion and attraction in food processing SMEs near urban areas; - Establishing breeding nucleus herds of high-quality livestock that produce high quality meat, milk and other products; - Promotion of cooperative activities among herdsmen;
Exploration history	The pre-feasibility study is made.
Production capacity, technology	- Improved service quality of 775 veterinary hospitals to protect animal health - To utilize a full capacity of existing 28 meat processing plants and to export 110.000 tons of meat and meat products by creating 100 intensive sheep farms and70 intensive cattle farms. - Currently, 30% of domestic milk supply is imported. Therefore there is a need to replace this amount by the domestic production. - Establishment of dairy farms with no less than 8000 dairy cows around urban centers;
Environmental impact	No adverse impact on environment

Project personnel	**Name**	Enkh-Amgalan.Ch
	Job Title	Director, Food Production, Trade, Service Policy Implementation Coordination Department
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	Name	Gankhuyag P.
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Project 5. **High-tech industrial complex and science parks**

Project life, location	- 2009-2015 - Selenge aimag, Zuun kharaa soum, Boroo valley
Total investment	Total investment: USD 383,7 million - Private investment: USD 313,7 million - State Budget: USD 70.0 million - Road infrastructure: USD 40.0 million - Power generation: USD 10.0 million - Construction: USD 20.0 million
Payback period	- 5 years
Project rationale	National Development Goal /5.2.1/ - Industrial technological parks shall be established and developed with available domestic and external resources for regional development: - To establish and operate the industrial technological parks in some major regional centers and cities. 8.1: As knowledge-intensive industry and services have expanded and knowledge-based economy has developed, Mongolia became a middle-income country. - Mongolian economy as a whole is being efficient and competitive. - Shift from the extraction of mineral resources to the production of end products has accelerated. Government's Action Plan /1.2.30/ - To pursue the policy to make science and technology a top priority sector; to provide the state support in introducing and acclimatizing new technology and to set up not less than two research institutes of biotechnology, nanotechnology and veterinarian service equipped at the world medium standards; - /1.2.31./ to define the top priority of science and technology and kernel technology in line with the country's developmental phase objectives and to allocate sufficient resources; - /1.2.32./ to study the latest trends in innovation and technology; to create innovative infrastructure; to upgrade the legal environment for the creation of innovation system and science and technology that contain knowledge and wealth production, dissemination and application.
Project goal, demand	- A total of 22 high-tech /bio, nano/ companies shall be established. - Creation of infrastructure for high-tech and export oriented industry - Creation of R&D center - Building the social infrastructure of the 21st century - Establishment of industrial clusters
Project's socio-economic benefit	- Increased national competitiveness - Economic diversification - Development of knowledge intensive and export-oriented industries - Increased budget revenue - Annual revenue: USD 3,54 billion

	- Annual R&D expenses: USD 708,0 million - Tax paid: USD 743,7 million - Job creation: 9600 /3600 manufactory workers and 6000 researchers/	
Required infrastructure	- 14 km paved road from the central road to Boroo valley - 40 km paved road in the High-tech industrial park - 2 km long power transmission line - Construction work of the first 6 factories in the first phase	
Exploration history	- The feasibility study is made. - The pilot plant is established. - Over 100 molecular technologies exist for diagnosing, neutrocetic, cosmetics and drug manufacture - Productivity, trade and market research is done by US company 'UBIC' on the Drug anti Cardiovascular disease and Cancer that will be produced with these molecules. - Mongolia has become a Member of International Association of Science Parks /IASP/	
Production capacity, technology	- Bio-tech drug production anti-cancer and cardiovascular disease /annual revenue USD 600,0 million/ - Bio-tech blood plasma production /30.000 liter a year - annual revenue USD 65,0 million/ - Bio-tech egg production /annual revenue USD 600,0 million/ - Bio-tech milk production /annual revenue USD 65,0 million/	
Environmental impact	- has obtained a Good manufacturing practices (GMP) certificate of Food Drug Administration of the USA.	
Project personnel	**Name**	Ganbat.B.
	Job Title	Director, Innovation Policy
	Organization name	National Development and Innovation Committee
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Project 6. **Holland hydroponic technology hothouse farming**

Project abstract	
Project background	- The hothouse farming idea first came out in 2001 during know-how exchange program between Agro-Biology faculty of Mongolian Agricultural University and Korean Sunchon University Agriculture College. - In October 2002, a Mongolian representative went to Korea to study the possibilities to build a hothouse farming in Mongolia in a specialized training. - The course particularly aimed to learn know-how at the hydroponics center, furthermore, to do a primary research on the project's possibility of doing hothouse farming in Mongolia. - During that time, a team leaded by Professor of Agricultural University of Mongolia has done a complete research on this project readymade for the investors.
Total proposed cost or needed investment for the project	This project execution needs an investment of EUR 1361768.
Estimated investment profit rate	Sale revenue: 979 440 000 Total expenditure: 455 691 090 Profit (tugrug): 523 748 910 Profit (euro): 290 972
Timeline for investment repay	80% of the investment will be compensated in the first 5,85 years.
Brief of project implementation plan	
Timeline of a project	1 of January, 2010
Project objectives	- to produce and sell good quality and ecologically clean vegetables - to build an intensive farming that uses an hydroponic technology hothouse. This technology hasn't yet used in Mongolia, however, it is studied that it can be economically effective method of farming in Mongolia. - to make a regular seasonal farming production; to create new jobs and to solve the social problems of employees. - to create an import substitution production and to accumulate currency reserves - to eliminate a shortage of fresh vegetables in the winter, spring, and summer times and to create a stable supply - to provide a stable supply of vegetables, especially tomatoes, and to define the policy of the market - stop and stabilize the recent price bubbles of vegetables, especially tomato.
Project inputs and resources	All the machineries will be bought from Holland.
Project implementation and production venue	Ulaanbaatar city, Baganuur district

Production capacity	- Yearly planting days: 330 - Yearly harvesting days: 300 - Daily average harvest: 1160kg - Monthly harvest: 35 ton - Yearly harvest: 350 ton	
Project risks, constraints, exclusions and special cases	Independent from natural factors	
Cooperation mode with investor	All forms are possible according to the investors propositions	
Brief economic estimation	Sale revenue: Total expenditure: Profit (tugrug): Profit (euro): Payment of investment loan from profit: Compensation time of investment:	979 440 000 455 691 090 523 748 910 290 972 80% 5,85
Company related information		
Ability to work on time and within budget	Can accomplish the project at given time as planned	
Project personnel		
Surname	Ninj	
Name	Tumur-Ochir	
Job title	Chief executive officer (CEO)	
Organization name	'OKU' LLC	
Organization activity	Trade, Agriculture	
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Project 7. **Kharkhorin**

Project abstract	
Project background	Sea-buckthorn is a Mongolian traditional plant that is popularized by its numerous benefits in the economy, for the human health and ecology and it is planted in many countries of the world.
Total proposed cost or needed investment for the project	USD 28.2 million is needed for realization of the project. s
Estimated investment profit rate	Annual average profit shall be USD 22.4 million or rentability is 0.79.
Timeline for investment repay	1.3 years
Brief of project implementation plan	
Timeline of a project	2008 – 2012
Project scope	Sea-buckthorn will be planted at 2,700 ha and 3,000 jobs will be created. A plant for semi and end processing will be created. A hydro power station will be reconstructed.
Project objectives	- The plantation took place in 100 ha in 2007, 336 ha in 2008 and 345 ha in 2009 and 2,700 ha plantation will be completed by 2012. - A whole quantity of 19,000 metric tons of berries per year will be earned starting from 2017.
Desired outcomes of a project	- This promised to become the world's biggest sea-buckthorn orchard. - An healthy, ecological clean alimentary and supplementary products will be delivered to the domestic and foreign markets. As a profitable production starts, the exportation potential of the country shall increase. - Sea-buckthorn will be used as the environment protection in combat against soil destruction, desertification and recovery of old mines etc.
Project inputs and resources	- Agricultural technique and equipment, - Sea-buckthorn excellent young trees, - Freezing equipment and cold storage rooms, - Equipment for semi and end processing plant.
Project implementation and production venue	Somon Kharkhorin of the Uwurkhangai aimag lays 360 kilometres from Ulaanbaatar and is connected by a paved road.
Production capacity	Annual processing capacity: - 7,600 metric tons of pure juice - 2,850 metric tons of concentrate - 114 metric tons of sea-buckthorn oil
Project risks, constraints, exclusions and special cases	A harvest of sea-buckthorn berries is not mechanized and requires a lot of man power. A competition at domestic and international markets is intensive. The natural disasters, fire, draughts and other force major circumstances.
Target markets	Foreign markets

Cooperation mode with investor	We welcome all kind of cooperation.
Brief economic estimation	Oil: USD 22,8 mln Juice: USD 12,9 mln Concentrate: USD 11,6 mln Total amount: USD 47,4 mln
Company related information	
Qualifications of the company	The company has been operating its activities in agricultural sector since 1956 and has had a considerable share in supply of grains and vegetables in the country's consumption. At present, the company has 160 employees and around 4,000 ha of land. The company's management team is well experienced and highly educated.
Previous experience on similar projects	We have planted the sea-buckthorn at 40 ha in Batsumber soum of Central aimag since 1999 and have been using this orchard successfully.
Ability to work on time and within budget	We employ the experts who have enormous experience in planting the sea-buckthorn in Mongolia and who give us very important advices. We are able to get all the necessary workforce from Kharkhorin.
Project personnel	
Surname	Purev
Name	Uchral
Job title	Executive director
Organization name	Kharkhorin joint stock company
Organization activity	Planting of sea-buckthorn and its processing
Address	Uwurkhangai, Kharkhorin, Erdenetolgoi, Uszhuulalt
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Project 8. **Modern Seed Farm for Small Grains**

Project abstract	
Project background	ACD LLC has a two-phase plan to bringing 1,050 ha of abandoned farm land back into production and then building a seed farm that meets the international standards. The first phase is for 5 years that will end in 2010 with the farm land in full production (wheat 1010 ha, vegetables 40 ha). Currently (Fall, 2009) 250 ha land is irrigated and 800 ha land is a fallow. Thus, the project is on target to achieve its 5 year goal of full production in 2010. The first phase was not designed to work at international standards although the pivot irrigation systems from the USA are of high quality (installed in 2009). It was designed to return the land to full production using the most economical methods (mainly using new Chinese machinery and open air storage of grain) due to the lack of long term affordable financing available in Mongolia. The first phase included testing and knowledge acquisition activities to enable the best approach to bringing the land back into full production. This proposal is a result of this work.
Total proposed cost or needed investment for the project	Required investment EUR 1.9 mln
Estimated investment profit rate	Average profit rate is 10 percent a year
Timeline for investment repay	Will be repaid fully over the 5 years
Brief of project implementation plan	
Timeline of a project	Project in full production in Year 2 and investment repaid by Year 5.
Project scope	The project will create a seed farm operating at international standards. The new investment is required for field equipment, center pivot irrigation systems, grain storage, cleaning and handling equipment. This is an addition to the investments made by ACD LLC in bringing 1,050 ha of abandoned farm land back into production.
Project objectives	To build a Seed Farm operating at International Standards.
Desired outcomes of a project	Annual production 4,000 to 5,000 tons of high quality wheat seed to support the Mongolian agricultural sector.
Project inputs and resources	The Seed Farm Project is based on the existing producing farm of ACD LLC. The investment is to upgrade that farm to create a seed farm operating at international standards. The investment will be used to acquire irrigation systems, field equipment (tractors, combines, tillage equipment), grain storage and handling systems, and seed cleaning equipment.
Project implementation and production venue	All field equipment, grain storage, cleaning and handling equipment will be purchased and used in Year 1 (2011). The center pivot irrigation systems will be purchased and installed in Year 1 and used in Year 2. The seed farm will have a full production of 4,000 to 5,000 tons of seed in Year 2.

	The project land is located in Sant Soum, Selenge Aimag, north central Mongolia. The climate is comparable to Southern Manitoba and parts of Saskatchewan, Canada. The soil is a deep clay soil of alluvial origin and highly suitable for irrigated agriculture. In fact, it was until 1990 part of a large state farm that was irrigated by center pivot systems. These pivots were dismantled in the early 1990's.
Production capacity	4,000 to 5,000 tons of wheat seed per year.
Project risks, constraints, exclusions and special cases	The major risk to agriculture in Mongolia is a lack of rain. The project will increase the irrigated area in the project farm from 250 ha to 800 ha. The irrigation water comes from the Orkhon River, a major river in Mongolia. The introduction of new equipment occurs in the first year of the project. Delays in delivery of some equipment would not require the extension of the project.
Target markets	The target market is Mongolian wheat farm companies. In Mongolia, there is no high quality seed production that meets the international standards. Currently, there is a considerable investment in agriculture backed by the Mongolian Government's 'Third Wave' program which supports private sector investment in agriculture. A high quality seed, which is the basis of any productive agricultural sector, is essentially missing. The project is designed to meet some of this demand for high quality seed. The market for wheat seed in 2009 was about 34,000 tons. ACD LLC has produced wheat for sale as seed in 2008 and 2009. Our 2008 seed was praised by the companies that sowed and harvested it. The project will enable ACD LLC to produce 4,000 to 5,000 tons of wheat seed per year. The projected market for wheat seed is 150,000 tons per year.
Cooperation mode with investor	The investor will bring financial and technical skills to the project that ACD LLC would welcome as their contribution will strengthen the project.
Brief economic estimation	The project has a solid basis, both technical and economic. ACD LLC has brought back the farm land into production, installed pivot irrigation system and produced wheat seed using the equipment that is inferior to that in the proposed project. The economics of the project are strongly based on low production costs and a large market that is growing and essentially unsatisfied.
Company related information	
Qualifications of the company	ACD LLC has brought back into production 1050 ha of high quality farm land that was abandoned after 1900s and has produced high quality wheat seed in limited quantities. The company is jointly managed by D. Dulamtsoo and A. Currie. ACD's director, D. Dulamtsoo, has advanced degrees in Agronomy and Law, has practical work experience in agronomy as well as having taught as the university level. She is a past board member of the Chamber of Notaries of Mongolia. Alaster Currie is a member of the farm management. Alaster Currie who has advanced degree in Geology, implemented multimillion dollar projects in geo-science information systems in Canada, worked as the United Nations Interregional Advisor and established a successful business designing and importing Mongolian cashmere knitwear to Canada.

Previous experience on similar projects	ACD LLC has brought back into production 1050 ha of abandoned farm land to create a productive farm. The proposed project is a continuation of this work using the new investment to create a seed farm that functions at international standards. No new activities will be introduced but the means to carry out these tasks will be greatly enhanced due to the new investment.
Ability to work on time and within budget	ACD LLC has brought back into production 1050 ha of high quality farm land. The project was planned to be completed in 2010 and work is on schedule. The work was carried out with modest budgets that required the most methodical use of available funds.
Project personnel	
Surname	Davaa
Name	Dulamtsoo
Job title	Director
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Organization activity	Farm Company
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Project 9. **Narrow and waved wool camel**

Project abstract	
Project background	In per one cm of fiber of narrow and waved wool camel, there occur 5-8 waves and, in comparison of the diameter of cashmere fiber the fine wool of narrow and waved wool camel is 0.8-1.3 cm narrower than that of usual camel. The waves of a fiber in usual camel wool have a big and distant wavelength. The yield of the production by narrow and waved wool camel is on 13.0-19.0 per cent more than that of usual camel wool because there are a small number of coarse fibers in the wool of narrow and waved wool camel. In order to determine the local areas that have narrow and waved wool camels, we have done a large survey among different camel populations in Erdene-Dalai, Luus, Delgerkhangai, Khuld soums of Middle-Gobi province and Mandal-Ovoo, Khanhongor, Bulgan soums of South-Gobi province. We have determined that the narrow and waved wool camels are becoming denser only in the territory of Bulgan soum of South-Gobi province. Hence, we have decided to produce the brand new products of which the raw materials depend on geographical features.
Total proposed cost or needed investment for the project	USD 450 thous.
Timeline for investment repay	10 years
Brief of project implementation plan	
Timeline of a project	2010-2016 years
Project scope	The project will be implement in Bulgan soum of South-Gobi province.
Project objectives	- To separate 30-50 female camels together with teasing camel bull of a type of narrow and waved wool camel for two years and carry out breedings in that group of camels. - To carry out laboratorical investigations and determine yield of wool in the separated group of camels. - To implement and create a small production using narrow and waved wool in the locality. - To create a geographical brand new product in a small production and export it to the markets abroad. - To care and breed the narrow and waved wool camels even more.
Desired outcomes of a project	- Begining of the nucleus of narrow and waved wool camels. - New product creation and export development.
Project inputs and resources	The equipment and facilities of the factory shall be imported and provided for the production of narrow and waved wool.
Project implementation and production venue	The project will be implement in Bulgan unit of South-Gobi province.

