

Baotou 500,000 T/Y Water Slag & 500,000 T/Y Steel Slag Solid Waste Resource Utilization Project

Industrial solid-waste recycling into low-carbon cementitious materials and metal concentrates

Total Investment RMB 285.0 million Feasibility study base case	Annual Processing Capacity 1,000,000 tons per year 500,000 t/y water slag + 500,000 t/y steel slag	Enterprise Value (Base, with subsidies) RMB 1,354.784 million Perpetual growth method
Shareholder Equity Value (Base, with subsidies) RMB 1,144.784 million After deducting RMB 210 million net debt	Shareholder Equity Value (Base, without subsidies) RMB 1,066.023 million Prudent case for bank reference	Shareholder Equity Value (Downside) RMB 695.849 million Stress scenario with no subsidies and lower prices

Project Overview

The project is located in the Industrial Park of Kundulun District, Baotou, Inner Mongolia, and is developed by Inner Mongolia Huajun Xiyuan Circular Industry Co., Ltd. It plans to process 500,000 tons per year of blast furnace water slag and 500,000 tons per year of steel slag, totaling 1 million tons per year of steel solid waste. The core process involves DC RF dielectric separation to produce all-solid-waste alkali-activated low-carbon cementitious materials, rare earth concentrate, other valuable metal concentrates, and iron concentrate. The project also generates revenue from steel slag treatment services and water slag line iron scrap recovery. The scope of construction includes a 1-year construction period followed by 4 years of operation, with a total project investment of RMB 285.0 million. The project is currently at the pre-construction stage, with pilot verification and equipment joint development still required for the DC RF dielectric separation technology. The valuation date is treated as the starting point of the construction period, and the proposed financing amount is RMB 210 million.

Technology & Competitive Edge

- Core process uses DC RF dielectric separation to recover metals and produce low-carbon cementitious materials.
- Products include all-solid-waste alkali-activated cementitious materials, rare earth concentrate, other valuable metal concentrates, and iron concentrate.
- Technology is at pilot verification and equipment joint development stage, requiring scale-up validation.

- Product diversification across cementitious materials, iron concentrate, and treatment services reduces revenue concentration.
- Policy subsidies are assumed in the base case but not independently documented, adding uncertainty to the edge.

Market & Business Model

- Revenue streams: sales of cementitious materials, iron concentrate, rare earth and other metal concentrates, plus steel slag treatment fees and iron scrap recovery.
- Full production year revenue mainly comes from cementitious materials, iron concentrate, and solid waste treatment income.
- The project benefits from policy subsidies under the feasibility study, but the cashing conditions and sustainability are not independently verified.
- Downside scenario assumes cementitious price -10%, iron concentrate -15%, treatment fee -10%, and no subsidies.
- Proposed financing of RMB 210 million is lower than full production year operating cash flow and cumulative free cash flow.

Scope of Works & Project Status

- Construction of a 1 million t/y solid waste processing facility including water slag and steel slag lines.
- Project includes a 1-year construction period and 4 years of operation forecast, totaling 5 calculation periods.
- Total project investment is RMB 285.0 million; maintenance investment is RMB 10 million per year in years 2-5.
- Current status: pre-construction; pilot verification, raw material supply, sales orders, and environmental/land procedures need completion.
- Valuation date is the start of construction; net debt approximated by proposed financing of RMB 210 million.

Key Financials

Total Investment	RMB 285.0 million
Enterprise Value (Base, with subsidies)	RMB 1,354.784 million
Shareholder Equity Value (Base, with subsidies)	RMB 1,144.784 million
Shareholder Equity Value (Base, without subsidies)	RMB 1,066.023 million
Shareholder Equity Value (Downside)	RMB 695.849 million
Exit Multiple Equity Value Range	RMB 513.032 million to RMB 576.582 million
Debt Service Coverage Ratio (comprehensive)	2.77
Interest Coverage Ratio (comprehensive)	26.81
WACC	11.5%

Investment Highlights

- Operating cash flow increases year by year under feasibility study, with full production year revenue diversified across products.
- Proposed financing of RMB 210 million is below full production year operating cash flow and cumulative free cash flow.
- Comprehensive debt service coverage ratio of 2.77 and interest coverage ratio of 26.81 indicate strong debt capacity.
- Project retains positive equity value even under downside stress, demonstrating resilience.

Key Risks

- Policy subsidies are not independently documented; their nature, cashing conditions, and sustainability are uncertain.
- DC RF dielectric separation technology requires pilot verification and equipment joint development before scale-up.
- Terminal value accounts for approximately 88.0% of enterprise value, indicating high sensitivity to long-term assumptions.

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