2 Million Tons/Year Coal Gangue Solid Waste Resource Utilization Project

Waste to Wealth • Turning Stone into Gold

Total Investment **RMB 1.281 billion** Including RMB 89.14 million basic reserve funds	Annual Processing Capacity **2 million tons** Coal gangue solid waste	Full Production Annual Revenue **RMB 1.244 billion** At 100% capacity
Full Production Annual Net Profit **RMB 598.70 million** Net margin 48.7%	After-tax IRR **43.35%** Benchmark 7.5%	After-tax Static Payback Period **3.17 years** Including 1-year construction period

Project Overview

Located in the New Industrial Park of Tumed Right Banner, Baotou, Inner Mongolia, this project processes 2 million tons of coal gangue annually to produce high-value new materials. The facility covers 172.33 mu with 66,648 m² building area, including five production workshops for physical field mineral separation, kaolin, clean coal, mineral soil conditioner, and iron-titanium oxides. Total investment is RMB 1.281 billion, with a 12-month construction period. The project is positioned as a benchmark for comprehensive utilization of bulk industrial solid waste, supported by local 'Zero-Waste City' policies and national circular economy initiatives. It aims to transform industrial waste into high-end materials such as mullite, kaolin, and soil conditioners, leveraging proprietary technologies and cost advantages. The project is currently seeking bank financing of RMB 855.848 million, with enterprise self-financed capital of RMB 425 million already arranged.

Technology & Competitive Edge

- Five patented technologies enable full-component separation, converting coal gangue into high-value materials.
- Physical field mineral separation, supercritical thermal cracking, ultrasonic grinding, blackbody infrared drying, and silicon-based nano gel.
- DCS full-process automation control ensures high efficiency and product consistency.
- Process yields kaolin, mullite, flint clay, soil conditioner, clean coal, and building aggregate.
- Technological moat supports high gross margin and price gap from waste to high-end materials.

Market & Business Model

- Seven-product matrix targets refractory, ceramics, agriculture, and construction markets.
- High value-added new materials (mullite, kaolin) account for 87% of product mix.
- Near-zero raw material cost: coal gangue purchased at RMB 20/ton, annual cost only RMB 4 million.
- Located in Hohhot-Baotou-Ordos golden triangle with abundant coal gangue supply and transport hub.
- Revenue model based on selling high-value products, with full production revenue of RMB 1.244 billion.

Scope of Works & Project Status

- Construction of five modern production workshops and supporting facilities on 172.33 mu land.
- Total building area of 66,648 m², including physical separation, kaolin, clean coal, soil conditioner, and iron-titanium oxide lines.
- Project located in a 42.3 km² over-10-billion-level industrial park with mature infrastructure.
- Construction period of 12 months; enterprise self-financed capital of RMB 425 million (33.18%) already arranged.
- Seeking bank loan of RMB 855.848 million (66.82%) for equipment procurement and construction.

Key Financials

Total Investment	**RMB 1.281 billion**
Full Production Annual Revenue	**RMB 1.244 billion**
Full Production Annual Net Profit	**RMB 598.70 million**
After-tax FIRR	**43.35%**
After-tax FNPV	**RMB 1,331.3391 million**
Return on Investment (ROI)	**63.89%**
Return on Equity (ROE)	**140.86%**
Break-even Point	**16.78% capacity utilization**
After-tax Static Payback Period	**3.17 years**

Investment Highlights

- Policy dividend: aligns with national circular economy and dual carbon goals, encouraged by industrial catalogue.
- Resource monopoly: backed by Daqingshan coal-rich area, near-zero raw material cost and stable supply.
- Technology-driven: five patented technologies enable high-value utilization and high gross margin moat.
- Strong financials: IRR 43.35%, payback 3.17 years, DSCR 2.60, and LTV only 13.45%.

Key Risks

- Market price risk: product price is most sensitive factor; a 59% drop would reach break-even.
- Technology and capacity risk: scaling up to 2 million tons/year may face process stability challenges.
- Raw material supply risk: annual demand of 2 million tons; potential supply concentration or transportation disruption.

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