Production capacity	The production capacity shall be 0.5-2.0 tons of products per year.
Project risks, constraints, exclusions and special cases	There might be some natural disaster factors. Also, necessary to extend a timeline.
Target markets	To provide both domestic and foreign markets.
Cooperation mode with investor	We welcome all kind of cooperation.
Company related information	
Qualifications of the company	The company representatives include member of the Association of Mongolian milky camel breeders.
Ability to work on time and within budget	We will perform reliably and on time.
Project personnel	
Surname	Tunteg
Name	Baldan
Job title	Researcher, project coordinator, Ph.D
Organization name	Research Institute of Animal Husbandry
Organization activity	RIAH carries out research works on livestock and provides its results to herdsmen and state officials.
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Project 10. **Production of yak and calf (baby camel) fine wool knitwear**

Project abstract	
Project background	The yak and baby camel wool is completely an ecologically pure material. There is a wide opportunity to expand the markets for the products made by fine wools of yak and calf. The research results of the 'Technology and methods for deep processing of yak wool' project implemented at Mongolian Textile Institute show that the mean fiber diameter /MFD 17.6-23.0 μ, density 8-11 cH /tex/ of yak wool is similar to that of cashmere. The project also developed an economic and engineering estimations and developed designs for a new yak fine wool knit products. There is a big capacity to develop new fine wool products using 16-16.5 μ fibers by sorting the baby camel wool separately and to provide the products to both domestic and foreign markets. The yak and baby camel wool products have already become Mongolian brand products. Therefore, a consistent support is needed for the production of new knitwear products made by those raw materials.
Total proposed cost or needed investment for the project	EUR 917.35 thou.
Estimated investment profit rate	20 percent
Timeline for investment repay	6.5 years
Brief of project implementation plan	
Timeline of a project	2010-2016 year
Project scope	To produce new knitwear products by producing a 22 tons of yak fine woo
Project objectives	- To penetrate the most advanced technologies in the production - To build up the working community
Desired outcomes of a project	- New job creation - New products to provide both domestic and foreign markets
Project inputs and resources	- The production facilities shall be obtained from the European union technical cooperation 'UTC'. - To bring a renovation in 'Suljee LLC'
Project implementation and production venue	Mongolian Textile Institute and 'Suljee LLC'
Production capacity	To produce a 25 tons of yak wool
Project risks, constraints, exclusions and special cases	- Environmental risk - Request to prolong the time

Target markets	To provide both domestic, Asian and European markets.
Cooperation mode with investor	The investor will bring financial and technical skills to the project that ACD LLC would welcome as their contribution will strengthen the project.
Brief economic estimation	- To produce 12560 pcs yak and baby camel wool per year and to earn profits around MNT1020400.0 thous. - The total production expenses are MNT 677701.65 thous. and the pay off time for the total investment is 5 years. - The net income is MNT 38428.5 thous.
Company related information	
Qualifications of the company	- Possesses renowned advanced technologies - Has a professional working capacity
Ability to work on time and within budget	Possible to work
Project personnel	
Surname	Gongor
Name	Nadmid
Job title	Mongolian Textile Institute, Director of Research and Innovation Center of Wool and Cashmere
Organization name	Mongolian Textile Institute, Research and Innovation Center of Wool and Cashmere
Organization activity	Training, research, workshop, experiment, implementation
Address	Mongolian Textile Institute, Khan-Uul district, Chingis avenue-52, Ulaanbaatar city, Mongolia,
Mailing address	POB 36/15
Telephone	976-11-342438, 976-11-343143, 976-91175034
E-mail	nadmid_must@yahoo.com

Project 11. **Supporting the development of irrigation fields**

Project life, location	2010-2015	
Total investment	USD 50 mln	
Payback period	Not studied	
Project rationale	National Development Goal /5.2.1.4/ - To create a rational irrigation system; - To offer leasing services of irrigation machinery and equipment; - To improve ownership and usage of irrigation constructions and structures based on market principle. Government's Action Plan /2.3.5; 2.3.15/ - To continue the Third National Crop Rehabilitation Drive to revive the domestic agricultural production and to formulate a policy on land cultivation with irrigation system - To increase the amount of the state budget allocated for maintenance of the current and building of new water and irrigation systems	
Project goal, demand	The main goal is to implement the project to build an irrigation system, water reserve tank and port buildings and to increase the harvest of crop, potatoe, vegetables and livestock fodder by increasing the irrigated area by 40-50.000 ha.	
Project's socio-economic benefit	- 35 percent of domestic demand for crop will be harvested from the irrigated area. 100 percent of domestic demand for vegetables will be met by local harvest. - Intensive agriculture as the result of penetrating new technical and technological innovation into agriculture.	
Required infrastructure	- Enterprises will be selected to implement the project to build the irregated system and maintainence - The Management and capacity of the enterprises will be improved - Farmers will be provided with modern agricultural mashinery and equipment.	
Production capacity, technology	- 80-87.000 tons of crop will be harvested from 25.000 ha. - The harvest of potatoes and vegetables from 10.000 ha. will increase. - Livestock fodder crops from 5.000 ha will promote an intensive animal husbandry.	
Project personnel	**Name**	Baranchuluun .Sh
	Job Title	Senior officer, Agronomical Policy Implementation and Coordination Department
	Organization name	Ministry of Food, Agriculture and light industry
	Telephone	976-51-264853, 976-99043656,
	E-mail	nomch_br@yahoo.com
	Fax	976-11- 452554

Project 12. **Sea-buckthorn farming**

Project abstract	
Project background	- To plant the sea-buckthorn in 30 ha, fully irrigated field, and to provide the public with ecologically pure product. - It has numerous benefits for the human health - Mongolian government intensively encourages this sector and the improvements already have been occurring. - We have an ability to run the given farm, based on my professional experience and knowledge of biologist. - We have a purpose to develop first fruit-farming in Mongolian rural area. - The sea-buckthorn is the most popular berry not only in the country but also in the world, as it consists of many vitamins, and is beneficial to the human immunity system. - The sea-buckthorn is very rare and its price is high in today's market.
Total proposed cost or needed investment for the project	USD 500 thous.
Estimated investment profit rate	60%
Timeline for investment repay	3 year
Brief of project implementation plan	
Timeline of a project	From 2010 to 2013, totally 4 years
Project scope	Khutag-Undur soum, Bulgan province, Mongolia
Project objectives	- To plant the sea-buckthorn in 30 ha field and start our production. - To install a complex equipment of irrigation system. - To install a sea-buckthorn processing equipment and to establish a new factory that will produce a whole food juice of sea-buckthorn and will provide the public. - To establish the first model fruit-farming in the rural area of Mongolia. - To create new jobs in the rural areas and to increase the family income.
Desired outcomes of a project	To become a leading organization which runs a fruit processing industry in the rural area, obtaining and providing domestic and foreign markets with an ecological brand product.
Project inputs and resources	- We have our own field with size of 30 ha and have planted 2200 pcs seedlings of sea-buckthorn and just have taken our first harvest. - We have a possibility to become a fruit–farm with 36,000 seedlings of sea-buckthorn by expanding our activity. - We have our own premises for the factory.
Project implementation and production venue	Territory of 1st brigade of Khutag-Undur soum, Bulgan province, Mongolia

Production capacity	99800 tons of juice/ product production
Project risks, constraints, exclusions and special cases	Blizzard, hail
Target markets	To improve Mongolian pupils' immunity system aged between 6-13 year-old according to the secondary school dinner program at first time in the neighboring provinces such as Huvsgul and Orkhon and other soums of Bulgan province and further the entire provinces of Mongolia.
Cooperation mode with investor	We are flexible consistently discuss any cooperation modes with the investor.

Brief economic estimation

Operation plan:

Description	Measurement unit	Capacity	Timeline		
			2010	2011	2012
Capacity and usage	%	100	70	80	98
Pure juice of sea-buckthorn	L	19800	13860	15840	19404
sea-buckthorn drink	L	39700	30700	33760	39106
sea-buckthorn oil	L	300	140	240	294
sea-buckthorn	Kg	10000	7000	8000	9600
Blackberry drink	L	30000	21000	24000	29400
Totally		99800	72700	81840	97804

Selling:

Description	Measurement unit	Timeline		
		2010	2011	2012
Pure juice of sea-buckthorn	$	27720	31680	38808
sea-buckthorn drink	$	30700	33760	39106
sea-buckthorn oil	$	1400	2400	2940
sea-buckthorn	$	3500	4000	4800
Blackberry drink	$	10500	12000	14700

Operation total bill:

Description	Timeline		
	2010	2011	2012
Selling	111.100$	124.640 $	149.109 $
Facilities direct outlay	30.000 $	20.000 $	15.000 $
Facilities indirect outlay	8.000 $	4.000 $	3.500 $
Imposition	7210 $	10640 $	13609 $
Imposition after avail	64890 $	114576 $	117549 $

<table>
<tr><td></td><td>Investment specification and plan:
<table>
<tr><th>Name</th><th>Measurement unit</th><th>Investment size</th></tr>
<tr><td>Production facilities</td><td>MNT</td><td>350.000 $</td></tr>
<tr><td>Universal equipment of irrigation</td><td>MNT</td><td>150.000 $</td></tr>
<tr><td>Total</td><td>MNT</td><td>500.000 $</td></tr>
</table></td></tr>
<tr><td colspan="2">Company related information</td></tr>
<tr><td>Qualifications of the company</td><td>‘BulganTes’ ZBN was established in 2007 in Hutag-undur soum of Bulgan province. Since the time of establishment, the company owned 30 ha field that is in the active zone of sand movement. This year, we took our first harvest from the field which was fruitful enough. As we have a prediction that our harvest will increase starting from 2010, we plan to process the sea-buckthorn.
The owner of the farm is the teacher of biology who has been working as a teacher about 27 years. She also independently plants the seedlings and trees by her own interest.
The farm is the first fruit-farm in the Bulgan province.</td></tr>
<tr><td>Previous experience on similar projects</td><td>We participated in program organized by MOFA and are successfully implementing what was taught there.</td></tr>
<tr><td>Ability to work on time and within budget</td><td>We have an ability to work on time and within budget.
For instance, we planted 2200 seedlings of sea-buckthorn and began to get the harvest. Also, we have a possibility to plant in 28 ha field which specify the condition to provide our production ourselves.
We have 10 employees in our farm that show our ability to implement the project.</td></tr>
<tr><td colspan="2">Project personnel</td></tr>
<tr><td>Surname</td><td>Dugarsuren</td></tr>
<tr><td>Name</td><td>Enkhtuya</td></tr>
<tr><td>Job title</td><td>Director</td></tr>
<tr><td>Organization name</td><td>‘BulganTes’</td></tr>
<tr><td>Organization activity</td><td>Sea-buckthorn processing equipment and irrigated field</td></tr>
<tr><td>Address</td><td>Khutag-Undur sub-province, Bulgan province, Mongolia</td></tr>
<tr><td>Telephone</td><td>976-98125945, 976-93079100</td></tr>
<tr><td>E-mail</td><td>Eco_du_945@yahoo.com</td></tr>
</table>

ENERGY, MINERAL RESOURCES AND HEAVY INDUSTRY

- Sectoral information

Mining Industry

At present, the mining industry of Mongolia is one of primary significant sectors, producing 27.8 percent of the GDP, 64.6 percent of Gross industrial output, 68.5 percent of export and 56.3 percent of FDI.

Mongolia's vast territory is rich in mineral deposits including gold, copper, coal, fluorspar, silver and uranium. 24.8% of the Mongolian territory is covered by general exploration work and geological mapping at scale of 1:50 000. The exploration expenditures, especially by foreign capital have risen dramatically during the last 6 years. According to the reports of Metals Economics Group, in years 2004 and 2006 exploration expenditures in Mongolia accounted for 4% of the global exploration expenditures making Mongolia one of the world's top ten destinations for the mineral exploration.

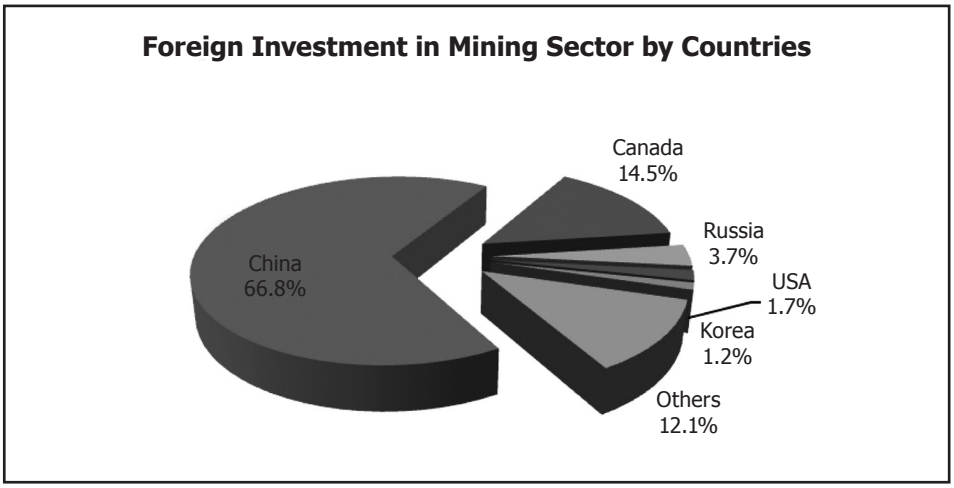
Mongolia produces gold, copper, coal, fluorspar, zinc, iron ore and tungsten, and exports nearly all its produced copper concentrate, molybdenum, coal and zinc to China, fluorspar to Russia, the United States, Ukraine, gold to Canada, the United States, the United Kingdom, and China.

Due to the favorable legal environment of the geology and mining industry to attract both domestic and foreign investors, new industries are starting to intensify.

As mentioned above, foreign investors in geology, mining and petroleum industries are increasing and about 66.8 percent of the total foreign investors are from China, 14.5 percent is from Canada, Russia (3.7%), USA (1.7%) and other foreign investors.

Products/Year	2003	2004	2005	2006	2007	2008
Gross Domestic Products	12.70%	17.30%	18.00%	30.00%	29.50%	28.20%
Industrial products	49.80%	64.70%	65.50%	68.40%	67.80%	64.30%
Total Export Products	58.90%	70.80%	75.80%	76%	78.80%	80.70%

Foreign investment in mining sector by countries



With the purpose to use minerals more effectively, to support processing industry which produces more value-added products, the Parliament of Mongolia re-approved a Law on Minerals in 2006.

Even though Mongolia is a country rich in mineral resources and raw materials, we strive to become a country that produces value-added products in the future.

To establish the micro and middle extractive industries directed to Asian developed countries along with our resource based Russian and Chinese industries, we are in need of technique and technology, know-how, foreign direct investment, business knowledge and experience and management and are ready to cooperate in these fields that are open to everyone.

Energy Sector

Mongolia is a country with vast territory, located between Russian Federation and People's Republic of China (PRC), and small scattered population. The poverty reduction, an equal development in all regions, the development of infrastructure such as road, energy access and telecommunication are pivotal for the economic growth of the country. Due to its landlocked and remote location Mongolia is dependent on its neighbors and cross border trades, and the Government of Mongolia is keen to promote a regional cooperation on energy sector with its immediate neighbors and countries of the region.

From the policy view, the major priorities for the Government are to create a necessary institutional framework for private sector participation (PSP), to meet an increasing energy demand in most efficient way, to facilitate the development of renewable energy, to accelerate the commercialization of energy companies and to improve the efficiency of energy sector.

Due to increased mining sector development, it is expected that there will be a stable power demand increase. Mongolia's electricity transmission covers most of its territory and power is supplied to all 21 aimags and 305 soums out of total 334 soums.

