

Extraction and processing of nickel-cobalt ore deposit Bogetkol

Project Description

This investment project provides for the extraction and processing of nickel-cobalt ores from the Bugetkol deposit in the Aktobe region (the "Project").

Project goals:

- Development of the resource base of Sary Arka Mining Company LLP, creation of an effective integrated business for the extraction and processing of cobalt/nickel ores and the sale of final products in the domestic market and abroad;
- obtaining high-quality, export-oriented, competitive products through rational and effective field development using advanced proven technologies.

Project Initiator

Mining company "Sary Arka" LLP

Production

- Nickel concentrate;
- Cobalt concentrate.

Annual production capacity:

Nickel – from 4,508 to 9,125 tons, Cobalt – from 281 to 580 tons.

Key Investment indicators

Indicators	Results
Investment amount, thous. USD	574,743
Project NPV, thous. USD	384,347
IRR, %	35.5%
EBITDA margin, %	58-61%
Payback period, years	4.2
Discounted payback period, years	4.9

Project location:

Aytekebi district, Aktobe region



Market prerequisites:

Rising prices for nickel and cobalt. According to forecasts by Bloomberg analysts, the average nickel price in 2019 will increase by 27% and amount to US\$ 13,550 per ton, and for the period 2019 – 2022, the average annual price will increase yearly by 9% and rise to US\$ 15,900 per ton by 2027.

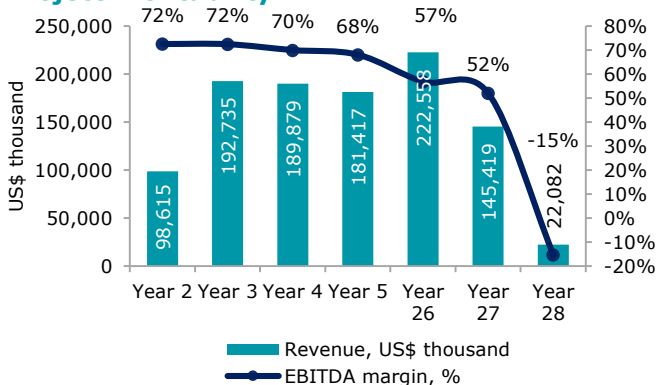
Export potential. The country's domestic demand for cobalt and nickel is low, so it is possible to cover it with excess. nickel-cobalt ore reserves in Kazakhstan allow the export of this mineral in significant quantities to China, South Korea, Russia, Japan and Ukraine. China is the main importer of nickel, nickel concentrates, cobalt ores and cobalt concentrates.

In-situ recovery (ISR) method of mining with sulphurous acid leaching:

The extracted productive solution (which contain nickel and cobalt ores) then goes to the processing plant. Received productive solution further goes through the following stages:

- Nickel/cobalt extraction from pregnant solutions by ion exchange;
- Eluate neutralization;
- Nickel/cobalt sulphate purification and recovery;
- Tailings neutralisation, storage and evaporation.

Project Profitability



Field Reserves

Category	mln tons	%Ni	%Co	Ni, thous. tons	Co, thous. tons
Inside Tenement					
Indicated	36.01	0.68	0.037	243,366	13,221
Inferred	1.76	0.68	0.039	11,986	682
Outside Tenement					
Indicated	1.11	0.71	0.041	7,855	454
Inferred	0.39	0.55	0.045	2,140	173
Total					
Indicated	37.12	0.68	0.037	251,221	13,675
Inferred	2.15	0.66	0.040	14,126	855