Mining and processing complex

Development of the Akmaya tungsten deposit in Karaganda Oblast

Project Description

This project provides for the development of the Akmaya tungsten deposit and the construction of a processing complex for tungsten ores. The project is being implemented under the management of Resources Capital Group LLP (RCG).

Product and production:

- Mining method - **open-pit mining.**
- Strip ratio **- 4.8 t/t**
- **Specific gravity of ore: 2.64 t/m³.**
- Processing Method (preliminary) - combined **(gravity + flotation + smelting).**
- Planned production capacity:
  - **1.0 million tons** of ore per year;
  - **2 140 tons** of WO3 per year;
  - **2 600 tons** of 65% WO3 concentrate per year;
  - **345 tons** of Ferrotungsten per year.
- Life of mine – **12** years.

Key investment indicators

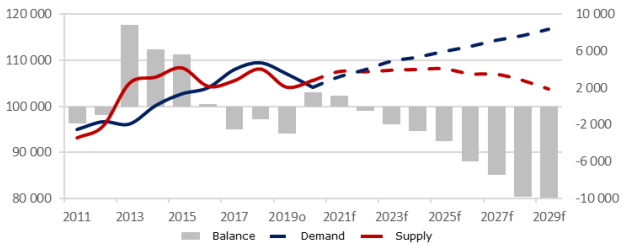
Indicator	Result
Total investment required, US$ '000	25 912
Equity investment required, US$ '000	7 774
Project NPV, US$ '000	41 565
IRR, %	52,1%
EBITDA Margin, %	55,8%
Discounted payback period, years	6,5

Project location: Shetskiy district, Karaganda Oblast

Market prerequisites

- In Y2022 the tungsten demand would be 100,7 thsd. ton that is lower then in previous years. Demand will be supported by excising production capacities and recycling. Starting from Y2023 one forecasts the demand growth at 1% p.a. and further exposure to deficit even though the new projects launches.

Tungsten supply-demand equilibrium: 2011-2029F, (t W)



- This trend is driven by a positive long-term outlook for the market balance and optimism for economic recovery and demand growth, resolution of issues between China and the United States, as well as the expected shortage of supply of tungsten in the market by Y2029.
- The APT prices have been steadily rising, even in the context of the COVID-19 pandemic, with an increase of 20% in Y2021 with the outlook for further growth.
- Although China is the dominant player with 82% share of global production, the market for concentrate producers is diversified and trade flows are multidirectional.

Works completed

- ✓ 4 verification wells were drilled to confirm reserves with further laboratory tests;
- ✓ Created geological database and ore body framework model, block model, reserves estimation on inferred category (author report);
- ✓ Optimization of open pit mining was completed.

Reserves of Akmaya deposit*

Parameter	Cate-gory	Ore, '000 t	WO3, %	WO3, t
Resources, 1952.*	$B+C_1+C_2$	4 198	0,28	11 600
RCG estimation on 1952 data	Infered	11 147	0,25	27 607

** Protocol of State Committee №7437 dated 29 May 1952*

Cooperation

- Long-term off-take contract
- Financaing of plant construction and launch