The Mongolia's power sector consists of:

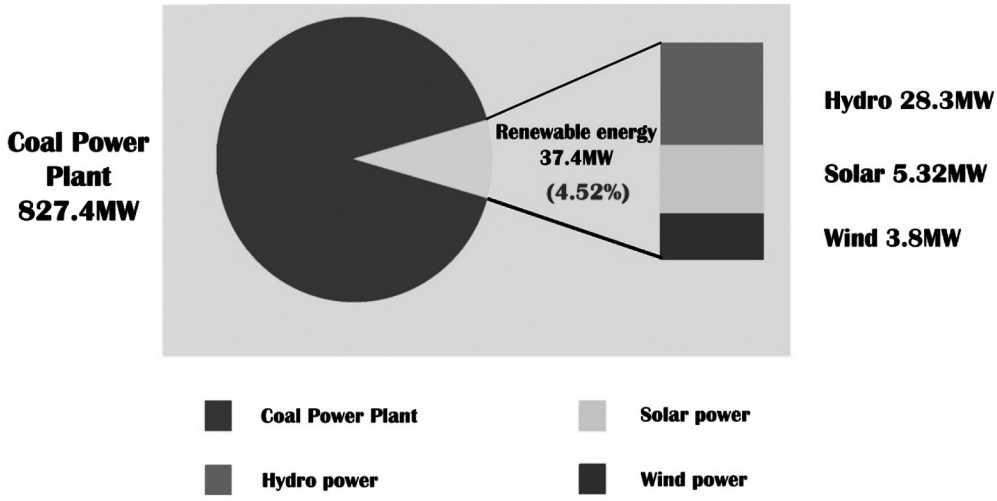
- Central Energy System (CES) - 5 coal burning thermal plants (802 MW) covering energy demand of Ulaanbaatar city, and 11 aimags or 40% of total population.
- West Energy System (WES) - Connected to the Russian energy system Durgun hydro power plant with 12 MW
- East Energy System (EES) - Coal burning thermal power plant

The Government of Mongolia, according to the its action plan 2008-2012, has planned to carry out the projects to resolve the issues related to power supply for strategically important mining deposits such as building an air power transmission line of 220 kwt connecting the Baga Nuur – Undurhaan –Choibalsan and Ulaanbaatar – Mandalgovi – Tavan Tolgoi – Oyu Tolgoi and building the two circuit power line of 220 kwt between Baga Nuur – Choir and Choir – Mandalgovi.

Mongolia has a unique culture of nomadic lifestyle, herding more than forty million of livestock. Because of the nomadic style of living, it is a policy challenge to develop an appropriate electricity access for herders and farmers who live in remote countrysides. The Government is encouraging the development of renewable energy, such as small hydro, solar and wind energy.

The Parliament of Mongolia (State Great Hural) adopted the 'National Renewable Energy Program' in 2005 aimed to promote the use and production of renewable energy in Mongolia in a sequenced and sustainable way, to reach the production of renewable energy to 3-5% of the total electricity generation by 2010, and up to 20-25% by the year 2020.

Electricity generation source by 2008



There are many implemented projects to develop small hydro power plants (HPP) and to promote the use of solar and wind energy. For instance:

- Portable PV system for nomadic families (NEDO, Japan): 200W PV systems with measurement equipment were distributed to approx. 200 nomadic families throughout Mongolia
- Master plan for rural power supply by renewable energy (JICA, Japan): Project covered 167 off-grid soum centres
- German-Mongolian cooperation for the promotion of renewable energy utilization in Mongolia (GTZ, Germany):
  - Stage I completed in year 2002 - Feasibility study for small hydropower sites
  - Stage II completed in year 2008
    - 6kW wind-solar hybrid system installed as a pilot project
    - 375kW hydropower project construction work implemented
    - 150kW hydropower project under construction
    - 111kW hydropower project under construction
  - Stage III going on activity 2008 - 2011
- PV/Wind technology application for electrification in Desert area (MOCIE, Korea):
  - Naran Soum, 8 kW
- '100,000 Solar Ger' national program: Started in 1999
  - By 2000-2002 more than 5000 SHS distributed (supported by the Government)
  - By 2003 some 11,170 SHS distributed (partially supported by the Japanese grant aid)
  - By 2004 some 20,620 SHS distributed (partially supported by the Chinese grant aid);

By 2008 40,400 SHS distributed (supported by the Mongolian Government);

- Completion /2005-2008/ under development

  By 2009-2011 some 20,000 SHS will be distribute (partially supported by the World Bank grant aid);

Moreover, the Government of Mongolia has planned to carry out the following projects in renewable energy sector:

- Choir Wind farm, 50 MW; Preliminary measuring at site is started now
- Very large-scale PV power generation system in Gobi desert area of Mongolia: Pre-feasibility study completed. The research work and testing site have started now
- Orkhon Hydro Power Plant, 100 MW; Pre-feasibility study completed
- Egiin Hydro Power Plant, 200 MW; Technical and Economical Feasibility study completed
- Erdeneburen Hydro Power Plant, 60 MW; Technical and Economical Feasibility study completed
- Chargait Hydro Power Plant, 24.6MW; Technical and Economical Feasibility study completed
- Onon Hydro Power Plant, 60.0MW; Pre-feasibility study completed
- Khust aral Hydro Power Plant, 18MW; Pre-feasibility study completed

The use of Liquefied Petroleum Gas/LPG/ is increasing rapidly, and the Government of Mongolia gives an importance to the development of the LPG use as a new fuel mix and a relatively 'clean' fuel compared to the fossil fuel. The Government of Mongolia approved a program 'Liquefied Petroleum Gas' by its decree #184 of 2000, and it aims to promote the use of LPG among households and transports, to introduce the necessary safety standards and regulations. In 2005, about 2200 tons of LPG for approximately 10000 users were imported from neighboring countries, the Russian Federation and China.

Project 13. **Black Metallurgical Complex**

Project life, location	- 2009-2014 - Selenge aimag, Shaamar soum, Dulaankhaan
Total investment	Initial total investment cost: USD 2400.0 million including: - Mining and processing facility /Bayangol iron ore deposit/ USD 100.0 million - Mining and processing plant /Khust iron ore deposit/ USD50.0 - Mining and processing facility /Tumurtei iron ore deposit/ USD 100.0 million - Mining and processing facility /newly discovered Tumriin Gol iron ore deposit/ USD 50.0 million - Pellet Plant USD 30.0 million - Iron smelting plant USD 680.0 million - Oxygen Plant USD 15.0 million - Metal Sheet plant USD 100.0 million - Steel Plant (Railway rails) USD 50.0 million - Coke plant USD 200.0 million - Chemical plant USD 30.0 million - Train loading system USD 5.0 million - Water pumping station USD 15.0 million - Thermo Power Plant USD 120.0 million
Payback period	6.5 years
Project rationale	- National Development Strategy based on Millennium Development Goals, - Government's Action Plan /2010-2015/ - Master Plan of Metallurgical Industry
Project goal, demand	- to expand and renovate the Darkhan steel plant and set up a ferrous metal processing complex in Darkhan-Selenge region to supply fully the domestic demand and to create a new source for exports. - to develop the heavy industry and to encourage the construction of complexes of hydro-metal works, cathode copper processing, gold melting, coke-chemistry and ferrous metal processing. To promote the technological renovation of the Darkhan steel plant and Erdenet ore dressing plant. - to set up the local construction material producing and processing plants or enterprises; to turn the strategic mining deposits in Darkhan Selenge province into the economic utilization and to start exploiting the Tumurtei iron ore mine.
Project's socio-economic benefit	- Foundation of metallurgical, coke-chemical industry - Creation of export opportunities - Value added production - Supply of domestic demand for steel products for the construction, manufacturing, agriculture and household consumption - Positive impact on employment, regional development, and job creation
Required infrastructure	A 100km spur line is being constructed and will be connected to the main rail infrastructure. Subject to capacity increase of rail transport infrastructure

Exploration history	- Pre-Feasibility Study confirms that the project is financially and technically feasible. - The Government authorities have endorsed the Study and approved the decision to proceed to a Definitive Feasibility Study for the industrial complex. - A technical design of mining and processing facility is completed.	
Production capacity, technology	Annual steel production: 2 MTPA. Ausmelt iron-making technology	
Environmental impact	- The construction and operation of the plant is being carefully planned to meet the international standards for the mining and metallurgical industry and all environmental requirements of Mongolian laws and established standards. - The Environmental Impact Assessment is required.	
Project personnel	**Name**	Batkhuu G
	Job Title	Director, Mining and Heavy Industry and Policy Department
	Organization name	Ministry of Mineral Recourses and Energy
	Telephone	976-51-264059
	E-mail	batkhuu@mmre.energy.mn
	Fax	976-11-329222
	Name	Ganbold D
	Job Title	Senior officer, Mining and Heavy Industry and Policy Department
	Organization name	Ministry of Mineral Recourses and Energy
	Telephone	976-51-264056, 976- 99136989
	E-mail	ganbold@mmre.energy.mn
	Fax	976-11-329222
	Name	Ganbaatar B
	Job Title	Director, Sectoral Development and Investment Policy Coordination Department
	Organization name	National Development and Innovation Committee
	Telephone	976-51-266303, 976-99815690
	E-mail	ganmon2002@gmail.com
	Fax	976-11-327914

Project 14. **Coal gasification and Methanol and Dimethyl Ether (DME) production plant**

Project life, location	- 2010-2015 - South Gobi's Choir-Nyalga coal basin, Tavan Tolgoi coal deposit, Umnugobi aimag	
Total investment	USD 500.0 million (Tavan Tolgoi)	
Payback period	10 years	
Project rationale	National Development Goal /5.2.1.1; 5.2.1.2/ - Master technologies for extracting the fuel and petroleum from the coal. - to develop a chemical plant; to master the technology to comprehensively process the coal; to manufacture various kinds of end products for exports. - Government's Action Plan /2.2.8/ - to implement projects on oil processing, coal liquefying and gasifying and to conduct a policy to supply domestic demand in petrol and fuel	
Project goal, demand	- to supply the domestic demand for transportation fuel - to supply the domestic industry and household demand for liquid natural gas	
Project's socio-economic benefit	- a reduction of domestic demand for imported fuel products - improve exports	
Required infrastructure	- To be located near the coal deposit and consumers. - To be connected to the rail and road network. - The fuel distribution, transportation and storage facilities are required.	
Production capacity, technology	10 tons /day of DME /internationally well proven clean coal technology/	
Environmental impact	To comply with the international standards for the petro-chemical industry and all environmental regulations of Mongolian laws and established standards	
Project personnel	**Name**	Boldkhuu N.
	Job Title	Deputy director, Fuel Policy Department
	Organization name	Ministry of Mineral Recourses and Energy
	Telephone	976-11-3263471, 976-99111276
	E-mail	bube83@yahoo.com, boldkhuu@mmre.energy.mn
	Fax	976-11-311122
	Name	Tsevelmaa D.
	Job Title	Officer, Fuel Policy Department
	Organization name	Ministry of Mineral Recourses and Energy
	Telephone	976-51-260631
	E-mail	tsevelmaa@mmre.energy.mn
	Fax	976-11-311122

	Name	Ganbaatar B
	Job Title	Director, Sectoral Development and Investment Policy Coordination Department
	Organization name	National Development and Innovation Committee, the government implementation agency
	Telephone	976-266303, 976-99815690
	E-mail	ganmon2002@gmail.com
	Fax	976-11-327914

Project 15. **Coal Water Mixture**

Project abstract	
Project background	The oil crisis in 1970s accelerates humankind to find alternatives for oil resources. An abundance of coal resources has positioned its role as the most popular fuel alternative for oil substitute by direct combustion or by coal conversion into oil or gaseous fuel. As industrialization had grown rapidly until 2000, 87 percent of oil reserves, 73 percent of natural gas, 2 percent of coal has run out. The researchers conclude that coal will remain as a major fuel for the energy production in the world in the coming 40 years, until the discovery of other reliable energy resource. For this reason, the USA has announced that they are back to coal era. In fact, more than 75 percent of power plants in the USA are now using the coal as a major fuel source. Even though, we are not allowed to use outdated technologies due to environmental protection and its related legislation. The new coal technologies, liquid coal or liquid transportation of coal were in great interests that lead to the development of the coal water mixture for burning. To maintain the stability of the coal and water, coal chemicals have developed the additives and created coal water mixture.
Total proposed cost or needed investment for the project	Total tentative cost for installation, construction and demonstration: USD 2 018 000
Estimated investment profit rate	If modified coal fueled boiler to CWM boiler, 1 hour economic benefit: *Fuel cost:* Coal: Mcoal=Gcoal*Ycoal=30.3*15.0=USD 454.5 CWM: Mcwm=Gcwm *Ycwm=15.85*22.0=USD 348.7
Timeline for investment repay	2 years
Brief of project implementation plan	
Timeline of a project	2009-2011
Project scope	Ulaanbaatar city of Mongolia
Project objectives	The objective for introducing the new coal technology CWM is to contribute for mitigating air pollution of Ulaanbaatar city. CWM will be used as a fuel for the thermal plants and heat only boilers that serve the consumers that are not connected to the central heating system. Within the framework of the project, the following steps will be taken: - Selection of equipments and its installation as well as operation - Modification of boilers making them suitable for using CWM. - Efficiency calculation and cost recovery rate.
Desired outcomes of a project	Followings are the CWM benefits: - Various type of coal can be used as feed including low rank coal that even can't satisfy the energy production need.

	- Starts burning at lower temperature - Burn-off rate is high (99 %) - Less toxic substances carried up away with flue gas. - Eliminates the toxic substances and treats unsafe at fuel preparation, transportation, combustion lines - All of technology lines will be dustless and so fire and explosive safeties will be followed. - CWM keeps its reactive stability characteristic for 8 months without additives. No precipitation. If evaporates the water in CWM, it is required to just add a water and needless to stir.
Project inputs and resources	The list of the plant equipment with the capacity of 20 ton of CWM per hour (120 000 ton/year Coal moisture ≤ 30% and ash ≤ 10% An equipment list for modifying 8 boilers, type KE-10 with the capacity of 10 ton/h, is shown in sheet 3. CWM burns by 2 stages, firstly CWM is gasified in newly installed additional kiln, secondly gas is burnt in the main boiler.
Project implementation and production venue	In order to produce CWM, ultra disperse particles are grinded in the cavitation. The cavitation processing: Solid small particles are grinded into micron sized small fines through high speed cavitation. Thus reactive ness is risen resulting disperse stare. In other words, when CWM is in cavitation influence, coals particles turn into dispersed fines that is in entirely disperse state. CWM processing goes through following 3 stages differed by disperse state characters and CWM physical and chemical modification character: - Deformation, homogeny and initial dispersion (for 5 hours and 10 minutes) - Dispersion: the physical and chemical reactiveness of surface dispersion, the rise up of ultra disperse yield and CWM volume and the increase of CWM sedimentation strengthen ness structural mechanic barrier. - Decrease of CWM state and its sedimentation strengthen ness (for 10 hours and 20 minutes) - If the fluid (water) physical character is modified by cavitator influence, it lasts for sufficient period. It is seen the following structural change in mechanical reaction caused by cavitator influence: $H_2O \rightarrow H+OH$ $OH \rightarrow OH+hv$ $OH+OH \rightarrow H_2O_2$ $OH+H_2O_2 \rightarrow H_2O_2+O_3$ (*) Being dissociated with the reaction of provoked water molecules (*), extracted energy transferred to heat. Water pH decreases. From all above, it is proved that cavitation process and stabilized and

	activated CWM inference. It is affirmed that active molecules such as H_2O_2, O_3, are formed through experiments. Cavitation process for CWM lasts no longer than the limit of 2nd stage (about 40 minutes). Activated fluid fuel has high reactive character. To produce such a fuel wit caviation process, it costs less because of its low metal and energy consumption. (about 20KWH per ton). Using the water contains oil or contaminated by oil production, increases the efficiency of producing such fuel. Its economic efficiency is seen in complete burning rate, blower usage that has lower left air and low flue gas temperature.
Production capacity	120000 t/a
Target markets	Ulaanbaatar city of Momgolia.
Brief economic estimation	If modified coal fueled boiler to CWM boiler, 1 hour economic benefit: *Fuel cost:* Coal: Mcoal=Gcoal*Ycoal=30.3*15.0=$454.5 CWM: Mcwm=Gcwm *Ycwm=15.85*22.0=$348.7
Project personnel	
Surname	Dekhchinsuren
Name	Tsevelmaa
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Organization activity	Ministry
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Telephone	Dulguun Damdin-Od - 976-51-261232, 976-99028021
Fax	976-11-330627
E-mail **Website**	mcddd_dulguun@mmre.energy.mn, mcddd_d@yahoo.com www.energy.mn

