

EXCLUSIVE COLLABORATION SECURED WITH PROFESSOR OU & PROFESSOR MING FROM CENTRAL SOUTH UNIVERSITY TO DEVELOP LMFP CATHODE MATERIAL

HIGHLIGHTS

- Firebird has entered into a binding strategic collaboration agreement with Central South University (CSU) in Changsha, Hunan. The primary focus of the collaboration is to develop a processing method to produce lithium manganese iron phosphate (LMFP) as a cathode active material (CAM).
- Firebird benefits from a substantial cost advantage in LMFP production by bypassing the manganese sulphate crystallisation process. This streamlined approach not only reduces costs but also results in a higher-quality LMFP product, strengthening Firebird's position in the market.
- CSU has strong reputation for producing world leading battery materials processes. CSU staff include global experts in the Li-ion battery supply chain, with alumni including the founders of BYD and Rongbay Technology.
- The collaboration will be led by two industry leaders, Professor Xing Ou and Professor Lei Ming, who bring significant industry and LMFP research and development (R&D) experience. Professor Ou and Professor Ming hold over 90 Chinese invention patents and are supported by a large number of PhD and Masters students.
- The collaboration combines the significant LMFP cathode experience of CSU with Firebird's expertise in battery grade manganese sulphate production, aiming to enhance LMFP cathode technology and accelerate commercialisation.
- CSU and Firebird will develop a unique process which will commence with lab-scale testing, while planning a Scoping Study for a commercial pilot plant to produce next-gen cathode materials.
- This collaboration aims to position Firebird as a global leader in the evolving Li-ion battery market, addressing the growing demand for cost-effective, high-performance and energy storage solutions.
- Early-stage testwork will be completed at Firebird's R&D centre in Jinshi, with initial results are expected in Q1 2025. Firebird will own all testwork results and patents within China and internationally.

Firebird Managing Director Mr Peter Allen commented: *"Just over 12 months ago we set out our vision to become a leading, low-cost manganese sulphate producer, who supplies high-quality battery cathode products direct to the market. We have delivered a strong year of progress in China and*

continue to work tirelessly to position Firebird as a leader in the evolving lithium-ion battery market and generate significant value for all our stakeholders.

"The binding strategic collaboration agreement with Central South University is another strong step forward in delivering on our vision and ultimate goal of developing cost-effective processing method for lithium manganese iron phosphate cathode materials. This collaboration will place Firebird in a very strong technical position and fits perfectly into our LMFP strategy. Importantly, this collaboration has only been possible due to the strength of the Company's in-country team and the relationships and networks we have developed in China.

"The team is very excited to be able to work with Professors Ou and Ming, who bring leading and extensive experience when it comes to developing low-cost and efficient battery cathode processes. The reputation of CSU and its professors in the field of battery materials is unmatched. Teamwork is the key ingredient to any long-term success and value generation of a company, and we are proud to have a standout team who are dedicated to delivering on our vision."

Firebird Metals Limited (ASX: FRB, Firebird or the Company) is pleased to announce that the Company has entered into a binding strategic collaboration agreement with Central South University (**CSU**) of Hunan.

The focus of the collaboration is to develop a process for producing LMFP as a cathode active material (**CAM**), from the Company's proposed battery grade manganese sulphate plant, which will be located in Jinshi, Hunan Province, China.

CSU brings a strong reputation for being a global leader when it comes to producing battery materials processes. CSU has already made advanced progress in the development of the LMFP process and is excited to enter the collaboration agreement, to take the work completed to date to finalisation with Firebird.

Professors Ou and Ming bring extensive industry experience, having worked on numerous globally significant projects, including serving as the Chief Technical Officer (**CTO**) for LFP development between 2010 and 2014. More recently, they played a key role in establishing and listing Pa Wa Gu Fen (Stock Code 688184, POWER), a Shenzhen-listed company focused on ternary-based cathodes.

