Early Warning System

IFC-50739

Boston Metal Bra

Quick Facts

Countries	Brazil
Specific Location	Coronel Xavier Chaves, Sao Joao del Rei
Financial Institutions	International Finance Corporation (IFC)
Status	Proposed
Bank Risk Rating	B
Voting Date	2025-07-30
Borrower	Boston Electrometallurgical Corporation Brasil Ltda
Sectors	Climate and Environment, Industry and Trade, Mining
Investment Type(s)	Loan
Investment Amount (USD)	$ 50.00 million
Loan Amount (USD)	$ 50.00 million
Project Cost (USD)	$ 217.00 million

Project Description

As stated by the IFC, Boston Metal was founded in 2012 as a spinout from the Massachusetts Institute of Technology. The company patented the Molten Oxide Electrolysis (MOE), an electrochemical process that uses direct electric current and an anode to separate chemical compounds into their constituent parts. In 2022, BM established a subsidiary named Boston Electrometallurgical Corporation Brasil Ltda (“BMB”) in Minas Gerais, Brazil to recover high-value metals from by-products of mining and metallurgical operations that do not currently have an economically viable processing alternative due to the low concentration of the minerals of interest.

BMB is developing its project in three phases: pilot (Phase 0), industrial phase 1 (Phase I) and industrial phase 2 (Phase II). Facilities are in the municipality of Coronel Xavier Chaves, 3.5km from the urban center and 14km away from Sao Joao del Rei. In 2023, IFC invested in BM to further develop the MOE technology platform and expand operations in the United States and Brazil. Based on IFC’s supervision to date, the company’s environmental and social (E&S) performance has been satisfactory.

IFC is considering a C Loan of US$50 million to finance industrial Phases I and II (“the Project”). The Project requires up to US$100 million in debt financing, and IFC is mobilizing the remaining balance of US$50 million in parallel loans. Upon the completion of industrial Phase II, BMB will have the capacity to produce over 11,000 tons per year of high value metals, including ferro tin (FeSn), ferro tantalum niobium (FeTaNb), ferro tantalum (FeTa) and ferro niobium (FeNb).

Phase I will include one electric furnace 3MVA and one electrolytic cell of 60kA (MOE) for processing approximately 7000 tons of metallurgical slag annually; Phase II will add one additional electric furnace 18MVA and four 300kA electrolytic cells (MOE) that will increase processing capacity to over 81 000 tons of slag per year. Charcoal will be used to produce part of the energy needed for the electric furnace and limestone will be used as a fluxing agent to remove impurities in the process. Processed steel scrap will be added to adjust the Fe content in both FeNb and FeTa alloys, ensuring the desired composition. Two transmission lines will connect the new facility to the national power electrical grid, located approximately 1.3km from the site. The project will use slag, a byproduct of mining and metallurgical processes primary composed of metal oxides and silica and up to %5 of naturally occurring radionuclides, namely Uranium and Thorium. After MOE processing, sludge (that is, the slag remaining from the MOE process) will still contain valuable oxides such as Zirconium and Rare Earth Metals that could be recovered in the future once appropriate technology becomes available. Phase I is currently under construction and operations are expected to start in the second semester of 2025. Operations of Phase II are anticipated to commence in 2026. In the production process, the slag will be dried before being fed into an electric arc furnace for melting and where FeSn ferroalloy will be produced. The molten slag will be then transferred to an electrolysis cell to produce ferroalloys such as ferro tantalum niobium (FeTaNb), ferro tantalum (FeTa) and ferro niobium (FeNb). After MOE electrolysis, the sludge will be solidified, dried, and sent back to the slag owner. Recovered ferroalloys can be poured into ingots or other forms and temporarily stored for shipment to customers.

Investment Description

- International Finance Corporation (IFC)

As stated by the IFC, the estimated total cost of the Project is US$217 million. Of this amount, lenders are expected to contribute US$100 million, while the remaining funds will be sourced from equity and generated cash flow.

IFC is considering a C-Loan of US$50 million with a 10-year term and a 2-year grace period to support BMB's Project. Moreover, IFC is mobilizing additional US$50 million in parallel loans.

Private Actors Description

As stated by the IFC, the Company’s Sponsor is Boston Electrometallurgical Corporation, founded in 2012 in Woburn, Massachusetts, USA. Boston Metal boasts Tier 1 investors, including Microsoft, Aramco, BMW, Breakthrough Energy Ventures, Vale, BHP, and IFC.

Private Actor 1	Private Actor 1 Role	Private Actor 1 Sector	Relation	Private Actor 2	Private Actor 2 Role	Private Actor 2 Sector
BHP Billiton Ltd	Investor	Mining	invests in	Boston Metal	Parent Company	Mining
BMW Group	Investor	Industry and Trade	invests in	Boston Metal	Parent Company	Mining
Boston Metal	Parent Company	Mining	owns	Boston Electrometallurgical Corporation Brasil Ltda	Client	Mining
Breakthrough Energy Ventures LLC	Investor	Finance	invests in	Boston Metal	Parent Company	Mining
Microsoft Corporation	Investor	Communications	invests in	Boston Metal	Parent Company	Mining
Saudi Aramco	Investor	Energy	invests in	Boston Metal	Parent Company	Mining
Vale SA	Investor	Mining	invests in	Boston Metal	Parent Company	Mining

Contact Information

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ACCESS TO INFORMATION

You can submit a request for information disclosure at: https://disclosures.ifc.org/#/inquiries

If you believe that your request for information from IFC has been unreasonably denied, or that this Policy has been interpreted incorrectly, you can submit a complaint at the link above to IFC's Access to Information Policy Advisor, who reports directly to IFC's Executive Vice President.

ACCOUNTABILITY MECHANISM OF IFC/MIGA

The Compliance Advisor Ombudsman (CAO) is the independent complaint mechanism and fact-finding body for people who believe they are likely to be, or have been, adversely affected by an IFC or MIGA- financed project. If you submit a complaint to the CAO, they may assist you in resolving a dispute with the company and/or investigate to assess whether the IFC is following its own policies and procedures for preventing harm to people or the environment. If you want to submit a complaint electronically, you can email the CAO at CAO@worldbankgroup.org You can learn more about the CAO and how to file a complaint at http://www.cao-ombudsman.org

Bank Documents

- Environmental and Social Review Summary
- Impacts on Air Quality – Atmospheric Dispersion Study (EDA)

Other Related Projects

- IFC-47774 Boston Metal