



Mining and metallurgical complex

Construction of hydrometallurgical plant for cathode copper production

Project description:

The Project considers the construction of copper ore processing industrial plant which will be targeted towards cathode copper production with a capacity of 5000 tonnes per year.

Product: cathode copper (pure copper of no less than 99,99%).

Capacity: 5000 tonnes of cathode copper per year.

Production process:

extraction – open-pit;

processing – flotation and heap leaching, and SX-EW.

Initiator: AK Minerals LLP – the owner of the exclusive copper processing right at Ai.

Location: East-Kazakhstan Oblast. The Plant will be located in Urjar District, 40 km. away from Ayagoz town, and relatively close to the Ai-Karaaul deposit.

Potential markets: Kazakhstan, Russia and China.

Market conditions:

Large copper reserves. Kazakhstan holds the 6th place in the world for its copper reserves of 36,6 million tonnes, which accounts for 4,7% of global reserves.

High demand. It is expected that refined copper demand will have a constant growth for the following years because copper is the major factor in economic activity and modern technological society. The expected demand growth for the refined copper will reach 2.99% in 2019 and 2.15% in 2020.

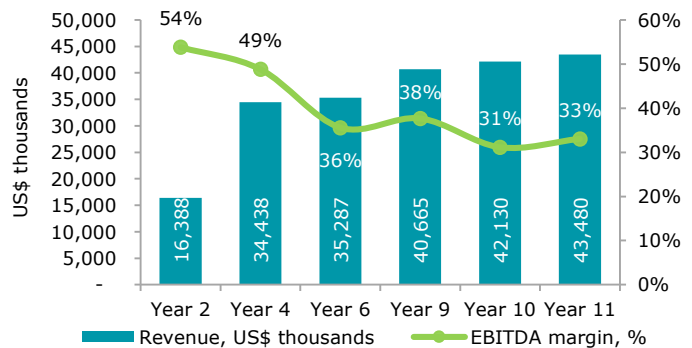
Price growth. Global market prices for refined copper demonstrate increasing dynamics related to increased demand for that product as a result of global economic stabilization. According to the forecasts, a moderate increase in copper prices is expected during the following years: 2020 – US\$ 6680, 2021 – US\$ 6711 per tonne.

Export potential. The trade deficit in products such as copper sheets, strips and tapes indicates the import substitution potential. Also, Kazakhstan has an opportunity to increase its exports to China and neighbor countries.

Key investment indicators of the Project

Indicator	Results
Project implementation period, years	11
<i>Incl. Investment stage, years</i>	<i>1</i>
<i>Operational stage, years</i>	<i>10</i>
Investment, US\$ thousands	28,545
Project NPV, US\$ thousands	25,702
IRR, %	42,9%
EBITDA returns, %	38,6%
Payback period, years	4.2
Discounted payback period, years	4.7

Project profitability



Project location: East-Kazakhstan Oblast



Ai-Karaaul deposit reserves (The Minutes of SCR of RK 2016-19- from 29.01.2019)

Indicator	Open-pit mining		Underground mining
	Oxide ore	Sulphide ores	Sulphide ores
Copper, thousand tonnes	17.78	23.48	12.7
Copper content, %	1.47	1.89	1.43
Silver, tonnes	-	-	5.3
Content, g/tonne	-	-	5.93