

**ASX ANNOUNCEMENT**  
**13 December 2023**

## **CHINA BATTERY GRADE MANGANESE SULPHATE PLANT LOCATION SELECTED AND AGREEMENT SIGNED**

### **HIGHLIGHTS**

- **Preferred location for battery grade manganese sulphate plant secured** and will be situated in the Jinshi High Tech Industries Development Zone, Jinshi, Hunan province, China
- Agreement with Jinshi local government covers land allocation, tax incentive structures and land rebates. Land agreement also covers options for future plant expansions
- **Hunan is central to China's growing Lithium-ion battery industry and is a dominant LFP cathode production region, with significant plans for LMFP (Lithium Manganese Iron Phosphate) conversion**
- Current China-based battery grade manganese sulphate Pre-Feasibility Study (PFS) to be based on Hunan plant location. **PFS progressing as planned and expected to be announced in Q1 2024**
- Advanced and commercialised crystallisation technology secured, **providing a key operation and cost advantage for Firebird**
- Proven 5<sup>th</sup> generation technology - **already in operation at other China-based plants - enables significant energy cost reductions for MnSO<sub>4</sub> production**
- R&D facility including the pilot plant remains on schedule with all key material ordered. **Expected to be operation in Jan 2024**
- R&D plant to be located in nearby Jinshi City. The Jinshi High-Tech Chemical Park has connecting river access to the Yangzte river, which provides very efficient and low-cost transportation routes for raw materials and product



***Image 1: Pilot plant land agreement signing with Jinshi local government***

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Advanced manganese developer **Firebird Metals Limited (ASX: FRB, "Firebird" or "the Company")** is pleased to announce the delivery of another major milestone for its LMFP Battery Strategy, through the completion of an agreement for industrial land with Jinshi local government for the Company's battery grade manganese sulphate plant. The agreement covers land allocation, tax incentive structures, land rebates for the plant and options for future plant expansions.

**Commenting on the signing of the land agreement in China, Firebird Managing Director Peter Allen said,** *"We are extremely pleased to be making rapid progress on our LMFP battery strategy, as we remain well on schedule with our strategic objective of growing into a near-term producer of high-purity manganese sulphate for the battery market."*

*"The completion of the land agreement and establishment of a pilot plant in the Jinshi area brings substantial value to the Company, as we gain access and exposure to some of the world's largest EV battery manufacturers and investors in LMFP batteries. The location of our battery grade manganese sulphate plant in Hunan also places Firebird at the epicentre of manganese sulphate demand in China."*

*"We expect our R&D and pilot plant to be operational by Q1 2024 and once complete, we will look to commence key pre-qualification activities with cathode producers. Importantly, our on-the-ground activities will be managed and led by an experienced in-country team headed by Mr Zhou, COO of our Chinese subsidiary, Hunan Firebird Battery Technology Co Ltd."*

*"We look forward to sharing updates on further strategic milestones, including the results of the manganese sulphate PFS expected in Q1 next year."*

Firebird considered various facets of the LMFP battery strategy and visited several sites when determining the right location for the sulphate plant. Key factors for site location included availability of sulphuric acid, steam, key reagents, and proximity to customers, transportation routes and factory residue consumers.

Hunan is a leading battery metals region, a major Chinese hub for existing and planned cathode and cell capacity and provides Firebird with direct access to rapidly growing gigafactory development. Due to these key competitive advantages, along with the key location criteria mentioned above being met, the Company selected the land available within the Hunan region as the location for its sulphate plant.