Project 16. **Coking coal plant**

Project life, location	Umnugobi aimag	
Total investment	USD 700 million /Processing plant, coke plant, chemical plant/	
Payback period	5-8 years	
Project rationale	National Development Policy /5.2.1.1; 5.2.1.2; 5.3.3/ - Start processing the coking coal. - Master technologies for extracting fuel and petroleum from coal. Government's Action Plan /2.2.8/	
Project goal, demand	- To develop step by step energy, coke and coal-chemical complexes at Tavan Tolgoi and other large coal reserves. - Development of coal processing (CTL and CTG technologies) and chemical industry - Diversification of energy sector	
Project's socio-economic benefit	- Value added production /liquid&gaseous fuel, chemical products, coke-fuel/ - Regional development of South Gobi - Attraction of private investment	
Exploration history	Ulaan Nuur basin is divided into 4 sections (Tavan Tolgoi, Uhaahudag, Dornod, Bortolgoi). The deposits have total reserves of 1.8 billion tons of coking coal 4.6 billion tons of high grade coal.	
Production capacity, technology	Coal processing capacity: 15 MTPA	
Environmental impact	Detailed feasibility study is required	
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Project 17. **Construction materials plant**

Project life, location	2010-2015 Countrywide
Total investment	USD 800 million - Cement plant (Sainshand): USD 100 million - Cement plant (Bayankhongor aimag, Bayankhongor soum): USD 40 million - Cement plant (Gobialtai, Taishir soum): USD 40 million - Cement plant (Khentii, Undurkhaan soum): USD 30 million - Structural metal plant: USD 500 million - Ceramic plant: USD 20 million - Thermal Insulation materials plant: USD 30 million - Block plant: USD 40 million
Payback period	4-6 years
Project rationale	- National Development Goal /5.2.1.1/ - Government's Action Plan /2.2.6/ - Create a possibility to supply domestic demand in construction materials such as cement, metal frames and glass; - Master plan of construction material industry development
Project goal, demand	- to process domestically the construction raw materials that are widely found in the country using the advanced technology - to reduce the housing market price rise by supplying the domestic demand for construction material - to create a possibility to supply domestic demand for the construction materials. The import accounts for 70% of domestic demand for construction material.
Project's socio-economic benefit	- Improved business and legal environment for construction material industry; - Development of local construction materials manufacturing based on local resources of raw materials; - Introduction of advanced technology into the manufacturing of construction materials replacing the imports; - Improved quality of construction materials that meet the international norms and standards; - Job creation
Required infrastructure	The engineering infrastructure is required.
Exploration history	'Construction material industry Master Plan 2007-2015' /MCUD, GTZ Germany, Association of Construction Material Builders; 2007/
Production capacity, technology	- Capacity of cement plant (Sainshand): 1 MTPA - Capacity of cement plant (Bayankhongor): 30-50.000 TPA - Capacity of cement plant (Gobi-Altai): 50.000 TPA - Capacity of cement plant (Khentii): 30.000 TPA - Capacity of Structural metal plant: 2 MTPA - Capacity of Ceramic plant: 50 Million pieces/year

Environmental impact	The environmental impact assessment is required	
Project personnel	**Name**	Myagmar G.
	Job Title	Director, Department of construction, housing and public utilities policy and coordination
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Project 18. **Construction of State Petroleum Stockpile Facilities**

Project abstract	
Project background	In Mongolia, petroleum products have been imported from Russia since the socialist era, and transported by Russia-owned railway tank cars. Nowadays however, Mongolia and Russia have shifted from the socialist economy, and petroleum product commerce has become difficult between the two countries, making the oil imports from China highly necessary. Nevertheless, at present, most petroleum products are still imported from Russia, making Mongolia dependant on only one country for petroleum products. The sectoral policies of the Government for country development are settled in an energy sector as the first priority, transportation and communication in sequence. The study on petroleum project was done and the changes for petroleum strategy were recommended by the World Bank in 1993. The Technical Assistance for Commonwealth of Independent States (TACIS) has provided Grant Aid for the construction of petroleum transshipment facilities at Zamyn-Uud station, on the border with China by this recommendation. The study for improvement and modernization of oil storage facilities was conducted for the existing superannuated petroleum facilities (JETRO 2002). This report introduced an idea of the 90 days state stockpile capacities for the stabilization of petroleum supply, which is an instruction of International Energy Agency (IEA) for the petroleum importing countries. The Mongolian Government has decided to adopt IEA's recommendation as the Government policy for the social activities. The construction of stockpile facilities is necessitated for introduction of the modern technology for improvement of the safety measure and environment preservation. In 2002, the Government has transferred from NIC some petroleum stockpile facilities with total capacity of 32,000 kl to Mongolian Implementing Agency for State Reserve, however, according to the estimation made, only 7,600 kl of petroleum products that are the reserve for 4 days, is being stockpiled at present. The shortage of petroleum has become a serious social problem, occurring quite frequently during the past 10 years after shifting into market-oriented economy. The main reasons for this shortage are as follows: Mongolian petroleum demands mainly depend on Russian supply, the volume of supply is reduced in autumn and winter seasons due to the seasonal fluctuation of higher demand in the Siberian regions. Also, the suspension of petroleum production is used to occur due to non-scheduled urgent overhaul of refinery facilities. In addition, Russian petroleum companies had introduced the world market price since 1991, after the collapse of former Soviet Union. In addition, Russia has introduced the advance payment system for petroleum products since 1999, which is the main reason of the petroleum

	shortage in Mongolia due to financial predicaments of the Government. The Feasibility Study on Improvement and Modernization of Oil Storage Facilities (ECFA 1999) and the Feasibility Study on Renovation of Petroleum Stockpile Facilities (JETRO 2002) were done.
Total proposed cost or needed investment for the project	The total investment cost for oil storage fasilities including railway facilities: USD 85.3 million
Estimated investment profit rate	The estimation of the EIRR is 17.1%.
Timeline for investment repay	Timeline for investment repay is 3 years.
Brief of project implementation plan	
Timeline of a project	4 years
Project scope	Petroleum sector of Mongolia.
Project objectives	The objectives of the project are as follows: - To stabilize the supply of the petroleum products in all regions; - To achieve the better economy in all regions; - To improve the safety and reduce the negative impact on the environment; - To establish independent petroleum policy.
Desired outcomes of a project	The accomplishment of this project would avoid the shortage of petroleum products.
Project inputs and resources	- Storage tanks (gasoline, diesel fuel, fuel oil); - Unloading facilities; - Loading facilities; - Slop facilities; - Fire fighting facilities; - Water treatment facilities; - Utility facilities; - Buildings; - Railway branch line, access road and other related facilities.
Project implementation and production venue	Ulaanbaatar, Darkhan and Erdenet cities of Mongolia.
Production capacity	Total petroleum facilities capacity is 180.000 tons.
Project risks, constraints, exclusions and special cases	- Problem of industrial waste water generated at the construction site. - Problem of industrial waste generated at the construction site. - Problem of noise produced at the construction site.
Target markets	Mongolian market of petroleum products.
Cooperation mode with investor	Soft loan, Grant

Brief economic estimation	A financial analysis is made in order to verify if the profit can be increased as a result of the project, in other words, to evaluate the financial viability of the project from the viewpoint of the organization. This project belongs, in essence, to the 'State Emergent Reserve Project' that is an insurance project at the state level in response to emergent events. Therefore, loans will not be repaid in principle through commercial operation. Besides, considering that it is necessary to absorb management experiences of enterprises in its operation, and to reduce financial burdens of the government, it is planned to lease around 20% (12,000 KL) of capacity of the facilities to ordinary enterprises.
Company related information	
Qualifications of the company	Ministry of Mineral Resources and Energy of Mongolia.
Previous experience on similar projects	Petroleum product's transhipment facility of Zamiin Uud near south border of Mongolia.
Project personnel	
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Job title	Officer
Organization name	MMRE Mongolia
Organization activity	Ministry of Mineral Resources and Energy of Mongolia.
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Project 19. **Copper Smelting Plant**

Project life, location	2010-2012 Orkhon province, Erdenet city	
Total investment	USD 265 million	
Project rationale	National Development Strategy based on Millennium Development Goals /5.2.1.1/ - to increase the capacity of Erdenet Ore-dressing Corporation, and enhance the product processing. - to increase the production of cathode copper and steel significantly. - Government's Action Plan /2010-2015/, Master Plan of Metallurgical Industry	
Project goal, demand	The development of a smelter now or in the future would materially facilitate copper trade by increasing the value-added to the Erdenet ore, which is now exported as a concentrate, and would reduce the transportation volumes and costs and would produce more desirable products for most of the world market. A secondary benefit of on-site smelting of Erdenet ore would be the recovery of by-product molybdenum, silver, gold and other metals for sale on the world market.	
Project's socio-economic benefit	- First metallurgical and chemical plant in Mongolia - value added production - Increased export volume and stable budget revenue - Positive impact on regional development - Job creation	
Required infrastructure	A dependable supply of energy is secured. As transport demand grows, the Government is committed to support the development of railway transport capacity.	
Exploration history	The final feasibility study is required	
Production capacity, technology	The design capacity of the plant will be 70.000 tons of cathode copper to be processed from Erdenet's copper concentrate.	
Environmental impact	- The construction and operation of the plant is being carefully planned to meet the international standards for the mining industry and all environmental regulations of Mongolian laws and established standards. - The Environmental Impact Assessment is required.	
Project personnel	**Name**	Batkhuu G.
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Project 20. **1)Direct Reduced Iron Plant,**
2) Iron Ore Mining and Processing Plant Project

Project abstract	
Project background	Beren Group LLC of Mongolia has sucessfully implemented similar projects in the past in Mongolia. The company is seeking a partnership on new plants and expansion projects.
Total proposed cost or needed investment for the project	1. USD 87 808 000 for Direct Reduced Iron Plant 2. USD 53 450 000 for Iron Ore Mining & Processing Plant
Estimated investment profit rate	1. 31% on a conservative forecast 2. 28% on a conservative forecast
Timeline for investment repay	1. 3 years after commissioning 2. 4 years after commissioning
Brief of project implementation plan	
Timeline of a project	1. May 2010 to August 2011; Full operation in September 2011 2. April 2010 to June 2011; Full operation in July 2011;
Project scope	1. Plant building construction, production lines and furnaces construction, auxiallary equipments and machineries purchase; 2. Open pit mining equipment purchase, iron ore processing plant construction, logistical facility, infrastructure upgrade
Project objectives	1. Manufacturing 360 thous. tpa 'direct reduced iron' with min. 92% iron content for domestic and foreign markets; 2. Manufacturing 4 million tons of min. 65% iron content concentrated iron ore for domestic and foreign steelmakers
Desired outcomes of a project	Maximizing potential profits on tested and proven scheme;
Project inputs and resources	1. Direct Reduced Iron Plant *Raw material:* a. Iron ore concentrate– From the currently operating plant next door b. Lignite or hard coal; Widely available; c. Limestone; Widely available locally *Product:* Direct Reduced Iron (briquetted) TFe 92% - current domestic demand 300 thousand metric tons; *Main equipment:* Reduction furnaces Gasification furnaces Feeding and product processing facilities Storage and loading facility

	2. Iron ore mining & processing plant *Raw material:* Iron ore – Beren Group owns mining rights to iron ore deposits with a combined reserve of 500 million tons. *Product:* Iron ore concentrate TFe65% - The chief raw material for steelmaking *Main equipment:* Open pit mining equipment (Excavators, bulldozers) Crushers Sievers Ball mill Classificators Magnetic and flotation separators
Project implementation and production venue	1. Arkhangai province, Mongolia 2. Arkhangai province, Mongolia
Production capacity	1. 360,000 metric tons per year 2. 4 million metric tons per year
Target markets	Steelmakers and ferrous metallurgical markets
Cooperation mode with investor	1. Negotiable
Brief economic estimation	Available upon meeting
Company related information	
Qualifications of the company	- Established in 1990, the Beren Group is one of the Top 100 companies in Mongolia - The company is the premier iron ore miner and ferrous metallurgical operator in the country - The company has over 2,000 workers employed in 21 subsidiary companies, of which four companies are listed publicly at Mongolian Stock Exchange
Previous experience on similar projects	*Past project implementation experience and knowledge:* - Iron ore mining project 2005-2006; 1 million tpa - Iron ore processing plant project (including infrastructure) 2006-2007; 0.5 million tpa - Direct reduced iron plant project 2007-2008 - Steel ball manufacturing plant project 2008-2009
Ability to work on time and within budget	- The company has well experienced project management team with past large scale project implementation experience and knowledge - The company has successfully comissioned all of the past project plants it had sought to implement. The company has an excellent track record of past cooperations on projects with the foreign investors.

Project personnel	
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Organization activity	Steelmaking, Iron ore mining, ferrous metallurgy, others
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Project 21. **Expansion of Smokeless Briquette Production Plant**

Project abstract	
Project background	Today, the air pollution has become one of the serious social and environmental issues of Ulaanbaatar, a capital city of Mongolia. Accordingly, the state and local governments are working continuously to solve this issue. As being one major measure, the government announced an open tender to build a plant that produces smokeless briquettes in 2006 that will substitute raw coal, a major contributor to the air pollution. Sharing with the same vision to preserve the environment, Tugrug Nuuriin Energy LLC (TNE) participated in the tender and won with its attractive proposal to produce briquettes with its clean technology and own abundant coal reserve. Today, TNE has successfully built up the demonstration plant that has the demo capacity to produce 1,8 thous. tons of briquettes per year, and is ready to go to the next level that is the expansion of the existing plant into commercial plant, which will produce 60,0 thous. tons of smokeless clean briquettes per year.
Total proposed cost or needed investment for the project	USD 13 million
Estimated investment profit rate	Approximately 10%
Timeline for investment repay	6 years
Brief of project implementation plan	
Timeline of a project	16 months
Project scope	- Coal Processing and Energy Producing - Environmental Protection
Project objectives	To contribute to the reduction of air pollution level in Ulaanbaatar city through producing and supplying environment-friendly clean and smokeless briquette for the city ger households and industries.
Desired outcomes of a project	- 25% of UB city ger households will be supplied with 60,0 thousand tons of clean briquettes that are economically beneficial and efficient. - UB city air pollution level will be reduced by 20%
Project inputs and resources	Smokeless briquettes will be produced at the plant that has crushing, gasifying and briquetting equipment. The expanded plant will annually process 150,0 thousand tons of brown coal using its 30 gasifiers. The brown coal will be extracted from the mine and delivered to the plant located right beside it.
Project implementation and production venue	Tugrug Nuur Basin, Tuv province, 180 km south east of Ulaanbaatar.

