

SEPTEMBER 2024 QUARTERLY ACTIVITIES REPORT

HIGHLIGHTS

CHINESE LMFP BATTERY STRATEGY

- **All three critical permits - Safety, Environmental and Energy - received for operation of the Company's high-purity, battery grade manganese sulphate (MnSO_4) plant, to be located in Jinshi, Hunan Province, China**
- **Successful delivery of pilot scale calcining kiln to Hunan Firebird Battery Technologies Plant**
- **Subsequent to quarter end, Firebird subsidiary Hunan Firebird Battery Technology Co., Ltd. ("HFBT") received approval for the preliminary design of the Company's proposed MnSO_4 Plant¹**
- **Subsequent to quarter end, Company announced successful testing results for the calcining kiln. Compared to conventional kilns, which typically require more than 300 kWh² per tonne of feed, FRB's pilot kiln operates at only 80-100 kWh per tonne — delivering an impressive 70% energy savings³. This translates to a cost reduction of USD30 per tonne of product, or 5% of total production costs⁴**
- **Subsequent to quarter end, the company announced its binding strategic collaboration agreement with Professor Ou and Professor Ming from Central South University to develop a processing method to produce Lithium Manganese Iron Phosphate (LMFP) as a cathode active material (CAM)⁵**

OAKOVER PROJECT

- **Oakover's underlying value and importance as a key future operation continue to be underscored by significant manganese supply disruptions**

NON-CORE MANGANESE TENEMENTS

- **Completion of farm-out agreement with Macro Metals on non-core manganese tenements subsequent to the quarter⁶**

CORPORATE

- **Cash position at end of September 2024 of \$4.2M**

¹ Refer ASX announcement dated 2 October 2024

² 300kWh per tonne of feed quoted to Hunan Chemical Engineering Design Institute, design and engineering company responsible for company's Manganese Sulphate Feasibility Study, design and engineering

³ Refer ASX announcement dated 21 October 2024

⁴ Refer ASX announcement dated 7 May 2024 for full OPEX details

⁵ Refer ASX announcement dated 28 October 2024 for details

⁶ Refer ASX announcement dated 15 October 2024

Firebird Metals Limited (ASX: FRB, “Firebird” or “the Company”) is pleased to provide an update on its activities during the September 2024 Quarter (“the Quarter”).

CHINESE LMFP BATTERY STRATEGY

BATTERY-GRADE, HIGH-PURITY MANGANESE SULPHATE PLANT

KEY PERMITS

The permitting process for the Company's high high-purity, battery grade manganese sulphate (MnSO_4) plant remained well advanced, with rapid receipt of the final two critical permits required for operation of the plant – Environmental Permit and Energy Permit.

The granting of the Environmental Permit, which was the second of three critical permits, marked another significant milestone for the Company, paving the way for the construction and operation of the plant. The first critical permit, the Safety Permit, was received in May 2024, alongside two additional minor permits: the Water and Soil Monitoring Permit and the Workplace Health and Safety Permit.

As part of the process to be awarded the Environmental Permit, Firebird was required to enter into MOUs to dispose of their leach residue, which is a waste stream in the production of high purity manganese sulphate. The Company signed non-binding MOUs with four Chinese industrial plants for potential offtake for the leach residue, with total potential demand far exceeding the amount of leach residue to be produced per annum from the plant.

Demand for leach residue, which is used in the production of cement, highlighted the significant environmental benefits derived from operating within a circular industry and demonstrated the Company's unique zero-waste process.

The last of the three critical permits required for the operation of the Company's MnSO_4 Plant, the Energy Permit, was received in September demonstrating the strong level of support from the Jinshi Government, and experience and hard work of the Company's industry leading team in-country team.

For the Energy Permit process, Hunan Firebird Battery Technologies (**HFBT**) engaged Hunan Chemical Engineering Design Institute (**HCEDI**) to calculate energy consumption data per tonne for each product.

The Company's low energy usage focus and capabilities, combined with industry leading zero-waste processes of the Plant reaffirmed the capabilities of the Company to become a near-term, low-cost and sustainable producer of MnSO_4 and Mn_3O_4 .

Once the remaining two permits (Social Sustainability Permit and Building and Construction Permit) are obtained and following a Final Investment Decision (**FID**), anticipated to be made in H2 2024, Firebird is expected to commence construction of the sulphate plant, with completion projected to take approximately 12-15 months and operations expected to commence in late 2025.