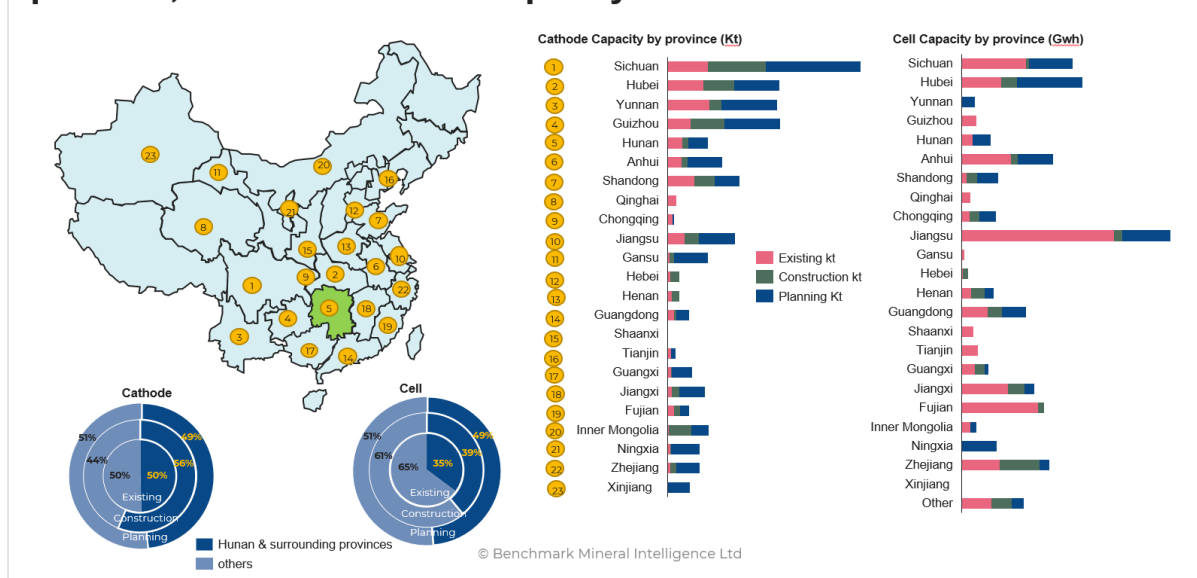


**Image 2 and 3:** Firebird's industrial land for its Sulphate Plant at Jinshi Chemical Park

Jinshi City is situated in the north of Hunan Province and located approximately 237km from Changsha the capital of Hunan.

Jinshi City has a population of 280,000 people and provides direct access to a significant land and water transportation network. The Jinshi High-Tech Chemical Park is situated in the Li Shui River and is a key city in the Yangtze River economic zone's growth plan. Currently there are 126 large scale industrial enterprises within the Jinshi High-Tech Industries Development zone.

## Hunan and surrounding provinces are a hub for existing, and planned, cathode and cell capacity



**Image 4:** Benchmark Minerals Intelligence Overview on Hunan Province as a Battery Metals Hub

The design layout of the R&D facility is complete and all specialised equipment has been ordered. Firebird expects the R&D facility to be operational in January 2024.

The R&D plant will be located in Jinshi City and in close proximity to Jinshi High Tech Industries Development Zone, which has connecting river access to the Yangzte river, which provides very efficient and low-cost transportation routes for raw materials and product.

Initially, the pilot plant within the R&D facility will produce samples for  $MnSO_4$  &  $Mn_3O_4$  for potential customers and PFS work. Plans to complete testing on several other potential manganese rich PCAM materials is underway and expected to be produced soon after. The R&D plant costs are on time and budget.

**This announce has been approved for release by the Board.**

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## About Firebird Metals Limited

Firebird Metals is a manganese developer focused on its advanced, 100% owned project portfolio, located in the renowned East Pilbara manganese province of Western Australia. The portfolio boasts a total Resource of 234Mt, with exciting exploration and development growth upside.

The Company's flagship Oakover Project holds a Mineral Resource Estimate<sup>1</sup> of 176.7Mt at 10% Mn, with 105.8Mt in an Indicated category. A Scoping Study completed by Firebird at Oakover highlighted the outstanding long-term potential of the Project as a manganese operation. This potential was further strengthened through production of >99.8% purity manganese sulphate monohydrate crystal, which confirmed Oakover manganese ore can be processed into battery grade HPMSM.

The Company's other key Projects are Hill 616 and Wandanya which provide Firebird with compelling growth opportunities.

Hill 616 contains an Inferred Mineral Resource<sup>2</sup> of 57.5Mt @ 12.2% Mn and shares similar geological traits to Oakover. Wandanya is a high-grade exploration opportunity, with Direct Shipping Ore potential.

Importance of manganese within EV's, due to its cost reduction abilities without reducing energy density and range, along with growing demand for battery grade manganese sulphate, highlights the critical need for projects like Oakover to become operational mines. With a limited number of advanced ASX manganese developers, Firebird is in a strong position to develop Oakover and supply a high-quality product into a growing and supply-constrained market.

The Company is committed to generating sustainable long-term value and growth for stakeholders, through the implementation of best practice exploration methods while prioritising the well-being, health and environmental protection of its employees and communities it operates in.

## JORC Compliance Statement

This announcement contains references to Exploration Results and Mineral Resource Estimates, which have been extracted from previous ASX announcements as referenced. For full details of Exploration Results and Mineral Resource Estimates in this release that have been previously announced, refer to those announcements.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the said announcements, and in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed.

<sup>1</sup> For full details refer ASX announcements dated 10/3/2022 and 23/3/2023

<sup>2</sup> For full details refer ASX announcement dated 1/12/2021