

Project Description

The Government of Mongolia (GOM) is proposing to develop the copper smelting and refining plant project with a capacity of 1 million tons per year.

The Project implementation timeline is expected to be compliant with OT's requirement to supply of copper concentrate from the Oyu Tolgoi (OT) Project by middle -2023.

OT is located in the Khanbogd sum of Umnugobi aimag in the South Gobi region of Mongolia approximately 600 km south of Ulaanbaatar. The Plant will be location near the Oyu Tolgoi mine

GOM adopted a resolution No:88 "Acceleration of the construction work for a copper concentrate smelting plant project" it was decided to set up a plant in Khanbogd sum of Umnugobi aimag near the Oyu Tolgoi copper mine project and Government will own at least 10 percent free charge of total shares of project invest cost.

1. The Government will support and provide the following: According to the investment agreement of Oyu Tolgoi project, the draft article 3.21 will provide continuously with copper concentrate to the future copper concentrate smelting plant;

2. Providing of a land for the construction of the copper smelting plant;

3. Providing of a water supply to the planned construction of the surface water supply system of Kherlen project;

4. Providing of an electricity from the substation CES of Mongolia build for Oyu Tolgoi mine for a distance 8 km.

Benefits for the investor

- Exemption from income tax during the first 8 years of operation;
- Exemption of customs duties and VAT on imported goods at the period of building copper smelting plant
- By signing an Investment Contract between the State and the Investor, stability is acquired on: Incentives, Taxation and qualifying conditions of the service contract: GOM is now seeking to select, through a competitive selection process, experienced international partners to develop, finance, construct and operate the Project.

Bidders must visit the work site and ascertain for themselves the site conditions, location, surroundings, climate, availability of power, water and other utilities for construction, access to site, handling and storage of materials, weather data, applicable laws and regulations, and any other matter considered relevant by them before submission of bid.

For this purpose, bidders shall communicate to project unit \PU\ via notice/ e-mail indicating their intention to visit the site along with the intended date of visit and the details of their visiting representatives at least 3 (three) days before their intended visit. Project unit shall communicate its response to the interested bidders who are planning to visit the work site at the earliest approving the date of visit or may specify another date as it may consider suitable.

Mongolia has been becoming as the biggest player of the world market through the mineral resource and the product of copper concentrate outputs of Oyu Tolgoi mine. It becomes possible to develop a large integrated metallurgical complex.

- The purpose of the Project is to develop a copper concentrate smelting plants with capacity 1 million ton per year by the state and private sectors partnership, based on resources of copper-gold deposits Oyu Tolgoi mine
- Cooper concentrate I for the Project is expected to be procured from the OT mine. OT is among the biggest copper gold deposits in the world with the total resources of approximately 45 million ton copper and 1838 ton gold of JORS – compliant reserves as of 01 July 2009 and entered the resource to the general resource registration.

GENERAL INFORMATION ABOUT PROJECT

1. Technology parameters

Since 2029 when Oyu Tolgoi underground mine will be put into operation it will be possible to export 2 million tons of copper concentrate per year and in the metal it will be 450 thousand tons pure cathode copper, 12 tons gold, 120 tons silver

The project plant will process one million tons of copper concentrate per year and will produce final products of 257,200 tons of cathode copper 5880 kg of gold and 57000 kg of silver and 988,000 tons of sulfuric acid. The Production of cathode copper will provide a domestic production of new types of copper products \ electrical parts , automobile radiators, copper chip, electronic products, etc.\ and create market values and will lead to a diversification of the economic structure and ensure high GDP growth.

Limited consumption of sulfuric acid in the domestic market is forced to export all sulfuric acid in the initial period. In the future, as the development of uranium and other oxidized copper projects will consume a significant amount of sulfuric acid. China's annual imports of sulfuric acid is 12 million tons and the plant is located of the China border 100 km Therefore, it is possible to supply sulfuric acid to the Chinese consumer.

Erdenet and Ovoot railway in this direct will be built by concession and after the launch of this line it will be possible to develop the Burehan phosphorite deposit and the production of phosphorite fertilizer will use sulfuric acid. In future the need for sulfuric acid will be increasing in internal Mongolia.

2. Financial indicator

According to the resolution of the Government, the project is working to implement the unit does the preparation ie land clearance and preliminary feasibility study and assessment of the environmental impact and the issue of the water supply of the project

According to preliminary is an investment about 1.9-2.3 billion dollars USA. The revenue after operation 1,99 billion dollars USA per year, Tax after the operation 46 million dollars USA per year, Profit after Tax is 139 million dollar USA , and IRR of project is 14% , the period of return investment is 10-13 year . The required place of employees are 1080 peoples.