Production capacity	6 millions of 10kg bags of briquettes per year
Project risks, constraints, exclusions and special cases	The only potential risk concerning the successful project implementation could be natural phenomenon. Because of the landscape structure, the open pit mine could be flooded with water during rainy season. To avoid this situation, the water trenching will be used to drain the water. When there is harsh winter or extreme weather going to happen, the plant can run in both winter and summer. Except heavy snow that blocks all road access for our distribution network, an extreme weather will have little effect on our production. The heavy snow would hardly last for months. The products would usually be shipped in advance to distribution centers. Except the climate factor, there is no other potential risk to be anticipated.
Target markets	Immediate target market: - UB city ger district households (150,000 families) Mid-to-long term target market: - Heat Only Boilers and Steal Smelting Plants
Cooperation mode with investor	- Joint Venture - Equity - Loan
Brief economic estimation	All detailed estimation is in appended Project Business Proposal
Additional information and appendixes	Project Business Proposal is appended
Company related information	
Qualifications of the company	Turgug Nuuriin Energy /TNE/ LLC is founded in 2005 in Mongolia. From the start of operation, TNE has been working in coal processing field. It has its own coal deposit that has an estimated reserve of 300,0 thousand tons of brown coal. After a comprehensive study on coal processing technologies, TNE acquired Thermo coke-S technology, originated from the Europe, because of its ecology-friendly features and well suitability to local conditions. Mr. Dugerjav, TNE CEO, is well educated professional having PhD in mining and highly experienced in coal processing field.
Previous experience on similar projects	TNE built the coal processing and briquette manufacturing demonstration plant and started its operation in 2008.
Ability to work on time and within budget	The company has well experienced international management team and educated staff, who worked together for the past 2 years of the project demonstration stage and are proved to achieve the goal within the set time and budget.
Project personnel	
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Organization name	'TNE' LLC

Organization activity	Mining, Energy and Production
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Surname	Lkhamsuren
Name	Dugerjav
Job title	CEO
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Organization activity	Mining, Energy and Production
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Project 22. **Fluorspar processing plant**

Project abstract	
Project background	Mongolian geological expedition has carried out a number of exploration works at Urgun fluorspar areas. It includes a preliminary geological exploration that was conducted during 1976 and 1987. The detailed exploration was implemented in 1986-1987. As the result of this exploration, the sufficient fluorspar reserves at Urgun deposit were discovered. The mining operation has started since 1981. 2.6 million tons of fluorspar ores were mined during 1981-1988. Currently, Urgun mine has 4.0 million tons of fluorspar ores in category C_1+C_2. Fluorspar ore grading is 35-36% with an average $CaCO_3$ content of 13% in some ore bodies. An additional exploration is required in order to increase ore reserves.
Total proposed cost or needed investment for the project	The necessary finance sum is USD15.0 mln
Estimated investment profit rate	USD 4.2 million
Timeline for investment repay	3.5 year
Brief of project implementation plan	
Timeline of a project	20 years
Project objectives	Production of acid grade fluorspar concentrate
Project inputs and resources	Mining and mineral processing equipments
Project implementation and production venue	Dornogovi province, Urgun soum.
Production capacity	200.000 ton ore exploitation
Target markets	Export to Russia, North America, India
Cooperation mode with investor	Credit ore Production Sharing
Brief economic estimation	Total investment, thous. USD. 15000.0 Ore mining production, thous.ton 200.0 Concentrate production per year /FF-95/, thousand.ton 76.0 Total income per year, thous.USD. 21280.0 Total operating cost, thous.USD. 15200.0 Pre-tax profit, thous.USD. 5016.0 Income tax, thous.USD. 804.0 Profit after tax, thous.USD. 4212.0 Internal Rate of Return /IRR/, % 34.7 Net Present Value /NPV/, 10%, thous.USD. 20860.0

Company related information	
Qualifications of the company	35 years in mining sector
Previous experience on similar projects	Yes
Ability to work on time and within budget	Available
Project personnel	
Surname	Yamaaranz
Name	Dashdondog
Job title	Technology-engineer
Organization name	'Mongolrostsvetmet' LLC
Organization activity	Mining sector
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Project 23. **Oyu Tolgoi (Turquoise Hill)**

Project life, location	According to the Investment Agreement 30+20+20 years, Umnugobi province, Khanbogd soum
Total investment	USD 5.1 billion 2002-2009 – USD 1 billion 2009-2013 – USD 4 billion
Payback period	5-8 years
Project rationale	- Government's Action Plan - Investment agreement
Project goal, demand	Development of Oyu Tolgoi Gold and Copper Deposit
Project's socio-economic benefit	- Development of South Gobi region - Benefit for foreign investors
Required infrastructure	- Power plant - Diesel generator - Water treatment - Housing - Service and maintenance center - Office building - Checking point - Airstrip - Other facilities
Exploration history	As a result of extensive drilling and exploration work since 2000, the high grade copper and gold resources were discovered in southern deposits (open-pit) and Hugo Dummett deposit. The Oyu Tolgoi deposits contain a total ore reserve of about 2.7 billion tons including 1028 tons of gold and more than 25.4 million tons of copper in resources in the Measured-and-Indicated, plus Inferred, categories. In 2005, an Integrated Development Plan (feasibility study) was presented. A new version of Integrated Development Plan will be presented in 2009-2010.
Production capacity, technology	A concentrator with a single SAG circuit has the capacity of an initial throughput rate of 35 million tons (100,000 tons-per-day (tpd)). Assuming that the expansion is undertaken as scheduled, the project has the potential to achieve a mill throughput of 56 million tons per year (150,000 tpd). Initial, large open-pit mine will be developed on the near-surface Southern Oyu deposits; and underground block-cave mining operation at the Hugo Dummett North and South deposits is planned. The independent study indicates that the Oyu Tolgoi Mine will be capable of average annual production in excess of one billion pounds of copper and 330,000 ounces of gold for at least 35 years. Peak annual production in excess of 1.6 billion pounds of copper and 900,000 ounces of gold is projected to be reached six years after initial production begins (Year 6).
Environmental impact	The environmental baseline study, Environmental Impact Assessment (EIA) and Environmental Protection Plan are in full compliance with the international standards for the mining industry, all environmental

	requirements of Mongolian laws and established standards, and standards established by The World Bank for international mineral development projects. IMMI is committed to achieving the international environmental management standards for the Oyu Tolgoi mine development. A Preliminary Assessment Report completed in early 2004 was prepared in conformance with ISO 14001 requirements	
Project personnel	**Name**	Batkhuu G.
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Project 24. **Oil refinery plant**

Project life, location	- 2010-2012 - Gobisumber aimag, Choir	
Total investment	USD 900.0 million /JICB's estimate USD1200.0 million/	
Payback period	5-8 years	
Project rationale	- National Development Goal /5.2.1.1/: to build large plants of oil extraction and processing to fully meet domestic needs and export oil products on international markets. - Government's Action Plan /2.2.8/: to implement projects on oil processing, coal liquefying and gasifying and conduct a policy to supply domestic demand in petrol and fuel;	
Project goal, demand	To reduce Mongolia's crippling dependence on petroleum import from Russia.	
Project's socio-economic benefit	Savings in forex, positive impact on trade balance Additional budget revenue	
Required infrastructure	The infrastructure exists. A study on water resources is required.	
Exploration history	Though the feasibility study has been completed, it isn't yet approved.	
Production capacity, technology	The annual oil refining capacity will depend on available resources and technological solution which will be in compliance with the international standards.	
Environmental impact	To comply with the international standards for the oil refining industry, all environmental requirements of Mongolian laws and established standards.	
Project personnel	**Name**	Boldkhuu N.
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Project 25. **Tavan Tolgoi**

Project life, location	Umnugobi province, Tsogt Tsetsii soum	
Total investment	Estimated initial investment cost USD 1.55 bln Estimated total investment cost USD 3.15 bln /40-60 years/	
Project rationale	National Development Strategy /5.2.1.1/ Government's Action Plan /2.2.3/ To turn the strategic and the biggest mining deposits into economic utilization and to start exploiting the Tavan Tolgoi coal mine. The feasibility study is not available.	
Project goal, demand	Development of Tavan Tolgoi Coal Deposit	
Project's socio-economic benefit	Development of South-Gobi region Benefit to foreign investors	
Required infrastructure	- Processing facility - Coke plant - Power plant - Water treatment - Housing - Office building - Service and maintenance center - Checking point - Airstrip - Other facilities	
Exploration history	Tavan Tolgoi contains over 5 bln tons of established coal resources suitable for open-pit mining.	
Production capacity, technology	Coal production ('000 tons/year): 20.000 Coal processing capacity ('000 tons/year): 15.000	
Environmental impact	The environmental impact analysis is required.	
Project personnel	**Name**	Batkhuu G.
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Project 26. **Tumurtei iron ore**

Project abstract	
Project background	The Darkhan Metallurgical Plant (DMP) meets the requirement to improve the production capacity and assortments of products. DMPlant has published its own development concept which focuses on a two-stage development of the iron ore mines for which it holds the licenses. Stage 1– investment in mining exploitation coupled with mineral processing ('Tumurtei'- iron ore deposit) Stage 2–investment in iron ore processing plant and expansion of DMPlant Therefore we need to get a consulting service and investment.
Total proposed cost or needed investment for the project	USD 119.3 mln
Estimated investment profit rate	IRR 20.9%
Timeline for investment repay	Pay back 5.7 year
Brief of project implementation plan	
Timeline of a project	From 2010 to 2018
Project scope	Mining and iron ore concentration and metallurgical activity
Project objectives	Domestic and foreign trade of iron ore and metal product
Desired outcomes of a project	NPV USD 10.7 mln
Project inputs and resources	Therefore we need to get a consulting service and investment
Project implementation and production venue	Tumurtei iron ore, Eruu sum Selenge aimag
Production capacity	3.0 mln tons
Project risks, constraints, exclusions and special cases	Safely
Target markets	Domestic and foreign trade of iron ore and metal product
Cooperation mode with investor	Shareholding
Brief economic estimation	Net cash flow accumulation USD 74.6 mln
Company related information	
Qualifications of the company	good

Previous experience on similar projects	Tumurtolgoi iron ore project
Ability to work on time and within budget	Possible to work
Project personnel	
Surname	Gombo
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Job title	Economist
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Organization activity	Iron ore processing and metallurgical activity
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Project 27. **180kt/a Semi-coke Smokeless Fuel**

Project abstract	
Project background	This project is aimed to produce 180x103 ton semi-coke per year and byproducts such as coal tar and semi-coke oven gas that will be supplied to existing boiler of PP. The main goal of this project is to reduce the air pollution of the city and to improve living conditions of citizens by introducing new energy efficiency fuel – semi coke smokeless fuel.
Total proposed cost or needed investment for the project	The engineering construction investment is estimated as USD 10.0 million. It includes the following sections: coal preparation section, coking section, coke screen section, gas cleaning section and the auxiliary system (circulating water pumping station, transformer substation, outer pipeline network, boiler reconstruction, general plan and transportation)
Estimated investment profit rate	The estimation of the ERR (20year) - 20%.
Timeline for investment repay	Timeline for investment repay is 3 years.
Brief of project implementation plan	
Timeline of a project	The Project implementation plan: May, 2010 Finish confirmation May-July, 2010 Finish preliminary design and be approved August, 2010 Start construction May, 2011 Get into production
Project scope	According to the development plan and demand of PP2 to Semi-coke Smokeless Fuel Project, 6 SC30 type inner-heating semi-coke ovens will be built, with the output of 180kt/a. The products are semi-coke, coal tar and semi-coke gas. The project consists of: coal preparation section, coking section, gas cleaning section, transformer substation, circulating water pumping station and general plan and transportation. A 35t/h boiler will be reconstructed by changing or adding gas nozzles. Power, water and steam supplying system will not be built because PP2 is able to meet the demand of the project. Office and living installations are also full enough, so they needn't be built either. Production and auxiliary installations outside the boundaries of the semi-coke plant are not considered, such as railway, road, water and power supply source. If necessary, PP2 could assign another institution to do design. But the nodes or knots of water and power network will be given along the boundaries of semi-coke plant for the project.
Project objectives	- to reduce the air pollution by production of semi-coke smokeless fuel. - to transfer better technologies for utilization of coal in the country. - to improve an efficiency of using coal by means of thermal processing of coal, semi-coke smokeless fuel, combustible clean gas, and exportable coal tar. - Renovation of coal fired power plant #2 with a purpose to upgrade its technical capacity and switch part of coal fuel to gas fuel in integration of semi-coke plant, and steam will be distributed to PP4.

Desired outcomes of a project	To reduce the air pollution by producing household smokeless and cleaner fuel that has more combustion and environmental efficiency than raw coal.
Project inputs and resources	The land form of the site is even, the absolute elevation is 1266.5~1268.0m. The railway leased line is from the west side. 3 km northwest is taolagai station, with a branch to central material storage. The railway leased line of the power plant joint with the branch, go around south of the storage and enter into the plant. North of plant, there is a main road to Ulaanbaatar. The advantage of transportation is obvious. The plant located at bottomland of Tuul River vale, with even land and fleet water, abundant water resource. As foresaid, the power plant has its location advantage to develop.
Project implementation and production venue	Power Plant No.2, 180kt/a Semi-coke Smokeless Fuel Project, located at west of Ulaanbaatar city, 6KM from the central of the city. West of the site is central material storage; 1KM north are meat process plant and flour plant; east is railway bureau, Ulaanbaatar high iron run through the site; south near sheribo river, anabranch of Tuul River, it's 0.5 km away form the riverside of sheribo river, 2.5km from the Tuul River.
Production capacity	In the plant, there were two condensation turbo-generators, three steam boilers with capacity of 35t/h which generated electrical power to the Tolgoit area of Ulaanbaatar in 1950s. With technical and economic assistance of the Soviet Union, the power plant has extended with two new steam boilers of BKZ-75-39 FB type and one turbo-generator of PT-12-35-10 type. As a result, the capacity of power supply has improved significantly that reached 24MW/h as well as the plant had commenced to delivery heat. The demand of energy has been increased rapidly in the western districts of Ulaanbaatar. AK-6 model turbine was redesigned in 1980, meanwhile, two additional PSV-200-15 type boilers had been installed that had been capable of delivering heat. During 2001-2002, two TS-35-39 model steam boilers had been transferred to burn with low rate at high temperature and the ash-keeper had been replaced by battery cyclone.
Project risks, constraints, exclusions and special cases	There will not be any hazardous products manufactured, only a liquid waste that will have a treatment. The arrangements of buildings, structures, selection of building materials, structure calculation for anti-earthquake and measures for anti-earthquake structure are done according to the standard GBJ11-89 of P.R.China.
Target markets	The project would bring a very beneficial opportunity to keep the costs low that will is helpful for poor families. This plan shall supply 50% of all the households in the Ger districts with the smallest amount of investment. At the meantime, it will supply the PP2 by clean coal gas, will eliminate 25,000 tons of raw coal combustion and will reduce 37,500 tons CO2 emission at the atmosphere. In another hands, this Semi Coke can be burned in household stoves without any changes in the current stoves. So it will not give pressure to people to change their former stoves. Semi Coke smokeless fuel Max price is USD45 that is equal to the market price of raw coal.

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INFRASTRUCTURE

- Sectoral information

Construction sector

Mongolian construction sector has been developed successfully for the last 80 years period, disregarding the transitional period during 1990s that was the starting era of market economy transmission. One of the main examples is that the sector was grown by nearly 9 per cent in 2007, with a significant growth in the construction, transport and tourism sectors.

As of today some 1000 construction erection companies, 190 construction design companies and 250 building material producers are collectively employing over 30,000 engineering technical staff and skilled workers and are operating country-wide. Among those there are 90 construction, 5 construction design and over 50 building material companies that are foreign invested.

At the end of December 2008, the construction installation work of 440.3 bln tugrugs was carried out. The construction installation work in value of 416.0 bln tugrugs or 94.5% was performed by the domestic construction entities whereas the foreign construction entities performed work amounted just for 24.2 bln tugrugs or 5.5%.

Compared with end of December 2007, the construction and capital repair work have decreased by 50.9 bln tugrugs or 13.1% and the work by domestic entities has decreased by 51.6 bln tugrugs or 14.2%.

The total construction and repair comprises 29.9% of residential building, 17.4% non-residential building, 38.8% of general engineering building and 13.9% of capital repair and maintenance. The shares of Orkhon aimag and Ulaanbaatar city in the total construction and capital repair done by domestic entities were 9.7% and 54.4% respectively.

Through the construction erection development, the numbers of construction material factories and construction material importers have effectively boosted in recent few years as well as the numbers of construction material production types. As of today, 470 construction material factories are in service and over 100 of them have been established in the last 3 years.

The Government is taking actions to enhance the foreign relations in the construction sector, to study the construction methodologies, materials, techniques and technologies of the countries with technical and technological advancement.

The Government of Mongolia has announced and completed '40.000 housing project' between 2005-2008, with a completion of 37.000 houses. According to the experience of '40 000 housing project' and reviewing its pros and cons, the government has planned to implement '100 000 housing project' in the next 4 years.

Transportation: Road, Aviation, Railway, Port

The transport sector plays a very important role in the development of Mongolia, a country with a vast territory and sparsely settled population.

Mongolia has plans to be connected to the road network of South Asia and Europe in the near future through its 'Millennium Road'. The Mongolian transportation sector consists of 4 sub-sectors, namely road transport, railway transport, air transport and water transport.

