



Mongolian mineral products and issues of international trade

Reporter:

D.GALSANDORJ

**Prof., President of the Mongolian Exporters' Association,
Head of Mining department of Chinggis Khaan University,
Mongolia**

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One. Mongolian mineral products

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1.1. Current situation of the Mongolian mineral sector:

- Economic growth rate in 2011 - **17.3 percent**
- In 2011, the mining sector accounted for following position. Which of:
 - ✓ **20.2 percent** of GDP,
 - ✓ **69.8 percent** of industrial production,
 - ✓ **90.0 percent** of export earnings
 - ✓ **40 percent** of the state budget income
 - ✓ **over 60 thousand people** working in the mineral sector.

1.1. Current situation of the Mongolian mineral sector:

Table-1: Share of mining sector in GDP and industrial production

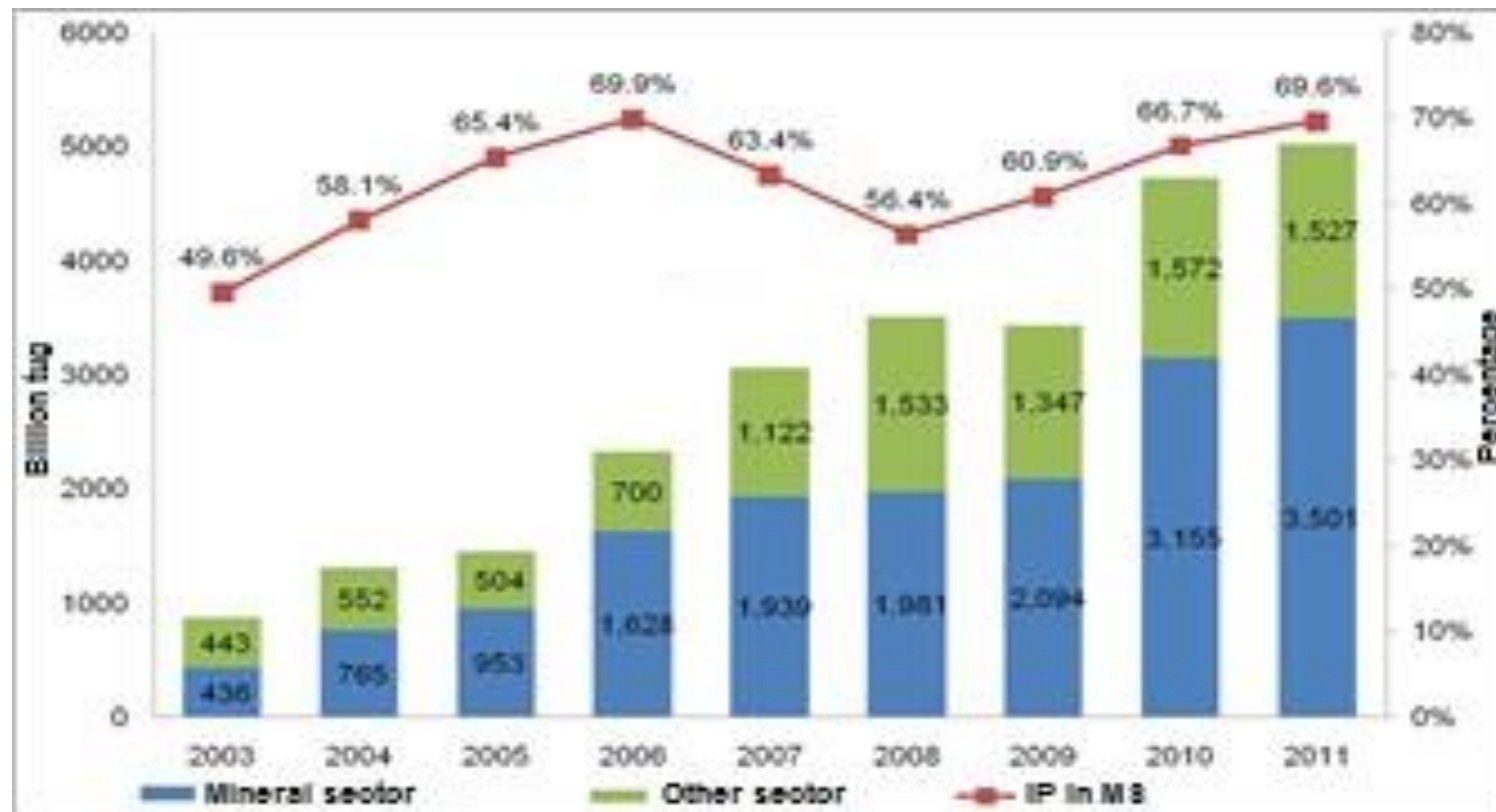
Indicator	Unit	2003	2005	2008	2009	2010	2011
GDP	Billion tugrik	1.480	2.780	6.556	6.591	8.415	10.830
Total industrial production	billiontugrik	879	1.457	3.514	3.442	4.727	5.028
Mining production	Billion tugrik	436	953	1.981	2.094	3.155	3.501
Percentage of mining and extractive industries in GDP	%	12.6	16.6	20.2	19.5	22.7	20.2
Percentage of mining production in industrial production	%	49.6	65.4	56.4	60.9	66.7	69.6