	PERMIT	STATUS
1	Project Initiation Permit by the NDRC (National Development and Reform Committee)	Granted
2	Project Environmental Permit via the Environmental Impact Assessment (EIA) Document	Granted
3	Project Safety Permit	Granted
4	Project Energy Permit via Energy Technology Evaluation Document	Granted
5	Water and Soil Monitoring Permit	Granted
6	Workplace Health and Safety Permit	Granted
7	Social Stability Permit	Work commenced
8	Building and Construction Permit	80% Complete

SUNWARD AGREEMENT

In June 2024, HFBT entered into an agreement with Zhongji Sunward Technology Co, Ltd (**Sunward**), a leading engineering and large-scale comprehensive design research company in China. This agreement granted Sunward the rights to use HFBT's unique energy recycling calcining system (patent pending) in Sunward kilns.

Firebird and Sunward signed a development agreement, with Sunward co-funding and evaluating the commercialisation of HFBT's unique energy-saving rotary kiln system.

The pilot-scale calcining kiln was successfully delivered, with installation and testing completed. When compared to conventional kilns, which typically require more than 300 kWh⁷ per tonne of feed, FRB's pilot kiln operates at only 80-100 kWh per tonne — delivering an impressive 70% energy savings. This translates to a cost reduction of USD30 per tonne of product, or 5% of total production costs⁸.

Additionally, the unit was set to be evaluated for potential applications in other industries, including iron ore beneficiation and lithium sulphate production.

The pilot unit, measuring 11m in length, with a 0.5m diameter and height of 3m, has a processing capacity of 80kg per hour, or 1.92 metric tons per day. Compared to conventional calcining units that use 300-350kWh per ton of material, this new technology offers significant energy savings.

Firebird has continued to focus on delivering energy efficiency improvements through its proprietary technologies. The Energy-Saving Calcining Technology and 5th Generation Crystallisation Technology further strengthen the Company's compelling opportunity to rapidly develop into a low-cost producer of high-purity manganese sulphate. This agreement with Sunward has underscored Firebird's commitment to innovation and its strategic goal of becoming a key producer in the manganese industry.

⁷ 300kWh per tonne of feed quoted to Hunan Chemical Engineering Design Institute, design and engineering company responsible for company's Manganese Sulphate Feasibility Study, design and engineering

⁸ Refer ASX announcement dated 7th May 2024 for full OPEX details



Image 1: Firebird's Rotary Kiln

PRELIMINARY DESIGN APPROVAL

Subsequent to the end of the quarter, Firebird received approval for the preliminary design of the Company's proposed battery-grade, high-purity manganese sulphate plant.

Approval of the design followed an in-depth technical review by the Jinshi High-Tech Industrial Committee alongside the Hunan Chemical Engineering Design Institute (**HCEDI**) addressing key technical considerations.

HCEDI, engaged by HFBT, successfully completed the preliminary design as part of the broader Feasibility Study, which encompassed process design, engineering, financial assessments and the necessary environmental, safety and energy permits.

Feedback gathered at various stages of development have been integrated into the preliminary design with approval satisfying approximately 80% of the requirements for obtaining the Building and Construction Permit.

In addition, HFBT initiated geotechnical drilling at the proposed plant site which will inform the upcoming detailed engineering design.



Image 2: Aerial View of proposed Plant and buildings

BINDING STRATEGIC COLLABORATION AGREEMENT WITH CENTRAL SOUTHERN UNIVERSITY

Subsequent to the end of the quarter, Firebird entered into a binding strategic collaboration agreement with Professor Ou and Professor Ming from Central South University (**CSU**) in Changsha, Hunan. The partnership aims to develop a processing method to produce Lithium Manganese Iron Phosphate (**LMFP**) as a cathode active material (**CAM**).

CSU has strong reputation for producing top experts in the Li-ion battery supply chain, with alumni including the founders of BYD and Rongbay Technology and world leading battery materials processes. The strategic agreement will be led by two industry leaders, Professor Xing Ou and Professor Lei Ming, who have significant industry experiences will lead the collaboration, bringing strong R&D expertise in LMFP and between the two hold over 90 Chinese invention patents, and are supported by a large number of PhD and Masters students.

The partnership combines CSU's significant LMFP cathode experience with Firebird's expertise in battery grade manganese sulphate production, aiming to enhance LMFP cathode technology and accelerate its commercialisation. Firebird expects significant advantages from the LMFP cathode pathway, including cost savings and a superior product to provide a competitive edge.

CSU and Firebird will develop a unique process, starting with lab-scale testing, while planning a scoping study for a commercial pilot plant to advance next-gen cathode materials. Test work is to be carried out at Firebird's R&D centre in Jinshi. Initial results are expected in Q1 2025. Firebird will own all test work result and patents both within China and Internationally.

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 (MnSO_4) from its proposed production plant in China. One of the largest operational costs in MnSO_4 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 MnSO_4 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.

OAKOVER

The ongoing development of the flagship Oakover Project, located in Western Australia, remained critical pillar of Firebird's manganese battery materials strategy. Since listing in 2021, Firebird has delivered significant and rapid progress at Oakover, with key development and environment studies progressing as planned.

