

# Mining and metallurgical complex

## Extraction and processing of cobalt-nickel ore deposit Shevchenkovo

### Project Description

Extraction and processing of cobalt-nickel ores from Shevchenkovo deposit

### Project Initiator

"KazCobalt" LLP, subsoil user of the deposit JSC Qazgeology

### Production

Ferronickel

### Reserves

according to 2005 estimates from Bateman Minerals and Metals Ltd., Shevchenkovo deposit reserves amount to 104.4 million tonnes of ore, containing on average 0.79% of nickel and 0.045% of cobalt.

### Project location:

50 km to the south west of Zhetikara, Kostanay Oblast

### Potential consumer markets

Kazakhstan, China

### Market prerequisites:

**Rising prices for metals** – According to the forecasts of S&P and Capital IQ, prices for nickel will rise by 23.9%, from US\$ 12,985 per tonne in 2018 to US\$ 16,094 per tonne in 2022. Prices for cobalt will rise by 1.6% from US\$ 82,695 per tonne in 2018 to US\$ 84,018 per tonne in 2022.

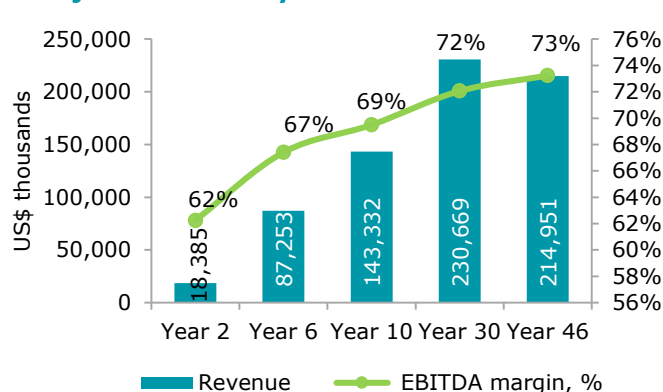
**Rising demand for metals** – Development of industries (e.g. production of electronic devices, medical equipment and electric vehicles), that use nickel batteries, will provide long-term demand for the metal. According to WMBS, in 2017, the deficit of refined nickel on the world market amounted to around 96 thousand tonnes. According to Palisade and Macquarie, demand for cobalt will rise by 5.1% annually within the next 5 years.

**Export potential**– In 2015, China consumed 65% of total world produced cobalt and nickel products. With the rapidly developing market of electronic devices and electric vehicles, China's reserves of cobalt and nickel are depleting.

### Key Investment indicators

Indicator	Results
Project implementation period, years	46
<i>incl. investment stage, years</i>	1
<i>operational stage, years</i>	45
Amount invested, US\$ thousands	250,000
Project NPV, US\$ thousands	175,989
IRR, %	19.3%
Rate of return in terms of EBITDA, %	71%
Payback period, years	7.5
Discounted payback period, years	11.7

### Project Profitability



### Project location:

Kostanay Oblast, 50 kms to the South-West from the town of Zhetikara



### Ore field description

Explored reserves of C1 and C2 categories

Indicator	Amount, tonnes
Ore	104.4 million
<i>Proven</i>	21.4 million
<i>Possible</i>	83 million
Nickel	825 thousand (0.79%)
Cobalt	47 thousand (0.0455%)

- Ore extraction on Shevchenkovo can be carried out through an open pit mining, since the depth of ore deposits reaches 40m.
- Extraction of nickel and cobalt by hydrometallurgical and electric smelting methods amounts to 90-95% for nickel and 85-90% for cobalt.