Share of mining sector in GDP and industrial production

Source: Mineral Resources Authority, 2012

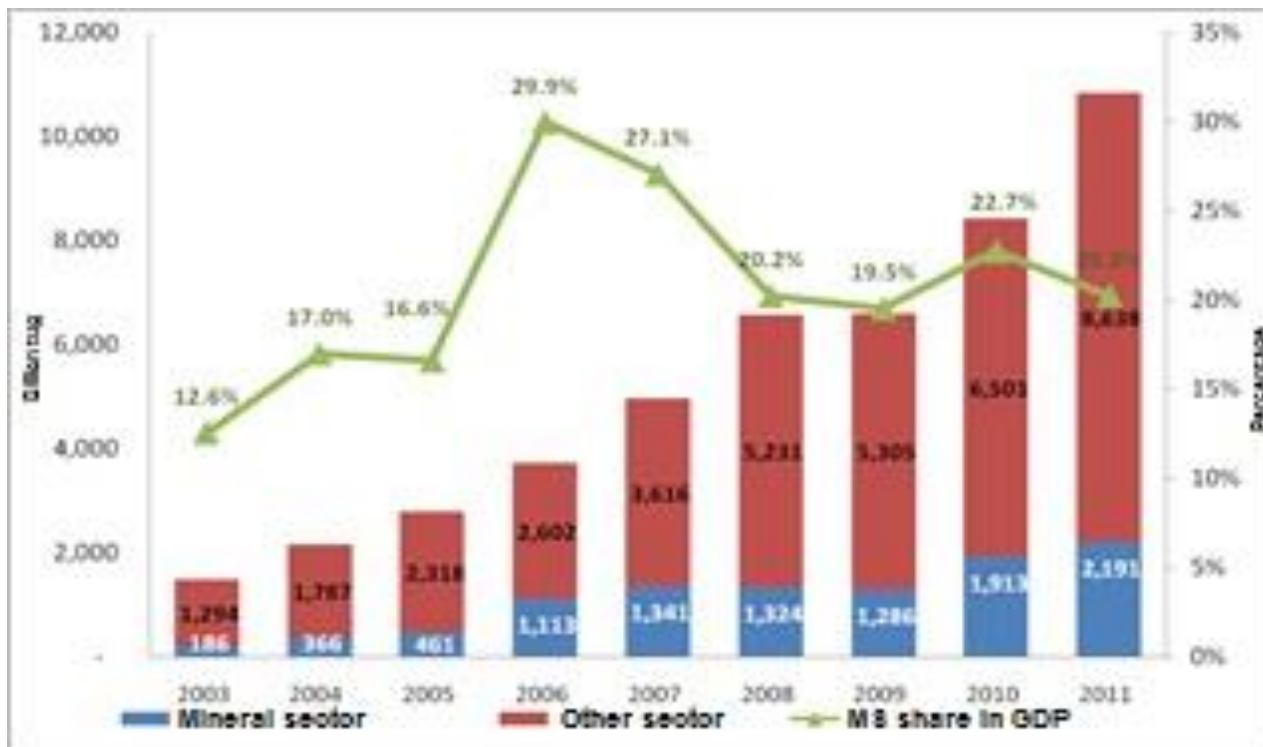
1.1. Current situation of the Mongolian mineral sector:

Figure-1: Share of mining sector in economy



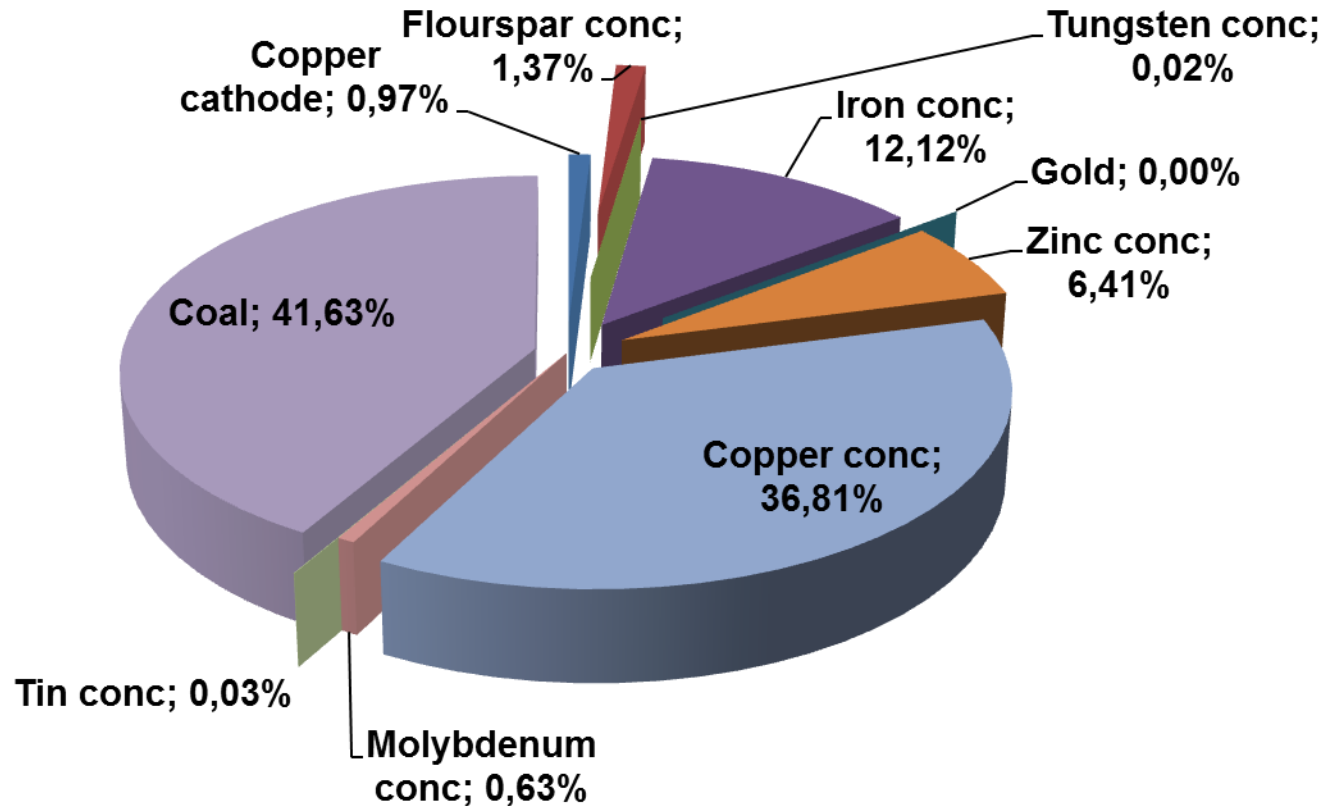
1.1. Current situation of the Mongolian mineral sector:

Figure-2: Share of mining sector in economy



1.1. Current situation of the Mongolian mineral sector:

Figure-3: Share of mineral products in export earnings

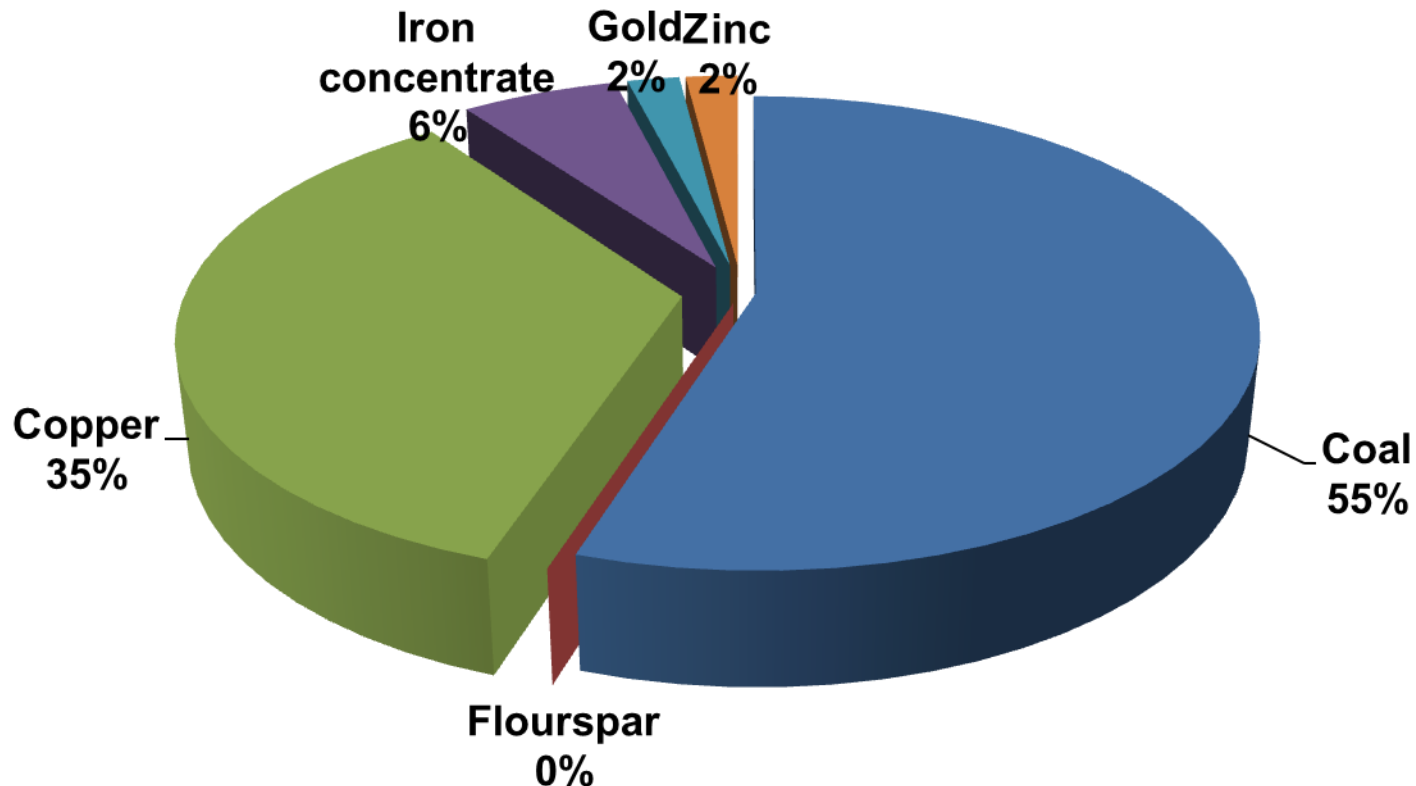


1.1. Current situation of the Mongolian mineral sector:

- The majority of export products are mineral products in Mongolia.
- The export earnings of mineral products consist from the following mineral products:
 - ✓ coal (41.6 percent),
 - ✓ copper concentrates (36.8 percent),
 - ✓ iron ore and concentrates (12.1 percent),
 - ✓ zinc concentrates(6.4 percent)and other products.

1.1. Current situation of the Mongolian mineral sector:

Figure-4: Tax income from mining sector



1.1. Current situation of the Mongolian mineral sector:

- The state tax income from the mining sector by mineral products are:
 - ✓ coal (55 percent);
 - ✓ copper and molybdenum concentrates (35 percent);
 - ✓ iron concentrates (6 percent);
- In other word, 96 percent of tax income from sector is coal, copper and iron concentrates.

1.2 Mongolian mineral reserves, its production

- In 2009, 14 mines have been commissioned, with 12 in 2010, and 19 in 2011.
- Around 8700 jobs have been created in these mines, with around 60 thousand workers in the mining sector.
- As of June 2012, Mongolia had proven reserves of 2402.4 tons of gold, 231.4 thousand tons of silver, 83.8 million tons of copper, 1046.6 million tons of iron ores, 18.5 million tons of coal reserves.
- World economy, in particular the speedy growth of economies in the Asian region has had a notable influence on Mongolia's main sector that of minerals market and production.

1.2 Mongolian mineral reserves, its production

Table-2: Mongolia's mineral reserves