It is intended that, once Oakover is in production, ore from the Project will be used to feed the Company's Battery Grade Manganese Sulphate plant in China.

NON-CORE MANGANESE TENEMENTS

Subsequent to the quarter, the Company completed its farm-out agreement with Macro Metals Ltd (**Macro**) regarding the development of Firebird's Wandanya and Disraeli tenements (E46/1456, E46/1457 and E46/1389) (**Tenements**).

Following a period of due diligence, both parties agreed to remove the Midgengadge Project (E45/5906) from the acquired tenement package as announced on 23 July 2024.

As a result, the amended agreement terms include investment from Macro of \$112,500 for exploration and development expenditure on the Tenements within 12 months in order to earn an 80% interest. This expenditure must include at least 10 RC holes, for a minimum total of 100 metres drilled on each of the three tenements. Macro will assume full responsibility for the Tenements over this earn-in period.

Firebird's 20% interest will be free carried until such time as Macro makes a decision to mine, at which point Macro and Firebird will enter into an incorporated joint venture. Firebird retains the ability to transfer its 20% interest in the Tenements into a 1% royalty. The agreement also allows for Firebird to earn 1% sales commission (based on Free on Board (**FOB**) revenue).

FINANCIAL OVERVIEW

The Appendix 5B for the quarter ended 30 September 2024 provides an overview of the Company's financial activities. Exploration expenditure for the quarter was \$242 which primarily related to metallurgical test work, permitting and studies, and consulting fees. The total amount paid to Directors of the Company, their associated and other related parties was \$141,854 comprising salary and Director fees.

Cash and cash equivalents at quarter end was \$4.2M

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^{9,10}, 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.

⁹ 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.

¹⁰ See ASX announcement dated 1 December 2021: Inferred Resource of 57.5 Mt at 12.2% Mn.

Additional Listing Rule Information

The Company advises the following information in accordance with Listing Rule 5.3.3 Tenement Schedule as at 30 September 2024:

Project	Tenement	Ownership at the Start of quarter	Ownership at end of Quarter
Oakover	E 52/3577	100%	100%
Oakover	E 46/1392	100%	100%
Oakover	E 52/3948	100%	100%
Hill 616	E 52/3633	100%	100%
Raggard Hills	E45/5905	100%	100%
Midgengadge Manganese	E45/5906	100%	100%
Disraeli*	E 46/1389	100%	100%
Wandanya*	E 46/1456	100%	100%
Wandanya*	E 46/1457	100%	100%

The Company advises that no interests were acquired or disposed of during the quarter. Subsequent to the end of the quarter, the Company completed a farm-out agreement with respect to the projects marked with *.

Ownership may relate to either direct or contractual rights.

Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

Firebird Metals Limited

ABN

24 610 035 535

Quarter ended ("current quarter")

30 September 2024

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
1.	Cash flows from operating activities		
1.1	Receipts from customers		
1.2	Payments for		
	(a) exploration & evaluation	(84)	(84)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(181)	(181)
	(e) administration and corporate costs	(281)	(281)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	-	-
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	-
1.8	Other (GST refunds)	61	61
1.9	Net cash from / (used in) operating activities	(485)	(485)

2.	Cash flows from investing activities		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) exploration & evaluation	(158)	(158)
	(e) investments – MnSO ₄ +Mn ₃ O ₄ plant China	(188)	(188)
	(f) other non-current assets	-	-

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
2.6	Net cash from / (used in) investing activities	(346)	(346)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	Net cash from / (used in) financing activities	-	-

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	5,067	5,067
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(485)	(485)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(346)	(346)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	4,236	4,236

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	4,236	4,236
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	4,236	4,236

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	142
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-
<i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i>		

7.	Financing facilities <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
7.1	Loan facilities	n/a	n/a
7.2	Credit standby arrangements	n/a	n/a
7.3	Other (please specify)	n/a	n/a
7.4	Total financing facilities		
7.5	Unused financing facilities available at quarter end		n/a
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		
	n/a		

8.	Estimated cash available for future operating activities	\$A'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(485)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(346)
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(831)
8.4	Cash and cash equivalents at quarter end (item 4.6)	4,236
8.5	Unused finance facilities available at quarter end (item 7.5)	-
8.6	Total available funding (item 8.4 + item 8.5)	4,236
8.7	Estimated quarters of funding available (item 8.6 divided by item 8.3)	5.10
	<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>	
8.8	If item 8.7 is less than 2 quarters, please provide answers to the following questions:	
8.8.1	Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
	Answer: n/a	
8.8.2	Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
	Answer: n/a	

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: n/a

Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 31 October 2024

By the Board

Authorised by:
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.