Road sector

The main objective of the domestic road network is to provide a connectivity between aimag centers and Ulaanbaatar city, and between aimag centers and their surrounding regions. To achieve this goal, Mongolia has a state road network of just over 11,200 km, of which only about 1,500 km are paved, 1,440 km has a gravel surface and 1,346 km has an improved earth surface. Over 6,900 km is earth tracks. On the state road network, there are 364 bridges with a total length of just over 13,500 meters (an average length of 37 meters). But of these, 178 are of wooden construction and account for about 20 percent of the total length.

The second objective is to provide connectivity between aimag centers and their surrounding regions, and this is achieved by a local road network of about 38,000 km, of which only 400 km is paved and 500 km have a gravel surface, so about 96 percent of this network comprises earth tracks.

The third objective is to provide links to neighboring countries. At present only one paved road leads to a border post, the road from Ulaanbaatar to the Russian border, but the road to the Chinese border at Zamyn Uud is nearing completion. A third paved border road, in Western Mongolia linking China to Russia, is under consideration.

The road network has been developing in Mongolia since 1929. Over the past years a total road network of 49.250 km has been developed, of which 1714.9 km is paved, 1946.3 km is graved, and 1923.36 km is an improved earth. In addition, there were constructed 16419.3 meters of concrete and 11287.3 meters of wooden bridges. The Mongolian Department of Roads was assigned as the Government Implementing Agency responsible for developing the state road network, implementing the government road-related policies, providing the road construction and maintenance companies with professional administration and operational co-operation, and supervising the road bridge construction and maintenance.

Millennium road

The Parliament of Mongolia has approved the 'Millennium Road' project by its resolution No.09 of 2001 and has instructed the Government to arrange the activities associated with the implementation of the project. The construction of roads and bridges under the 'Millennium Road' project is set to be carried out within 8-10 years. As the capacity of the road construction machinery and equipment used in road sector industries is not adequate for the construction of the 'Millennium Road', the 'Laws on Customs Duty and Value Added Tax Exemption of road construction machinery and equipment' imported for the purpose of 'Millennium Road' and 'law on Exemption from fee on common minerals' were ratified and followed for promoting the technical innovation.

The 'Millennium Road' has been planned to be constructed starting from Ulaanbaatar, and directing towards east and west and construction is carried out in accordance with the plan.

Urban Transport

The capital city of Mongolia, Ulaanbaatar has a road network of 464 km, of which about 78 percent is paved, the remainder is being mostly earth tracks within ger districts. Of the 50 bridges in Ulaanbaatar, almost 90 percent are of concrete construction. The paved road

network has remained largely unchanged in length for two decades, whereas the vehicle fleet has more than doubled.

Railways

The Mongolian rail network comprises 1,815 km of broad gauge track, of which 1,110 km are on the main line linking Russia to China /Trans-Mongolian main line/, 239 km is on a separate network in Eastern Mongolia that has its own link to the Russian railway, and the remaining 477 km has branches from the main line.

Mongolian Railway is critically important for Mongolia, linking the country with Europe and East and South East Asia through our 2 great neighboring countries. Being an integral part of the International Railway Network it is the land bridge and the shortest way, connecting East with West. A fiber-optic terrestrial network that links Mongolia, China and Russia was launched in April 2004.

In addition to mining outputs, the railway is the preferred means of transport for most of Mongolia's international trade. The current dominance is likely to reduce when the paved road is completed to compete with the railway from Ulaanbaatar to the Chinese border at Zamyn Uud. The Chinese authorities require that some Mongolian products, especially animal products including cashmere, be transported by road within China. But even given these disincentives, the railway should be able to retain a cost advantage over road transport over this distance, particularly if road transport from Ulaanbaatar to Zamyn Uud is expected to contribute to its infrastructure development and maintenance cost in a way comparable to that of the railway.

Mongolian Railway is a member of the Railway Cooperation Organization, the International Railway Union, and the International Union for Freight Coordination of Trans-Siberia.

Aviation

Due to the sparse population, and the severe weather conditions during winter, the surface transportation by road and railway is not well developed in Mongolia. Air transport plays an important role in smoothing the socio-economic activities in Mongolia. Particularly, tourism is highly considered in view of the importance of this industry to the general economy of Mongolia. Without the proper air transportation infrastructure that provides the connection of Ulaanbaatar and the regional centers, tourism would be disadvantaged. More than 98 percent of international air transport services use the Chinggis Khaan International Airport in Ulaanbaatar, while domestic aviation has 17 airports available with runways suitable for the un-pressurized turbo-prop aircraft.

The international airport faces frequent closures because of strong winds, sand or snow storms or unacceptable visibility because of excessive air pollution. The runway is relatively short for a full service international airport. A consideration is being given to the construction of a new airport in a more appropriate location, but this would be very expensive for the relatively small number of passengers who would use it.

Few domestic airports have infrastructure that complies with the International Civic Aviation Organization standards, but they mostly have sufficient infrastructure to accommodate the few scheduled domestic services that operate. Only four have paved runways, and only these and one other have runway lightings. All four paved runways exceed 2,440 m in length and the thirteen gravel runways exceed 1,800 m. Gravel runways are adequate for operations

by un-pressurized turbo-prop aircraft that have been used on domestic services for the last three decades, but are likely to cause a damage to the pressurized jet powered aircrafts that are beginning to be used on domestic routes.

A membership also makes it possible for MIAT to do business and to cooperate with foreign airline members with the status of a fellow member. There are 6 private air companies operating in Mongolia. The main operations of private airlines are the charter flights, particularly to the tourist camps, and the flights to certain sites during emergency situations. The Mongolian Government's policy on the development of the civil aviation sector is to accelerate the participation of private sector, to decrease market monopolization and to support the foreign investment and cooperation.

MIAT makes 6 international flights to Moscow, Beijing, Soul, Tokyo, Berlin and Irkutsk from Ulaanbaatar.

Ports and Shipping

As a land-locked country, Mongolia does not have any external sea ports. In total, Mongolia has 580 km long inland waterways. However, Lake Khovsgol alone has been heavily used. The Selenge (270 km) and Orkhon (175 km) rivers are navigable but carry a very little amount of traffic. The lakes and rivers freeze over the winter and are usually open between May and September.

At present, there is the 'Sukhbaatar' ship, 3 barges and over 30 motorboats used in Khovsgol Lake. There are also more than 20 motor-boats in operation in Khovd, Dornod and Selenge aimags.

Transport

In 2008, 23.9 mln ton of freight and 231.6 mln passengers (duplicated) were carried by all type of transport. Compared to 2007, the volume of freight and number of passengers were increased by 2.5% or 574.1 thous. ton and by 10.3% or 21.7 mln persons respectively.

In 2008, 14.6 mln tons of freight and 4.4 mln passengers, 1.8 thousand tons of freight and 365.5 thousand passengers, and 9.3 mln ton of freight and 226.9 mln passengers (duplicated) were carried by railway, air and auto transport respectively.

In 2008, total revenue from transportation reached 412.1 bln tugrugs that was increased by 20.4% or 69.8 bln tugrugs in comparison with that of 2007.

In 2008, 190.5 thousand vehicles were counted by auto vehicle inspection which number was increased by 17.6% or 28.5 thousand vehicles compared to that of 2007. 40.1% of the total vehicles has been used up to 10 years and 59.9 percent are used for more than 10 years.

Project 28. **Development of international, national and domestic auto roads**

Project life, location	- From 2010 to 2015 - Umnugobi, Dundgobi, Dornod, Arkhangai, Bayankhongor, Khuvsgul, Zavkhan, Khovd, Bayan-ulgii, Gobi-Altai, and Uvurkhangai provinces	
Total investment	Total cost: USD 1.2 bln	
Payback period	Will be determined after feasibility study is made	
Project rationale	To implement government action plan 2008-2012 № 2.2.24, to solve power, road, and rail way problems of the strategic deposits of mineral recourses № 2.4.17, to continue to connect province centers to Ulaanbaatar by roads, and to build Ulaanbaatar-Mandalgobi-Umnugobi direction roads № 2.4.19, to build bridge, hole pass ways, parking spaces and double layer intersections, and to renew both Ulaanbaatar and province center roads № 2.4.21, to build Bayankhongor-Gobi Altai direction foundation roads № 2.5.5, to upgrade roads among provinces for tourism and transportations, and to build foundation roads on some of roads	
Project goal, demand	To develop and extend road system and to connect province and region's centers to Ulaanbaatar by foundation road. To give contribution to country's social and economic development by building non obstacle travel condition, reducing transportation time and cost	
Project's socio-economic benefit	- Development and extension of road system will contribute to the social and economic development of the region - Once roads are built, the transportation time will be shorter and will create more comfortable conditions to travel - Domestic firms will be provided by tasks in feasibility studies and constriction works of project - To contribute to tourism development	
Required infrastructure	Will be determined after feasibility study is made	
Exploration history	Most directions' feasibility studies are done	
Production capacity, technology	About 4,500.0 kilometer length of foundation road will be built	
Environmental impact	Organizing many branch road directions will help to reduce the negative impacts of the roads to the environment	
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Project 29. **Generating fuel and electricity from waste and biomass**

Project life, location	- From 2010 to 2015 - In Ulaanbaatar	
Total investment	- Total cost of project is USD 200.0 mln - Cost to build a complex that sorts wastes and produces energy from them is USD100.0 mln - Cost to build a plant that produces gas fuel from organic waste and biomass is USD 100.0 mln	
Payback period	For 10 years	
Project rationale	- To implement Millennium Development Goals Based on Comprehensive National Development strategies - To implement Government action plans: 2008-2012's 2.3.5 ; 2.3.18; 2.5.10; 2.2.20; 3.2.; 3.1.15	
Project goal, demand	- Doing the landfill and producing the wastes in environment-friendly way - To produce fuel gas, energy, and materials from organic waste and natural biomass - To develop food, fuel, and energy aimed biomass farms	
Project's socio-economic benefit	- To improve living conditions for better human health - To substitute some part of fuel and energy exports - To help reduce the air pollution and global warming	
Required infrastructure	- To be connected to railway and road - Possibly, to locate in places that have an easy access to receive an organic waste - To have a place for biomass production - To be close to gas fuel and energy's consumers	
Exploration history	This project is already practiced and implemented successfully in the developed countries	
Production capacity, technology	- To produce an energy from 1,000.0 tons of waste in Ulaanbaatar - To produce a fuel gas from 250 tons of organic waste and biomass - To use an high temperature gas technology, UHTG	
Environmental impact	- No negative impacts to human health and environment - To qualify international environmental standards	
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Project 30. **Highway connecting Altanbulag – Ulaanbaatar – ZaminUud**

Project life, location	- From 2009 to 2012 - In Selenge, Darkhan, Tuv, Gobi-Sumber, and Dornogobi provinces	
Total investment	Total cost USD 1,200.0 million	
Payback period	Will be determined after feasibility study is made	
Project rationale	- To implement Government action plans: 2008-2010 ➢ 2.4.15, to make significant progress on Transit-Mongolia program, and to develop infrastructure and to improve its logistics systems ➢ 2.4.15.1, to start upgrading the level of Altanbulag – Ulaanbaatar – ZaminUud direction roads ➢ 2.4.18, to build Altanbulag – Ulaanbaatar – ZaminUud road that will be connected to the international road system, and Yant-Khovd- Ulgii- Ulaanbaishint directions foundation Roads - To qualify to the Asian Auto Roads' system	
Project goal, demand	- To develop transportations among border regions and countries - There will be no obstacles for transit-transportations between Russia and China	
Project's socio-economic benefit	- If project is implemented, the transportation durations and costs among major cities of Mongolia and between Ulaanbaatar and Border cities will decrease significantly. - By building the international transit system in Mongolia, Mongolia can benefit a significant amount of profit from passing traffics through its high way.	
Required infrastructure	- No specific infrastructure needs are required	
Exploration history	Pre-feasibility study is in a process	
Production capacity, technology	- Total length of the road is 990.0 kilometers with two travel directions. - Each of them has 10.0 meters of width	
Environmental impact	- The high way will give important social and economic impacts to the country - The release of automobile toxic gas will decline - Many branch roads will be organized that shall help reduce the earth damages - No significant negative impacts on environment	
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Project 31. **National satellite for communications of Mongolia**

Project life, location	End of the implementation of the project, signal receiver and control stations will be located in Mongolia
Total investment	Total cost: USD 600.0 million
Payback period	15 years
Project rationale	- To implement Government action plans' № 2.5.8, 2.4.25 - To implement the Millennium Challenge goals based Comprehensive National Development Strategies' № 5.3.4
Project goal, demand	- Mongolia will have its own satellite system, so that each household is able to have low cost internet, TV, and radio services - Herdsmen will have internet based communication services - The Government services to individuals, organizations, weather service, banking, country's boarders and customs, nation's defense, and emergency communications services will be available to individuals and organizations in low cost rate nationwide - Today, the individuals, households, and organizations pay high rate for communication services because Mongolia has been using the international space communication systems for 30 years and, in recent years, Mongolia has been paying USD 2.0 million for using IntelSat and AsiaSat. - Even when the International telecommunication union gave an international space door to Mongolia 20 years ago, Mongolia could not launch its satellite and never used that door before. Today, the country situation requires using that door effectively and efficiently. Therefore, Mongolia faces an urgent need to launch suitable and reliable satellite as soon as possible.
Project's socio-economic benefit	- No matter the geographical locations, individuals, herdsmen, households, and organizations will have information and communication services at low cost rate - To organize the government urgent services more efficiently and accurately such as emergency, defense, and weather. - By the initial estimation, the satellite based service will earn about USD 130.0 million sales revenue and USD 50.0 million net profit
Required infrastructure	The receiver stations, administration and control stations, and surrounding infrastructure
Exploration history	- In 2009, Mongolian space communication system study was done by joint teams, Mongolia and International Telecommunication union - In 2004, Mongolian space communication system study was done by joint teams, Mongolia and IntelSat - 'MONSAT-1' space project was done by leading engineers at Information, Communications Technology and Post Authority - Prefeasibility study was done
Production capacity, technology	- To launch small size satellite, up to 500.0 kilogram weight - According to study, the lifetime of satellite is 15 years or more, and it has 80% efficiency usage

Environmental impact	There is no negative environmental impacts	
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Project 32. **New 920 km railroad connecting Tavan Tolgoi-Zuunbayan-Sainshand-Baruun Urt-Choibalsan**

Project life, location	2010-2015, in Umnugobi, Dornogobi and Eastern provinces
Total investment	*A.Gobi region railway line* - Tavantolgoi-Zuunbayan section- 370 km The approximate amount of construction of - - Tavantolgoi-Zuunbayan section is USD 666 mln USD. *B.Eastern region railway line* - Shaishand-Baruun-Urt section -350 km - Baruun-Urt-Choiabalsan section-200 km The approximate amount of construction of Zuunbayan-Choibalsan section and its infrastructure is USD 990 mln. Total investment is USD 1.6 bln.
Payback period	Will be determined after feasibility study is made
Project rationale	- The government's action plan: 2008-2012 2.2.24, To solve power, road, and rail way problems of the strategic deposits of mineral recourses, to build infrastructure for transporting mining products
Project goal, demand	- To build infrastructure for mining deposits in where reserves are defined - To increase exports - To increase a foreign currency by expanding in foreign markets - To improve conditions of transition and settlement - To reduce transition to urban areas - To promote industrialization - To develop region's society and economy by expanding rail way infrastructure There is a great necessity to extend the railway network of Mongolia in connection with the mining industry in the country due to the substantial increase over next few years and the urgency to provide much needed transportation for mining products. The extended railway network aims to provide: - possibility of connection of the regions - access to the sea - not dependent on one market - To transport the mining products and to open the new transit corridor In light of these developments, it is required to construct the railway line to connect the existing mail line with Gobi and East regions.
Project's socio-economic benefit	- To connect to current rail way system - To become bridge of transit transportation to connect Mongolia, Russian, and China - Possibility to export the mining products to Russian and Chinese markets using two directions, as well as to transport for local needs - Connection through the Russian and Chinese railway network to Europe, Middle East, East and South East Asia by Russian ports of Bladivostok, Nahodka, Vostochnyi and Chinese ports of Tianjin and Dalian.