No	Types of minerals	Unit	As of 2012.06.01
1	Placer gold	Tn	221.5
2	Gold /primary/	Tn	2180.9
3	Silver	Thousand tn	231.9
4	Copper	Mln tn	83.8
5	Molybdenum	Thousand tn.	963
6	Iron	Mln tn	1046.6
7	Tungsten	Thousand tn.	287.4
8	Tin	Thousand ton.	55.8
9	Uranium	Thousand tn.	90.0
10	Coal	Bln tn.	18.5
11	Fluorspar concentrates	Mln tn.	14.6

Source: Minerals Resources Authority, 2012

1.2 Mongolian mineral reserves, its production

Table-3: Production of Mongolian mineral sector

Type of product	Unit	2008	2009	2010	2011
Copper:					
-Copper concentrates	Thous.tn	525.3	533.0	522.0	514.0
-Converted into copper cathode	Thous.tn	127	130	127	122
Copper cathodes	Thous.tn	2.587	2.470	2.746	2.389
Molybdenum in concentrates	tn	1.784	2.409	2.009	1.957
Molybdenum oxide	tn	2.112	157		
Coal	Thous.tn	9.7	13.2	25.2	30.9
Iron ore	Thous.tn	1.387	1.379	3.203	5.678
Flotation fluorspar concentrates	Thous.tn	116	115	141	152
Metallurgical fluorspar concentrates	Thous.tn	219	344	542	251
Zinc concentrates	Thous.tn	144	157	113	105
Gold	tn	15.2	9.8	6.0	5.7
Tungsten concentrates	tn	141.9	38.6	19.9	163.4
Tin concentrates	tn	87.5	15.0	13.0	84.3

1.3 Mineral production, its international trade

Iron:

- As of 2012, mineral reserves of iron ore stand at 726.5 million tons while proven reserves are estimated at 438,2 million tons, 288,3 million tons are forecasted reserves.
- Annually Mongolia imports 400 thousand tons of iron products for construction industry.
- In 2010 3.2 million tons of iron ore and concentrates, in 2011 5.7 million tons and 4.2 million tons during the first eight months of 2012 have been exported. Iron ore and concentrates account for 12.1 percent of total export earnings.