Strategic Advantage Integrating MnSO₄ into LMFP Cathode Production

The Company's long-term strategy has been to gradually expand into LMFP cathode materials through innovation and technological advancements. Firebird aims to secure a natural cost advantage in LMFP cathode production, particularly by integrating manganese sulphate (MnSO₄) from its proposed production plant in China. One of the largest operational costs in MnSO₄ production is crystallisation, even with Firebird's patented 5th Generation Crystallisation technology, this process remains a significant expense.

In LMFP production, plants typically purchase crystallised MnSO₄ and then dissolve it back into solution for further processing. This results in energy waste from the crystallisation process. Firebird's innovation eliminates this inefficiency, giving it a critical cost advantage in LMFP cathode production.

Additionally, Firebird's technology is easily transferable to locations outside of China, positioning the Company as a global leader in LMFP cathode manufacturing.

Why LMFP Is the Future of Li-Ion Batteries

There is strong evidence that Li-ion batteries are shifting toward greater use of manganese, with LMFP batteries poised to capture a significant portion of this growing demand.

In recent years, lithium iron phosphate (**LFP**) cathodes have surpassed nickel-based ternary batteries, now representing 70% of the Chinese market & increasing its dominance, largely due to its cost-effectiveness and safety.

Through advanced battery pack management technologies like blade technology, LFP batteries can deliver significant range. However, Firebird believes that LFP has reached its theoretical energy density limit, which constrains its use in colder climates and longer-range applications. Adding manganese to LFP cathodes to make LMFP cathodes can increase energy density by 10-20%, and provide better performance in colder environments without compromising LFP's cost or safety advantages.

Industry insights and conference participation by Firebird over the past 12 months clearly show that many large companies are heavily investing in LMFP technology, for example CATL, BYD, Gotion High-Tech, Dynanonic, Ronbay, CALB and EVE. LMFP is already being used in two-wheelers and in combination with ternary cathode in electric vehicles such as CATL's M3P. LMFP sole use in electric vehicles is progressing well, although certification in the electric vehicle segment generally takes longer.

Next Steps - Lab Testing, Internal Scoping Study, and Commercial-Sized Pilot Plant

Firebird plans to begin lab testing soon, with specialist equipment already being ordered. Results will lead into an internal scoping study, laying the groundwork for a pilot plant capable of producing approximately one metric tonne per day of LMFP.

The CSU professors and their team have already established a strong foundation in the LMFP production process. Lab testing with Firebird's Chinese technical team will refine this process, which will differ from mainstream production methods. Firebird plans to patent aspects of the process both in China and internationally.

Key Terms of the Agreement

Under the terms of the collaboration agreement with CSU, an unrelated party of the Company, the Company will make a total payment of RMB850,000 (approximately A\$188,000) in instalments over a 15 month period to CSU. Firebird will own all testwork results and patents within China and internationally. Other terms are standard for this type of agreement.

This announcement has been approved for release by the Board.

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About Firebird Metals Limited

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 has a project portfolio located in the renowned East Pilbara manganese province of Western Australia, which boasts a total Resource of 234Mt^{1,2}, with exciting exploration and development growth upside. The portfolio is led by the flagship Oakover Project, which holds a Mineral Resource Estimate¹ of 176.7 Mt at 9.9% Mn, with 105.8 Mt at 10.1% Mn in an Indicated category.

The Company's other key Project is Hill 616 which provide Firebird with compelling growth opportunities. Hill 616 contains an Inferred Mineral Resource² of 57.5Mt at 12.2% Mn and shares similar geological traits to Oakover.

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 Mineral Resource Estimates, which have been reported in compliance with Listing Rule 5.8 and extracted from previous ASX announcements as referenced.

The Company confirms that it is not aware of any new information or data that materially affects the information previously reported and that all material assumptions and technical parameters underpinning the Mineral Resource Estimates continue to apply and have not materially changed.

¹ See ASX announcement dated 23 March 2023: Indicated Resource of 105.8Mt at 10.1%; Inferred Resource of 70.9Mt at 9.6% for global Resource of 176.7 Mt at 9.9% Mn.

² See ASX announcement dated 1 December 2021: Inferred Resource of 57.5 Mt at 12.2% Mn.