	- The line will be a junction of Gobi, Central and East network connections - The establishment of new transit transport corridor - The establishment of new access to the sea by connecting to the North East Asia - The role and participation of Mongolia in regional cooperation will increase - There is minimal number of curves due to a good landscape for the railway construction - Possibility of the effective operation of Ulaanbaatar Railway's branch line of Bayantumen.	
Exploration history	- Tavantolgoi-Tsagaan suvarga-Zuun bayan- Sainshand direction rail road feasibility study has begun. - Tavan tolgoi-Gashuun suhait direction detailed proposal and plan of railroad construction work have been made. - Hariin suhait-Shivee huren direction detailed proposal and plan of railroad construction work have been made.	
Production capacity, technology	- Freight transit of 20 mln. tons per year - To construct Tavantolgoi-Tsagaansuvraga-Zuunbayan-Sainshand wide ring 400 km rail way. - Tavan tolgoi-Gashuun suhait direction: narrow ring 270 km rail way - Nariin suhait-Shivee huren direction: 47.8 km narrow ring rail way	
Environmental impact	- To give a big economic contribution to region - Significant reduction of branch roads, so that less land damage - No major harmful impacts on environment - Job creation - Poverty and migration alleviation	
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Project 33. **Providing the water needs of Gobi region from Orkhon river**

Project life, location	- From 2009 to 2014, - Orkhon river, and Bulgan and Khishig-Under provinces	
Total investment	USD 540.0 million	
Payback period	For 13 years	
Project rationale	The Gobi steppe is considered as a region with very dry soil, less surface water reserve and less natural humidity. In this region, the ground water is the only source for drinking and usage of people, small firms, and herds. If the project is implemented, the reserves for drinking and usage water for the people need shall increase dramatically by 2015. The provided water shall meet the basic hygienic requirements.	
Project goal, demand	- To increase the drinking water supply in the Gobi region is one of the Millennium challenge goals to implement. - To balance the eco systems of Orkhon and Selenge regions - To supply the drinking water to Gobi region people, and to improve their healthy living standards - To give contributions to the implementation of 'Atar III' program	
Project's socio-economic benefit	To supply the drinking and usage water for local residents, small firms, and manufactures in the Gobi regions	
Required infrastructure	The project will be implemented in rural areas. So, there will not be any infrastructure difficulties.	
Exploration history	- A detailed field study of the project will be made - An advanced field research will be made - An economical rationale will be made for the project	
Production capacity, technology	Total water demand is 2500 liters per second, and it has capability to supply the entire Gobi region.	
Environmental impact	- Has contribution to reduce the global warming and desertification - No negative effects on Orkhon river's water flow - To protect against a significant reduction of ground water reserve in the Gobi region - To supply 80 percent of water needs of power plants and mining deposits. This will create significant economic benefits to the development of both region and nation.	
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	Telephone	976-11-300075
	Name	Ganbaatar.B
	Job Title	Director, Sectoral Development, Investment, Policy and Coordination Department
	Organization name	National Development and Innovation Committee, Government implementation agency
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Project 34. **Providing housings for the population**

Project life, location	- Project will implemented in two stages: - 1st stage: 2009-2011 - 2nd stage: 2012-2015 In all regions of Mongolia
Total investment	USD 2100.0 million
Payback period	25-30 years / in case of soft loan condition/
Project rationale	- The Millennium Development Goal-based Comprehensive National Development Strategy of Mongolia: to implement the National Housing Program and to increase the housing numbers for the population rapidly - The Government's Action Plan, 2008-2012: /2.4.7/, to make feasibility study of 'Housing for 100 Thousand Households' program, and to implement the program, to make improvement on providing housing for middle and low income households, to make a feasibility study of 'Housing for 25 Thousand Households' project and to implement the project - 2009's Social and Economic Development Guidance: - To continue to provide a high quality housings for the population, to begin making a feasibility study of 'National Housing' project, and to build 6250 housings financed by foreign and domestic investors
Project goal, demand	- To create suitable economic and legislation environments, based on regional development concepts, urban development strategy, and housing demands in the construction sector - To utilize the land for the economic utilization - To construct an eco-friendly social and engineering infrastructure and to reduce the air and earth pollutions - To increase the production of domestic construction materials - To prepare a qualified human recourse in the construction sector - To intensify housing mortgage businesses and to provide opportunities to low and medium income households to buy houses by the mortgage - To build a qualified housing based on customers' demands and needs - To build housings for 100 thousand households, and to supply housings to no less than 30 percent of the total population of Mongolia - To build housings for 75 thousand households in the capital city, and 25 thousand housings in towns and small cities in provinces.
Project's socio-economic benefit	- To supply an increasing demand of the population for housings - To create a suitable economic and legal environment in the construction sector - To prepare skilled working force in the construction sector. This will help to increase an employment rate and reduce poverty - To utilize the land for economic circulation - To increase the domestic production of construction materials - To provide services of housing mortgage business to the public. This will create opportunities for middle and low income households to buy houses by mortgage

	- To build eco-friendly housing complexes. This will reduce air and earth pollutions in the capital city and other large cities - To increase the portion of green field in the residences of the capital city	
Required infrastructure	To build social and engineering infrastructures of new towns, complexes, centre districts, selvedge districts, and secondary districts in the capital city, region centers, and provinces	
Exploration history	In process of making feasibility study of '100 thousand housings' project, and taking actions on implementing at the Ministry of Road, Transport, Construction, and Urban Development	
Production capacity, technology	- To build '41.2 thousand housings' town-district - To renew selvedge districts into 24.8 thousand housing districts - To build 9 thousand housings additionally for an efficient utilization of districts' lands - To build 14 thousand housings in secondary districts - To build 5 thousand housings in regional centers - To build 6 thousand housings in provinces	
Environmental impact	No major negative impacts on environment	
Project personnel	**Name**	Uuganbayar.TS
	Job Title	Advisor of Minister of Road, Transportation, Construction, and Urban development
	Organization name	Ministry of Road, Transportation, Construction, and Urban Development
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Project 35. **Upgrading the auto roads of Ulaanbaatar city**

Project life, location	- From 2010 to 2015 - In Ulaanbaatar, Mongolia	
Total investment	- Total cost is $900.0 million: - Cost to build 6 multi-level cross-roads- USD 200.0 mln - Cost to upgrade both current 350 km paved road and engineering infrastructure – USD 486.5 mln - To expand the Ulaanbataar road network by building 212 km paved road and its engineering infrastructure- USD 423.3 mln	
Payback period	Will be determined after the feasibility study is made	
Project rationale	- To implement 2008-2012 government action plans' № 2.4.19, - To renovate and expand road networks of Ulaanbaatar and aimag centers and to construct two-level cross-roads, bridges, tunnels and parking lots; As the population of Ulaanbaatar is increasing, the traffics, air pollution, and traffic accidents have increased dramatically. - As of 2009, there were 420.0 kilometer long paved roads in Ulaanbaatar city. The usage period of 80 percent of those roads has expired or most of them have been used for over 20 years. The remaining 20 percent needs urgent maintenances.	
Project goal, demand	- To improve the city traffic system - To give contribution to the economic development of the country - To improve the travel conditions for pedestrians and drivers	
Project's socio-economic benefit	- Traffic accidents will drop - Traffic jams will decrease, and traffic speed will increase - The city air pollution will reduce - The quality of traffic service will improve - The economic benefits from traffics will increase	
Exploration history	- A pre-feasibility study is made - In progress of making the feasibility study	
Production capacity, technology	- To launch small size satellite, up to 500.0 kilogram weight - According to studies, the lifetime of satellite is 15 years or more, and its efficiency usage is 80%.	
Environmental impact	- Positive impacts on the social and economic development of Ulaanbaatar city - Improvement on travel conditions for pedestrians and drivers - Reduction of an air pollution and dust of Ulaanbaatar city	
Project personnel	**Name**	Munkhbaatar.B
	Job Title	Deputy Mayor of Ulaanbaatar City, in charge of Infrastructure
	Organization name	Mayor of Ulaanbaatar City
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	E-mail	munkh262000@yahoo.com
	Fax	975-11-327199

Project 36. **Tavan Tolgoi Power Station**

Project life, location	- 2010-2015 - Tavan Tolgoi coal deposit /Umnugobi aimag/	
Total investment	USD 600.0 mln	
Payback period	5 years	
Project rationale	Government's Action Plan / 2.2.24/: - issues related to the power supply, road and railway building for strategically important mining deposits - Appointed in the program' Central energy system', approved by the Parliament of Mongolia	
Project goal, demand	To resolve the power supply to the strategic deposits and cities and settlements of the Gobi region that will be built next to the mining deposits	
Project's socio-economic benefit	Ensuring the energy supply for the South region and Oyu-tolgoi, Tavan-tolgoi, Tsagaan-suvarga mining deposits and building the opportunities to develop the factories and services accompanied by the development of the mining and exploration	
Exploration history	- A feasibility study was made by Japanese researchers, however, the economical feasibility study was insufficient. - The foreign investors can be interested in the firm market of power supply in this region	
Production capacity, technology	- The Power station produces 300 MW. - The Power station required to use eco-friendly high technologies /low usage of water, air-cooling system; dry ash removal/	
Environmental impact	To comply with the international standards for the electricity industry and all environmental requirements of Mongolian laws and established standards	
Project personnel	**Name**	Batrenchin.Sh
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	Organization name	Ministry of Mineral resource and Energy
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	Fax	976-11-324379
	Name	Ganbaatar.B
	Job Title	Director, Sectoral Development, Investment Coordination, and Policy Department
	Organization name	National Development and Innovation Committee
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	Fax	976-11-327914

Project 37. **5th energy power station of Ulaanbaatar**

Project life, location	- 2011-2016 - Ulaanbaatar	
Total investment	USD 300.0 mln	
Payback period	5 years	
Project rationale	- The Millennium Development Goals based Comprehensive National Development Strategies /5.3.2/: To build and use new sources of electric and thermal power in Ulaanbaatar City. - Government's four-year Action Plan /2.4.22/: to build new sources of heat and electric energy in the capital city	
Project goal, demand	The Power Station #5 is proposed for supplying the electricity and heat demand in Ulaanbaatar and other parts of Mongolia	
Project's socio-economic benefit	- To secure the electricity and heat demand and to supply the capital city with electricity and heating - To supply electricity and heating other regions of Mongolia - The Government of Mongolia defined PS#5 as the priority investment, due to the high demand for electricity and heating in Ulaanbaatar city.	
Required infrastructure	Bidders to prepare the feasibility studies and environmental assessments	
Exploration history	Bidders to prepare the feasibility studies and environmental assessments	
Production capacity, technology	300MW	
Environmental impact	- Has to qualify with international standards - Has to obey Mongolian laws and international environment regulations - Has to be eco-friendly	
Project personnel	**Name**	Batrinchin.Sh
	Job Title	Senior officer, Energy Policy Department
	Organization name	Ministry of Mineral Recourses and Energy
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	E-mail	batrenchin@mmre.energy.mn
	Fax	976-11-324379

Project 38. **100 thousand housings**

Project abstract	
Project background	The present situation of housing supply in Mongolia is 17% of the population. In the Ulaanbaatar city 150 thousand households living in extremely poor and hard condition that is below the basic living requirements. 1.3 million people living in disaster smoking environment, and school, kindergarten, hospital and health service supply are much lower than state standard. Therefore '100 thousand housing' project proposing to change the Ger area to modern urban habitations by creation of social-economic prosperous environment and investment and to adjust the city present social-economic and ecological obstacles by transfiguring the prosperity of business and investments.
Total proposed cost or needed investment for the project	The project budget 5.3 billion MNT (USD 3.6 mln), Required investment 3.5 billion MNT (USD 2.4 mln)
Estimated investment profit rate	30%
Timeline for investment repay	7 years
Brief of project implementation plan	
Timeline of a project	2010-2017
Project scope	75% of the project activity shall take place in Ulaanbaatar and 25% in the provinces. The benefits of the project include a boom in the construction industry and many socio-economic factors such as stable employment, increased manufacture of construction raw materials, housings for Ger area, and reduction in the air, water and land pollution.
Project objectives	- To reduce the air, water and soil pollution - To improve the school, kindergarten and hospital, health service supplies - To cut down unemployment
Desired outcomes of a project	To promote the stable employment
Project inputs and resources	Construction material industry, Cement, Iron steel, Mongolian labor force
Project implementation and production venue	Ulaanbaatar city, Secondary cities and Province centers
Production capacity	25'000 apartments per year
Project risks, constraints, exclusions and special cases	- Financing - Land - Infrastructure

	- Labor force - Legal environment
Target markets	To reach to 30% of housing supply rate in Mongolia
Cooperation mode with investor	EPC contract, JV, Lender of concession loan
Project personnel	
Surname	Bat-Erdene
Name	Chintulga
Job title	Executive director
Organization name	100 thousand housings project unit
Organization activity	To implement the 100 thousand housing project and control the project activity.
Address	Suite 500, building 38/2, Seoul street, Bayangol district, Ulaanbatar, Mongolia
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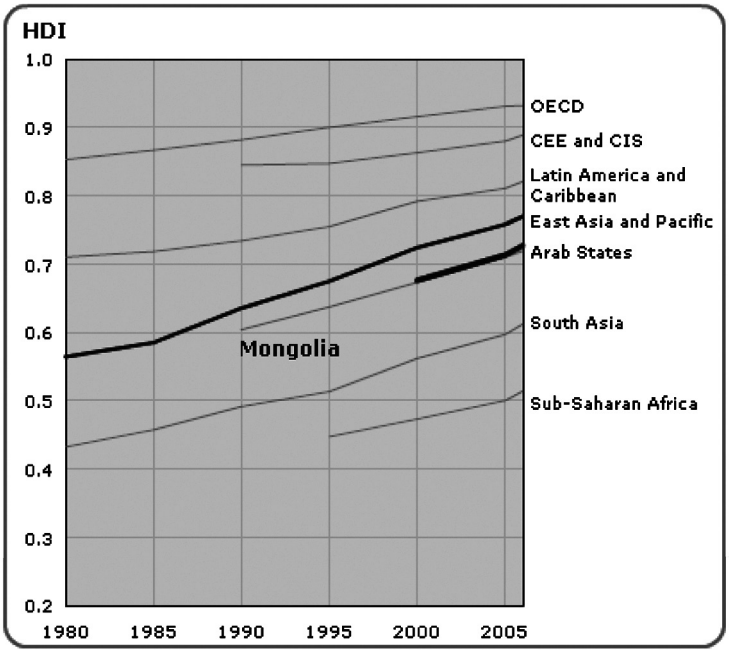
HUMAN DEVELOPMENT AND ENVIRONMENT

- Sectoral information

Mongolia's Human Development Index (HDI) is going beyond income. Between 2000 and 2007 Mongolia's HDI rose by 1.02% annually from 0.676 to 0.727 today.

Figure 1: HDI Trends



Source: Indicator table G of the Human Development Report 2009

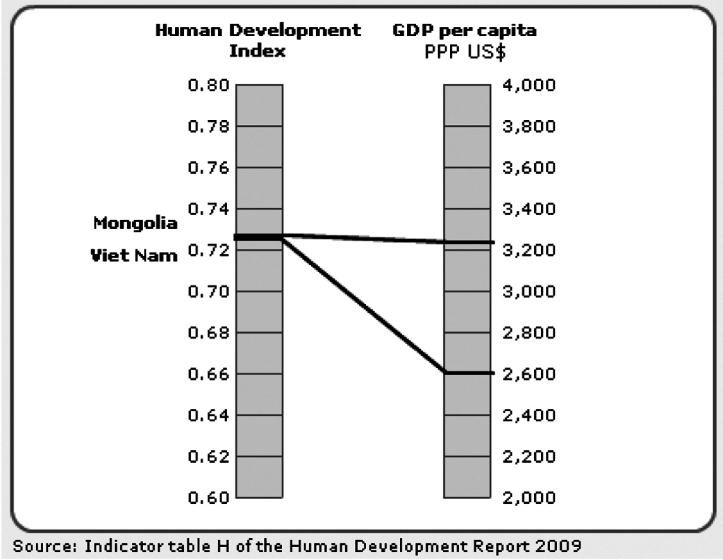
The HDI for Mongolia is 0.727, which gives the country a rank of 115thout of 182 countries with data (Table 1).