1.3 Mineral production, its international trade

Iron:

- Processed iron concentrates not meeting international standards and for this reason, Mongolia's iron ore is sold at a lower price.
- During the past years, the increased production of cast iron and steel in Japan, South Korea, Russia and China has meant that the demand has also increased for iron ore and concentrates.
- Similarly for Mongolia, the rapid growth of production in construction and mining sector will result in potential growth for local iron products demand.
- Currently, preparation work is underway in Mongolia for the building high grade iron concentrates processing plant .
- Due to an absence of a mineral exchange for the sale of iron concentrates, the reserves of iron ore and production capacities have been utilized with little economic benefit.

1.3 Mineral production, its international trade

Coal:

- It is estimated that the total geological reserves of Mongolia's coal is 150 billion tons.
- Approximately, 20 billion tons of proven coal reserves which have been identified through initial as well as detailed exploration.
- In 2011, 31 million tons of coal have been produced, from which 7 million tones used for domestic consumption.
- 21 million tons of coal have been exported with export earnings of 2.2 billion US dollars.
- In the next 5-10 years, it is estimated that exports of coal will reach to 50-60 million tons.

1.3 Mineral production, its international trade

Coal:

- The possible negative impact deriving from coal sales means that local mines are selling in the Chinese market at prices much lower than international prices.
- There is a urgent need to resolve the issues related to improving export infrastructure and transit transportation to China, South Korea and Japan.
- Quality specifications and standards for coal need to be approved, increase value added coal products, and there is a pressing issue in increasing road or rail transshipping capacities and construct new railroads between TT and Mongolian-Chinese border.

1.3 Mineral production, its international trade

Fluorspar concentrates:

- Mongolia has proven reserves of over 20 million tons of fluorspar ores.
- In terms of fluorspar ore reserves and mining, the country ranks after China, Mexico and South Africa. Around 60 percent of world's total fluorspar exports derive from China while Mongolia exports over 10 percent.
- “Mongolrostsvetmet” LLC’s fluorspar Bor-Ondor and Urgun mine, former Mongolczechsmetal joint venture’s Chuluuttsagaan del mine, Berkh mine are mining and exporting fluorspar concentrates.
- State owned Mongolrostsvetmet LLC processing plant meets international standards in its fluorspar concentrates.

1.3 Mineral production, its international trade

Copper concentrates and refined copper

- Erdenet mine has reserves of 4.0 million tons of refined copper while Oyutolgoi mine has reserves of 30.0 million tons.
- Erdenet mine exported 519 thousand tons of copper concentrates in 2011 and achieved earnings of 911.6 million US dollars while accounting for 36.8 percent of total mineral export products earnings.
- Mongolian-American-Russian joint venture Erdmin produced 2.5 thousand tonnes of copper cathodes, exporting 2.0 thousand tons, producing 0.5 thousand tons of copper rod and wires and supplying to the domestic market.
- The construction work for the “Erdmin-II” plant has began and its completion means that the country’s refined copper production from dump leaching is expected to be increased by four-fold.

1.3 Mineral production, its international trade

Copper concentrates and refined copper

- There are risks associated with the change in copper prices on the world market hence fluctuating state revenue and foreign currency incomes deriving from sales of copper concentrates.
- The creation of a mineral products exchange means that standards will be set, the number of potential customers will be increased, in particular there will be less contracts with trading companies, having advantages for increasing export earnings from direct contracts with producers and end users.