Financing: The Investor will be responsible for providing equity and/or attracting debt financing and share investment for the Project.

3. Indicative Structure of the Project

Particularly in the southern regions with limited water supply, groundwater is one of the main sources of water in the country-generally held in aquifers between 50&400 m below the ground surface. GOM should support and implement a project for the creation in South Gobi a surface water system by regulating surface water within the frame of the World Bank initiated project Orkhon Gobi and Kherlen Gobi for the reliable water supply of Southern regains mining and industrial project.

GOM plans to build 267 km of railway from Tavantolgoi coke coal mine to Gashuun Sukhait border which shall cross in near proximity 25 km to Oyu Tolgoi mine on the right site. Not far from the crossroads of railway will be build future copper smelting plant. This copper smelting plants location there is the most favorable conditions for transportation and logistics and given the possibilities to freely transport the copper production and sulfuric acid to China's market to deliver to Chinese customers.

4. Technical Overview

The copper concentrate smelting and refining plant is expected to be based on the technology of pyro-metallurgical processes. The copper smelting technology must be included following process scheme: It will also cover recent innovations applied in many operational units such as ore preparation, smelting, converting, pyro-refining, electrolysis, SO₂ off-gas treatment, acid preparation, waste heat utilization, dust treatment and precious metals recovery /refining gold and silver/

This classic technology is completed with modern dust, gas and water treatment systems which accord to world and European standards, sulfuric acid must be disposed of or provided with an end-use implementation system.

Environmental and social requirements to fully comply with local regulations, Equator Principles 3 and other relevant internationally recognized standards. The most important initial data are:

- a. Copper concentrate production capacity : 1000000 tone per annual
- b. Composition of concentrate of the OT deposits:

Element	Cu	Fe	S	SiO ₂	Ai ₂ O ₃	CaO	As	Pb	Zn	Mo	Au	Ag	Pd	Pt
Unit	%	%	%	%	%	%	%	%	%	%	g\ t	g\ t	g\ t	g\ t
Content	28,9	26,9	29,9	9,0	2,0	0,1	0.10	0,02	0,05	0,05	6	60	nd	nd

Element	F	Bu	Cd	Hg	Sb	Se	Te	K	Mg	Na	Ti
Unit	ppm	ppm	ppm	Ppm	Ppm	Ppm	Ppm	%	%	%	%
content	600	10	8	3	400	300	25	0,25	0,08	0,03	0,07

5. Key Project Parties

The Government of Mongolia

The Project implementation unit was set up in October 2016, under the Ministry of mining and heavy industry, based on GOM resolution #107 dated 28th September 2016, to lead the implementation of the Project.

A steering committee has been set up for the Project ("working group"), by the order of Minister of mining and heavy industry, as the decision-making authority for the selection of investors. The working group consists of 8 members representing Ministry of mining and heavy industry, Ministry of finance, national development department.

Other GOM-related entities involved in the Project are Development Bank of Mongolia and Ministry of Nature, Environment and Green Development Oyu Tolgoi

Oyu tolgoi mine

OT is the world's largest copper-gold mine under development. The mine is owned and operated by Oyu Tolgoi LLC ("OT LLC") and OT LLC in turn is owned 66% by Turquoise Hill Resources Ltd ("Turquoise Hill") and 34% by Erdenes Oyu Tolgoi LLC ("Erdenes OT"), a wholly-owned subsidiary of the Government of Mongolia. Rio Tinto Group ("RT") owns approximately 51% of Turquoise Hill.

Managed by RT, OT directly benefits from RT's extensive experience of developing and operating large scale mining and processing facilities. OT will rely on a combination of open pit and underground operations, with ore processed through a 100 000 ton per day concentrator. Construction at the Oyu Tolgoi site started in April 2010, and, as of June 2013, the open pit mine, the copper concentrator complex, two underground shafts were completed and OT is ready for full commercial production. OT started to export first concentrate in the second half of 2013.

In parallel with the commencement of production from the open pit mine, the development of the underground mine will continue. Average annual production over the 2021-2028 period is estimated at 460koz of gold and 600,000 tons of copper in concentrate, or approximately 3% of 2011 global refined copper production.

The mine has an expected life of more than 40 years based on proven and probable reserves.

OT is the largest single investment in Mongolian history and is expected to more than double the size of the Mongolian mining sector by 2020.

OT is working in cooperation with the Project implementation unit for the successful development of the Project consistent with the OT Investment Agreement without limiting any rights and obligations under the OT Investment Agreement. GOM will guarantee as according to the investment agreement of Oyu Tolgoi, by the article 3.21 will provide continuously with copper concentrate to the future copper smelting plant.

¹ Source: <https://www.riotinto.com/copperanddiamonds/oyu-tolgoi-4025.aspx>