Table 1: Mongolia's human development index 2007

HDI value	Life expectancy at birth (years)	Adult literacy rate (% ages 15 and above)	Combined gross enrolment ratio (%)	GDP per capita (PPP USD)
1. Norway (0.971)	1. Japan (82.7)	1. Georgia (100.0)	1. Australia (114.2)	1. Liechtenstein (85,382)
114. Guyana (0.729)	115. Nepal (66.3)	32. Romania (97.6)	58. Philippines (79.6)	124. Philippines (3,406)
115. Mongolia (0.727)	**116. Mongolia (66.2)**	**33. Mongolia (97.3)**	**59. Mongolia (79.2)**	**125. Mongolia (3,236)**
116. Viet Nam (0.725)	117. Pakistan (66.2)	34. Israel (97.1)	60. Romania (79.2)	126. Cape Verde (3,041)
182. Niger (0.340)	176. Afghanistan (43.6)	151. Mali (26.2)	177. Djibouti (25.5)	181. Congo (Democratic Republic of the) (298)

Figure 2 illustrates that countries on the same level of HDI can have very different levels of income or that countries with similar levels of income can have very different HDIs.

Figure 2: The human development index gives a more complete picture than income



Human poverty: focusing on the most deprived in multiple dimensions of poverty

Table 2: Selected indicators of human poverty for Mongolia				
Human Poverty Index (HPI-1)	Probability of not surviving to age 40 (%)	Adult illiteracy rate (%ages 15 and above)	People not using an improved water source (%)	Children under-weight for age (% aged under 5)
1. Czech Republic (1.5)	1. Hong Kong, China (SAR)	1. Georgia (0.0)	1. Barbados (0)	1. Croatia (1)
57. Sao Tome and Principe (12.6)	85. Suriname (10.0)	32. Romania (2.4)	107. Malawi (24)	42. Egypt (6)
58. Mongolia (12.7)	**86. Mongolia (10.3)**	**33. Mongolia (2.7)**	**108. Mongolia (28)**	**43. Mongolia (6)**
59. Iran (Islamic Republic of) (12.8)	87. Russian Federation (10.6)	34. Israel (2.9)	109. Burkina Faso (28)	44. Panama (7)
135. Afghanistan (59.8)	153. Lesotho (47.4)	151. Mali (73.8)	150. Afghanistan (78)	138. Bangladesh (48)

Building the capabilities of women

The gender-related development index (GDI), introduced in Human Development Report 1995, measures achievements in the same dimensions using the same indicators as the HDI but captures inequalities in achievement between women and men. It is simply the HDI adjusted downward for gender inequality. The greater the gender disparity in basic human development, the lower is a country's GDI relative to its HDI.

Mongolia's GDI value, 0.727 should be compared to its HDI value of 0.727. Its GDI value is 100.0% of its HDI value. Out of the 155 countries with both HDI and GDI values, Mongolia has the best ratio.

Table 3 shows how Mongolia's ratio of GDI to HDI compares to other countries, and also shows its values for selected underlying indicators in the calculation of the GDI.

Table 3: The GDI compared to the HDI – a measure of gender disparity

GDI as % of HDI	Life expectancy at birth(years) 2004	Adult literacy rate (% ages 15 and older) 2004	Combined primary, secondary and tertiary gross enrolment ratio 2004
	Female as % male	Female as % male	Female as % male
1. Mongolia (100.0%)	1. Russian Federation (121.7%)	1. Lesotho (122.5%)	1. Cuba (121.0%)
2. Colombia (99.9%)	24. Europe (110.5%)	5. United Arab Emirates (102.2%)	5. Barbados (116.7%)
4. Bahrain (99.9%)	**26. Mongolia (110.4%)**	**7. Mongolia (100.9%)**	**7. Mongolia (115.1%)**
5. Lithuania (99.9%)	27. Romania (110.3%)	8. Seychelles (100.9%)	8. Kuwait (114.9%)
155. Afghanistan (88.0%)	190. Swaziland (98.0%)	145. Afghanistan (29.2%)	175. Afghanistan (55.6%)

The gender empowerment measure (GEM) reveals whether women take an active part in economic and political life. Mongolia ranks 94th out of 109 countries in the GEM, with a value of 0.410.

Migration

Mongolia has an emigration rate of 0.3%. The major continent of destination for migrants from Mongolia is Europe with 40.7% of emigrants living there.

Table 4: Emigrants

Origin of migrants	Emigration rate (%)	Major continent of destination for migrants	(%)
1. Antigua and Barbuda	45.3	Asia	46.6
175. Myanmar	0.7	Asia	77.6
178. China	0.5	Asia	64.0
181. Mongolia	**0.3**	**Europe**	**40.7**
Global aggregates			
Medium human development	1.9	Asia	43.3
OECD	3.9	Northern America	41.2
World	3.0	Europe	33.4

In Mongolia, there are 9.1 thousand migrants which represent 0.4% of the total population.

Table 5: Immigrants

Destination of migrants	Immigrant stock (thousands)	Destination of migrants	Immigrants as a share of population (%) 2005
1. United States	39,266.5	1. Qatar	80.5
16. Hong Kong, China (SAR)	2,721.1	8. Hong Kong, China (SAR)	39.5
163. Timor-Leste	11.9	162. Papua New Guinea	0.4
169. Mongolia	**9.1**	**165. Mongolia**	**0.4**
182. Vanuatu	1.0	182. China	0.0
Global aggregates			
OECD	97,622.8	OECD	8.4
Medium human development	40,948.6	Medium human development	0.8
World	195,245.4	World	3.0

Remittances

In 2007, USD194 million in remittances were sent to Mongolia. Average remittances per person were USD74, compared with the average for OECD of USD108. (See Table 6 for more details.)

Table 6: Remittances

Total remittance inflows(USD millions)		Remittances per capita(USD)	
1. India	35,262	1. Luxembourg	3,355
2. China	32,833	3. Tonga	992
92. Hong Kong, China (SAR)	348	49. Philippines	185
101. Mongolia	**194**	**85. Mongolia**	**74**
155. Lao People's Democratic Republic	1	154. Lao People's Democratic Republic	0
157. Burundi	0	157. Burundi	0
Global aggregates			
OECD	124,520	OECD	108
Medium human development	189,093	Medium human development	44
World	370,765	World	58

Source: Human Development Report 2009, http://hdrstats.undp.org/

Environment

Mongolia has magnificent landscapes, diverse ecosystems and rare species that are of global importance. Yet, the land and other natural resources are facing mounting threats. Mongolia's growing population and changing lifestyles are intensifying pressures on the country's fragile ecosystems. Overgrazing is degrading significant areas and displacing wildlife from its habitat. Pollution from industrial and urban growth is negatively affecting environmental quality. Moreover, hampering progress in the management of and protection of the environment is a conspicuous lack of human and financial resources and low institutional capacity. To address these challenges, the Government of Mongolia has enacted a series of environmental laws, expanded its system of nature reserves, adopted energy efficient technologies, and invested in pollution-abatement schemes. In the framework of the actions against environmental depreciation, the Government of Mongolia proclaimed environmental sector as one of the top priority sectors and offers investment seeking projects that are presented in this book.

View http://www.mne.mn/ and http://www.worldbank.org/ for more information

Project 39. **'ECO' project to purify domestically and industrially polluted water**

Project life, location	- From 2009 to 2014 - Private and government organizations in all rural and urban areas of Mongolia	
Total investment	- Total cost is USD 200.0 mln - Construction and building cost USD 80.0 mln - Equipment cost USD 100.0 mln - Working force cost USD 20.0 mln	
Payback period	For 8 years	
Project rationale	- To implement Government's 4 year action plan: - № 3.3, to reduce the air, water, and earth pollutions in the cities, and to improve the living conditions for residents - To implement the 'Water National Program': in the framework of restructuring and rebuilding the city sewage lines - To reduce the amount of toxic wastes affecting nature harmfully and to create healthy living conditions	
Project goal, demand	- To improve and apply small-volume sewage cleaning technologies for households and factories waste water - To solve all sewage cleaning related problems in all cities and urban areas	
Project's socio-economic benefit	- To improve healthy living conditions - To take out the bio gas from waste water and use it for fertilizing the land - To increase an employment rate - To create a management of reusing wastes and trashes and to contribute in the economic development - To reduce air pollutions and carbon dioxide - To develop tourism sector - To reduce high demand of central sewage cleaning facility and to improve the capacity of sewage cleaning facility - To apply technology for reusing waste water	
Required infrastructure	The project is implemented in urban and rural areas without need for specific infrastructure.	
Exploration history	- This technology is well-studied and implemented in the developed countries - A pre-feasibility study is done, and this technology is studied well and practiced for several times in Mongolia before - A payback period will be determined after feasibility study is made	
Production capacity, technology	To clean waste water in urban and rural areas and it is possible to reuse cleaned water and slim for fertilizing agricultural land fields	
Environmental impact	- Positive impacts on human health and high significance to create healthy living conditions - Dramatic reduction of air, earth, and water pollutions - Increase in the employment rate - No negative environmental impacts	
Project personnel	**Name**	Enkhbat. D
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	Organization name	Ministry of Environment and Tourism
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	E-mail	d_enkhbat@mne.gov.mn
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Project 40. **Industrial training complex for information technology**

Project life, location	- From 2010 to 2015 - Alternatives on locations: - In Valley of Technology that is planned to be built in 'Shine-Zuun Mod' in 'Khoshigtiin Khondii', Tuv province - In Students Town that is planned to be built in 'Buyant Ukhaa' District - In Students Town that is planned to be built in New District of Ulaanbaatar	
Total investment	Total Cost: USD 100.0 million	
Payback period	For 20 years	
Project rationale	- To implement the priority strategy №2 of the Millennium Challenge Goals Based Comprehensive National Development Strategies - To implement the Government Action Plans:2008-2012, 1.2.16.1, 1.2.16.2, 1.2.19.3, 1.3.20.1, 5.1.1.12 - To implement 'Tsakhim Mongol' program that was passed by the Parliament in 2005	
Project goal, demand	- To prepare skillful human recourse in ICT sector - To build infrastructure for ICT business development - To develop and promote ICT business firms particularly firms doing businesses in outsourcing, digital content, and software - To implement new ICT products and to build ICT research centers - To attract FDI to Mongolian ICT sector	
Project's socio-economic benefit	- International standard research center - International standard trainings and an improvement of ICT human resource capacity - Promotion of export oriented businesses of ICT firms and increase in their numbers - Increase in the employment rate in short-term	
Required infrastructure	- Administration and business promotion buildings - Training, study, and research buildings - Resident apartments and student dormitories - Green fields - Required engineering infrastructures: water, electricity, heating, and waste lines.	
Exploration history	Prefeasibility and feasibility studies are not done	
Production capacity, technology	- To produce ICT products and sell them to both domestic and international markets - To build an ICT outsourcing research center - To build a training institute for improving the ICT human capacity building. The trainings that run for short, medium, and long terms - To gather the ICT business firms in this town and regulate them in an appropriate way	
Environmental impact	No negative impacts on environment	
Project personnel	**Name**	Munkhbat.A
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	Organization name	Information, Communication, and Post technology Authority
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	Fax	976-11-330780

Project 41. **Khar khorum - 13th century tourist complex**

Project life, location	- From 2010 to 2014 - In Khar Khorin soum, Uvurkhangai Province
Total investment	- Total Cost: USD 500.0 million - Prefeasibility study cost: USD 2.0 million - Building and construction cost: USD 350.0 million - Infrastructure cost: USD 148.0 million
Payback period	For 15 years
Project rationale	- To implement the Millennium Challenge Goals Based Comprehensive National Development Strategies: - Developing the tourism as it is one of the priority strategies for the developing economy - Establishing different types of large tourism camps in 4 economic regions
Project goal, demand	According to the statistics, 70 percent of tourists visit to Khar Khorin because tourists wish to experience the history of Mongolian Empire and Mongolian culture. However, there are many tourists are not so happy because they could not see what they had expected and wanted. In order to fully satisfy their expectations and to attract more tourists, there is an urgent need to build a modern, internationally qualified, impressive, and info-rich tourism camp in Khar Khorin. This will increase the number of tourists significantly.
Project's socio-economic benefit	- To begin using historical places in increasing the country profits from the tourism - To reduce the unemployment rate. According to the World Tourism Organization, 1 out of 7 people of world population works in service sector. The tourism industry creates the biggest employment in service industry.
Required infrastructure	- Khar-Khorin and Ulaanbaatar are connected by 358.0 km hard surface road - Connected to the main power line - Will build the international airport in Khar-Khorin soum - Has water recourse and possible to supply more fresh water from Orkhon river
Exploration history	- Prefeasibility study is done by the working group that consists of the Ministry of Infrastructure and Urban Development and Planning and Science Institute of Ulaanbaatar city. - The Ministry of Environment and Tourism is running animation competition of making design of Khar Khorim tourist camp. After winner is identified, the working group who will make the feasibility study will be announced.
Production capacity, technology	- To increase the capacity to receive up to 1.0 million tourists in Mongolia per year - To build international airport, internationally qualified hotels, residential areas, and required infrastructures - To build modern technology based museum and exhibitions

Environmental impact	Tourism camp is eco-friendly and has no major negative environmental impacts	
Project personnel	**Name**	Orgodol.Ts
	Job Title	Director, Tourism Department
	Organization name	Ministry of Environment and Tourism
	Telephone	976-51-264447, 976-99114233
	E-mail	
	Fax	976-11-318492
	Name	Erdenechimeg. B
	Job Title	Officer, Tourism Department
	Organization name	Ministry of Environment and Tourism
	Telephone	976-51-267545, 976-99020378
	E-mail	
	Fax	976-11- 452554

Project 42. **Students town**

Project life, location	- From 2010 to 2015 - In front of Buyant-Ukhaa district that is in left side of Chinggis Khaan International Airport, X-Khoroo, Khan-Uul District, Ulaanbaatar.
Total investment	- Total cost: USD 300.0 million - Engineering infrastructure: USD 45.0 million - Buildings and construction: USD 255.0 million
Payback period	For 6-12 years
Project rationale	- To implement the Millennium Challenge Goals Based Comprehensive National Development Strategies: to structure and support the locations and programs of the government and non-government colleges and universities. - To implement the Government four-year action plan: to restructure and re-plan the locations of colleges and universities - To implement Social and Economic Guidelines of 2009, to reduce over-centralization of Ulaanbaatar, and to renew the locations of colleges and universities and to rebuild them apart from the center of the capital
Project goal, demand	To build the 'Students Town' that consists of research, training, and study building complex, residents apartments, students dormitories, roads, green fields and parks, and some basic social service buildings with modern architecture design and engineering infrastructure.
Project's socio-economic benefit	- To create higher educational environment that allows to receive internationally qualified educational degrees in Mongolia - To reduce over-centralization of buildings, traffics, residents, and social services in center of Ulaanbaatar - To increase FDI and domestic investments in the construction and educational sector - To make the first major step to build internationally qualified students town in Mongolia
Required infrastructure	To build a water line, a heating system, a waste line, an electricity line, a phone line, a road, a green field, and some other fields. Total cost is USD 45.0 million
Exploration history	- The joint working group is established that consists of the Ministry of Road, Construction, and Urban Development, Ministry of Education, Culture, and Science, and Mayor of Ulaanbaatar city. - On 2 September 2008, the Minister of Road, Construction, and Urban Development and Mayor of Ulaanbaatar city affirmed the plan to build the Students town in Ulaanbaatar city. - Feasibility study is made by the City Development Center according to the order of Ministry of Road, Infrastructure and Urban Development - On 23 March 2008, the Mayor of Ulaanbaatar city passed decree □ 137 which states that the location of students' town is in Buyant-Ukhaa District and Khan-Uul District in Ulaanbaatar. - The feasibility study of the Students town is reviewed by the experts, and on 2 July 2009, the feasibility study was supported by the meeting of City Representatives.

	- According to the feasibility study, the land size of Students Town is 775 sq meters. However, land size needs to be about 3000 meter squire.	
Production capacity, technology	- Capacity of town is 20-25 thousand people and consists of: - Research, training, laboratory, study, sport, and lecture buildings with modern engineering infrastructure and design - Resident apartments and students dormitories - Green fields and parks - Social services buildings	
Environmental impact	- No major negative environmental impacts - Increase in the employment rate - Reduction in the air and ground pollution in surrounding districts of Ulaanbaatar - Reduction of over-centralization of Ulaanbaatar - Increased size of green field per resident of Ulaanbaatar - Reduction of air pollution in Ulaanbaatar city by building eco-friendly buildings and engineering infrastructures	
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