Two. Challenges in mineral production export trade

- Trading of mineral products are conducted independently by producers thereby resulting in lack of information flow between seller and buyer and high costs are associated with activities for identifying potential partners.
- Due to an inconsistency of information for companies interested in purchasing Mongolian mineral products, the country's mineral products are not traded in line with market principles reducing the value of local mineral products.
- Trading of mineral products are conducted based solely on the agreement made between a trader and a buyer, and based on these agreements any taxes and payments are deducted according to relevant laws and regulations resulting a relatively closed minerals prices and export planning and difficulty in carrying out necessary monitoring.

Two. Challenges in mineral production export trade

- Trading instruments should be applied aimed at preventing from economic risks related to the decrease in the market price of main contributors to state budget such as copper, coal, gold and iron ore.
- In an event when the income generated from the mining sector decreases drastically, there is a tendency for driving a negative effect on local market prices, foreign currency, Government's income, and foreign currency reserves and with the fall in demand in goods and products, production will also decrease.
- Aside from “Darkhan Metallurgical Plant”, “Repair Mechanical Plant of Erdenet city”. “Erdmin” and “Khukh Gan” companies, currently the metallurgical industry in Mongolia has not much developed.
- The main areas of concern include developing standards of existing mining companies technology and machinery, increase valued added products, process proven mineral reserves with limited waste and to use environmentally-friendly technology.

Three Opportunities for establishing the mining products' exchange in Mongolia

- In order to overcome the existing challenges in the mining sector, a more sophisticated mineral products' trading function is needed.
- Through learning from the experience of other countries, through the creation of “Mineral products' exchange”, major issues facing market economies are being tackled.

Three Opportunities for establishing the mining products' exchange in Mongolia

- Mineral products traded on the Exchange must need to meet the following requirements:
 - ✓ Sufficient reserves;
 - ✓ Have active traders and users;
 - ✓ The product should be of quality and available for standardization;
 - ✓ Have continual production, warehouse and logistical chain;
- In the case of Mongolia, the country has enough mineral product reserves with main buyers in proximity such as China, South Korea and Japan.

Four. International experience of mineral commodity exchanges

- 4.1. Creation and development of a mineral products' exchanges**
- 4.2. Possibility of setting up Mineral products exchange in Mongolia**
- 4.3. Establishing a minerals exchange: Benefits to the mining sector**

4.2. Possibility of setting up Mineral products exchange in Mongolia

Type of mineral product	Currently produced products	Content	Current production	New value added products	Quality requirement of buyers' states
1. Iron	- Iron products		50.0 thous.tn	✓ Iron products	80-95%
	- Iron ore	40-55%	1.6 mln.tn	✓ DRI products	
	- Iron concentrate	62-65%	4.0 mln.tn	✓ Cast iron	
				✓ Iron list	
				✓ Steel gauges	
				✓ Steel pipe	
				✓ Spare parts for machinery	
2. Coal	Total, of which:		30.9 mln.tn	✓ Electrical energy	
	- Brown coal			✓ Coking coal	
	- Coking coal			✓ Concentrated coal	
	- Washed coal			✓ Semicoke	
				✓ Coke	
				✓ Goal gas	
				✓ Liquid fuel	
3. Fluorspar	- Fluorspar ore	30-40%	500thous.tn	✓ High grade flotation concentrate	95-97%
	- Fluorspar concentrate		403 thous.tn	✓ Fluoride	
	✓ Flotation grade	95-97%	152 thous.tn	✓ Kerolite	
	✓ Metallurgical grade	75, 85%	251 thous.tn	✓ Alumina	
				✓ Glass	
				✓ Refrigerant	
4. Copper	✓ Ore	0.5-1.2%	26 mln.tn	✓ Melted	99%
	✓ Concentrate	24-30%	550 thous.tn	✓ Pure copper	99.99%
	✓ Refined copper	99.99%	2.4 thous.tn	✓ Copper wire	
				✓ Copper pipes	
				✓ Copper tubes	
				✓ Copper coil	
				✓ Copper products	

