

ASX ANNOUNCEMENT 5<sup>th</sup> June 2024

# SUNWARD TO CO-FUND FIREBIRD'S ENERGY-SAVING CALCINING TECHNOLOGY, FIREBIRD TO EARN 5% FUTURE SALES ROYALTY

# HIGHLIGHTS

- Development agreement signed with Zhongji Sunward Technology Co, Ltd ("Sunward"), a leading producer of rotary tunnel kilns used in many chemical plants across China
- Innovative Design: Firebird has designed a patent-pending calcining unit which reduces energy usage by 80%, significantly further enhancing the cost-efficiency of the Company's proposed Battery Grade High-Purity (MnSO4) Plant, to be located in Jinshi, Hunan Province, China
- Wider Applications and Royalties: The new calcining unit has broad industrial applications. Sunward has agreed to pay Firebird a 5% royalty on future sales revenue and the Company retains the right to collaborate with other manufacturers
- **Pilot Plant Co-Funding:** Sunward will fund 50% of the cost of a pilot plant which has a total cost estimate of US\$200,000 and is responsible for the detailed engineering design and manufacturing of the pilot plant
- **Project Timeline:** The pilot plant is expected to be completed in 2 months and data collected from testing will be used to inform the current project design
- Continued Innovation: Firebird continues to focus on delivering energy efficiency improvements through its proprietary technologies. The Energy-Saving Calcining Technology and 5th Generation Crystallization Technology further strengthens the Company's compelling opportunity to rapidly develop into a low-cost producer of highpurity manganese sulphate

**Firebird Managing Director Mr Peter Allen commented:** "This agreement with Sunward, which is a leading engineering and research design company in China, is further validation of the excellent and sector leading work that our team in China are executing. Further, Sunward is a great example of the high-quality calibre of the partners we are attracting in China, as we progress the development of our proposed battery grade manganese plant in China.

"The agreement with Sunward is a great way for us to determine the commercial viability of the energy recycling system that we have developed and If the technology works on a commercial scale, it could lead to significant operating cost reductions in our manganese sulphate plant.

*"I would like to thank our growing team in China, who continue to develop innovative processes to ensure we move further down the cost curve from the competitive numbers outlined in our Feasibility Study, as we work towards near-term production of high-purity manganese."* 



**Manganese developer Firebird Metals Limited (ASX: FRB, "Firebird" or "the Company")** is pleased to announce its subsidiary Hunan Firebird Battery Technologies Co Ltd (HFBT) has entered into an agreement with Zhongji Sunward Technology Co, Ltd (Sunward), a leading engineering and large-scale comprehensive design research company in China.

The agreement will see Sunward co-fund and evaluate commercialising HFBT's unique energy saving rotary kiln system (patent pending). If proven commercially viable, Sunward will pay a royalty of 5% to Firebird for every kiln sold that utilises HFBT's unique energy saving rotary system.

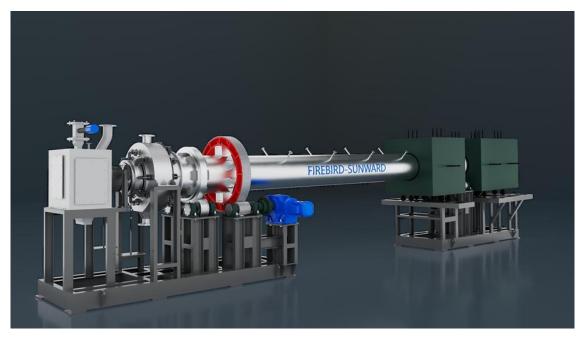


Image 1: Detailed 3D Design of Firebird's Rotary Kiln

## ZHONGJI SUNWARD TECHNOLOGY CO, LTD AGREEMENT

Firebird has signed an agreement with Sunward granting the rights to use HFBT's unique energy recycling calcining system (patent pending) in Sunward kilns.

The first step in the agreement with Sunward involves the assessment and confirmation on the viability of the kiln's energy recycling system, by constructing a 1/15<sup>th</sup> scale pilot plant for the energy recycling calcining unit.

Sunward has committed to funding 50% of costs for a scaled pilot plant, which is estimated to be approximately US\$100k, Firebird will fund the remaining 50%, Sunward is responsible for the detailed engineering design and manufacturing of the pilot plant.

Upon successful completion of the pilot plant trial and confirmation of the viability of the energy recycling system, HFBT will receive a 5% royalty on the revenue from all calciners sold by Sunward that incorporates the energy recycling system.



#### ABOUT ZHONGJI SUNWARD TECHNOLOGY CO, LTD

**Zhongji Sunward Technology Co, Ltd** is a Joint Venture between Changsha Nonferrous Metallurgical Design & Research Institute Co and Sunward Intelligent Equipment Company Ltd. Changsha Nonferrous Metallurgical Design & Research Institute Co is a subsidiary of Aluminium Corporation of China Ltd (Chinalco).

Zhongji Sunward Technology primary business is the research, development, design and manufacture of high-tech equipment and its control automation for the process support of non-ferrous metal beneficiation and smelting industry.

Sunward Intelligent Equipment Co., Ltd. manufactures and sells construction and engineering machineries worldwide. The company offers engineering equipment, such as excavating machinery, underground engineering equipment, rock drilling equipment, hoisting machinery, loading machinery, aerial work platform, mobile and fixed crushing and screening equipment, shield machinery, and mining trucks.

Sunward Intelligent Equipment Group is listed on the Shenzhen Stock Exchange with a market capitalisation of ~7.44B Chinese yuan, annual revenue of 7.11B Chinese yuan and ~1,500 employees.

This announce has been approved for release by the Board.

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### **About Firebird Metals Limited**

Firebird Firebird Metals is an advanced manganese developer focused on combining mining and downstream processing with a dedication to the advancement of the EV battery sector.

The Company is currently progressing its unique China-focused Lithium Manganese Iron Phosphate (LMFP) battery strategy, which will develop Firebird into a near-term producer of high-purity, battery-grade manganese sulphate, a key cathode material in LMFP batteries for electric vehicles.

Execution of this strategy will place Firebird at the forefront of manganese sulphate production, at a time when the use and demand for manganese in batteries continues to rapidly grow. Due to the low number of ASX-manganese developers and increasing use of LMFP by car manufacturers, Firebird is in a strong position to benefit from this growing market and deliver significant value to its shareholder base.

The Company also owns 100% of its project portfolio, located in the renowned East Pilbara manganese province of Western Australia, which boasts a total Resource of 234Mt, with exciting exploration and development growth upside. The portfolio is led by the flagship Oakover Project, which holds a Mineral Resource Estimate<sup>1</sup> of 176.7 Mt at 10% Mn, with 105.8 Mt @ in an Indicated category.

The Company's other key Projects are Hill 616 and Wandanya which provide Firebird with compelling growth opportunities. Hill 616 contains an Inferred Mineral Resource2 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.

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