4.2. Possibility of setting up Mineral products exchange in Mongolia

	Exchange activities	Recommendations
1	Purpose and principle	The key areas to focus on for Mongolia include production of value-added products and transparency in the trade of mineral products at world market prices. The exchange should be independent, open and transparent.
2	Types of services	The following services shall be provided by the exchange: <ul style="list-style-type: none">- Up-to-date market information;- Determining spot and future prices;- Establish hedging services in order to reduce risk of price fluctuations;- Issue quality certifications;- Draft and finalize trading contracts;- Provide warehousing, transportation and laboratory accreditation;- Run professional courses, to learn from local and international practices;
3	Ownership status	The exchange shall have the following ownership status: <ul style="list-style-type: none">- Joint stock company- Privately owned company- Public-private JV company It is proposed for the mineral exchange in Mongolia to be established with government, non-government and private sector interests.

4.2. Possibility of setting up Mineral products exchange in Mongolia

4	Management and organizational chart	The government entity in charge of mining sector shall establish the mineral exchange, with the Financial Regulatory Committee acting in a regulatory capacity.
5	Government role	The exchange shall act in an intermediary capacity in accordance with the rules of market supply and demand. Government role in the development of the exchange will be in the capacity of legislative, creating efficient export infrastructure and training of specialists.
6	Membership	Types of membership: <ul style="list-style-type: none"> ▪ Brokers with right to carry out trade and payment issues ▪ Brokers with right to carry out payment issues ▪ Assistant broker with right to carry out only trade
7	Types of trade	Trading on the exchange shall be through auction and e-commerce and shall comprise of the following types of trade: <ul style="list-style-type: none"> ▪ Physical trade of products; ▪ Forward contract trade; ▪ Option contract trade.
8	Products to be traded	In the first instance, coal, iron and fluorspar will be traded on the exchange. During the second phase, copper, molybdenum and zinc can be traded once such products reach necessary standards.
9	Participants at the exchange, and requirements	Participants at the exchange shall comprise of broker, logistical companies, commercial banks, warehousing and laboratory operators.
10	Initial source of income	The exchange shall have the following sources of initial income. <ul style="list-style-type: none"> ▪ Rent for seat on the exchange; ▪ Membership fee ▪ Fee for services provided to participants of exchange; ▪ Other sources of income.

4.3. Establishing a minerals exchange: Benefits to the mining sector

Macroeconomic effects:

- Increase in non-cash payment flow
- Increase in monetary circulation
- Improvement in tax regulation
- Increase in domestic production
- Increase in number of jobs
- Logistics will be more centralized, insurance market will develop

Effects for producers, suppliers and purchasers:

- Improvement in product quality and standardization
- Product will be traded at market prices
- Able to control price risks
- Increase in income for producers and exchange participants
- Insured transportation

CONCLUSION:

1. The most beneficial way for Mongolia to trade coal, iron, fluorspar and other mineral products on the mineral exchange is through the development of value added products.
2. Through processing value added products from coal, such as metallurgical coking coal, liquid fuel which meet international standards, and through reducing the unit cost of transportation, it will be possible to compete in Asian and European markets.
3. Through producing value added metallurgical coking coal of the Tavantolgoi coal mine, the trade of the value added products will be many times higher than current prices.

CONCLUSION:

4. In case where Tavantolgoi coal is exported to Japan via Vanino and Vostochnaya ports in Russia, it is estimated that a loss of over 40 USD per ton will be incurred.
5. In order to sustainably increase coal and iron concentrates exports, the railway between TT and Nariinsukhait'also Tavantolgoi and Sainshand should be developed in the near future and to improve transshipping capacities through Zamyn-Uud border point.
6. The Government should provide favourable environment for value added product producers in terms of taxes and business environments. Agreements should be signed with neighbouring countries, including China for railway transshipment of mineral products.

**Thanks for your
kind attention**