

BUILDING WA'S NEXT MAJOR MANGANESE OPERATION

ASX:FRB

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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.

A TIER-ONE MANGANESE OPPORTUNITY

Successfully executing well-defined growth strategy to produce manganese concentrate and high-purity sulphate (HPMSM)

234 Mt¹ in Resources across Western Australian based project portfolio, with significant exploration and development growth upside

Flagship Oakover Project boasts an Mineral Resource Estimate (MRE) of 176.7 Mt at 10% Mn, with 105.8 Mt @ in an Indicated category²

Oakover Manganese Concentrate Scoping Study confirmed outstanding long-term potential as a manganese operation

Production of >99.8% purity manganese sulphate monohydrate crystal, confirmed Oakover manganese ore can be processed into battery grade HPMSM³

Strong relations and ongoing commitment to deliver long-term support and value to local Jigalong community

Importance and demand for battery grade manganese sulphate continues to rapidly grow - Firebird is well-positioned to supply into this growing market

Notes

1. Combined resource from ASX announcement "Firebird grows Oakover Indicated Resource by 80% to 105.8 Million Tonnes" dated 23/3/2023 and ASX announcement "Hill 616 Maiden inferred Resources increases Mn 90%" dated 1/12/2021

2. For full details refer ASX announcement "Firebird grows Oakover Indicated Resource by 80% to 105.8 Million Tonnes" dated 23/3/2023

3. For full details refer ASX announcement "Battery Grade Manganese Sulphate produced from Oakover" dated 30/1/2023



A WELL-POSITIONED PROJECT PORTFOLIO

1

OAKOVER (FLAGSHIP)

- Located 85km east of Newman
- Large MRE of 176.7 Mt at 10% Mn, with 105.8 Mt at 10.1% in an indicated category and strong growth upside
- Near-surface, gently dipping geology and multiple processing options

2

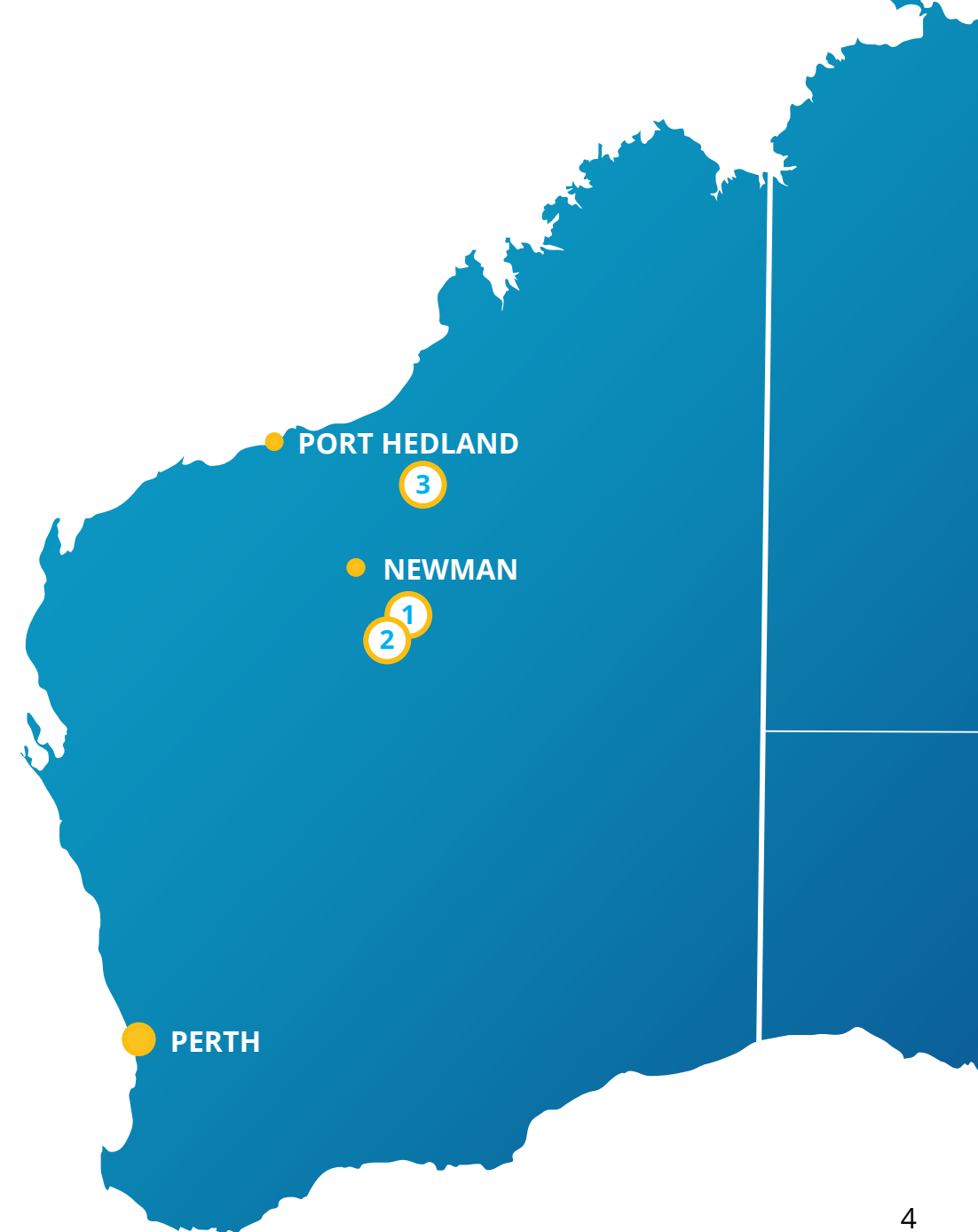
HILL 616

- 35km south of Oakover
- 57.5 Mt @12.2% Mn Inferred Mineral Resource
- Similar geology to Oakover

3

WANDANYA

- Exploration focused, with high-grade, Direct Shipping Ore potential
- 50km southwest of world class Woodie Woodie Manganese Mine
- Rock chip results up to 64.9% Mn and 55.2% Mn yet to be drill tested



Notes

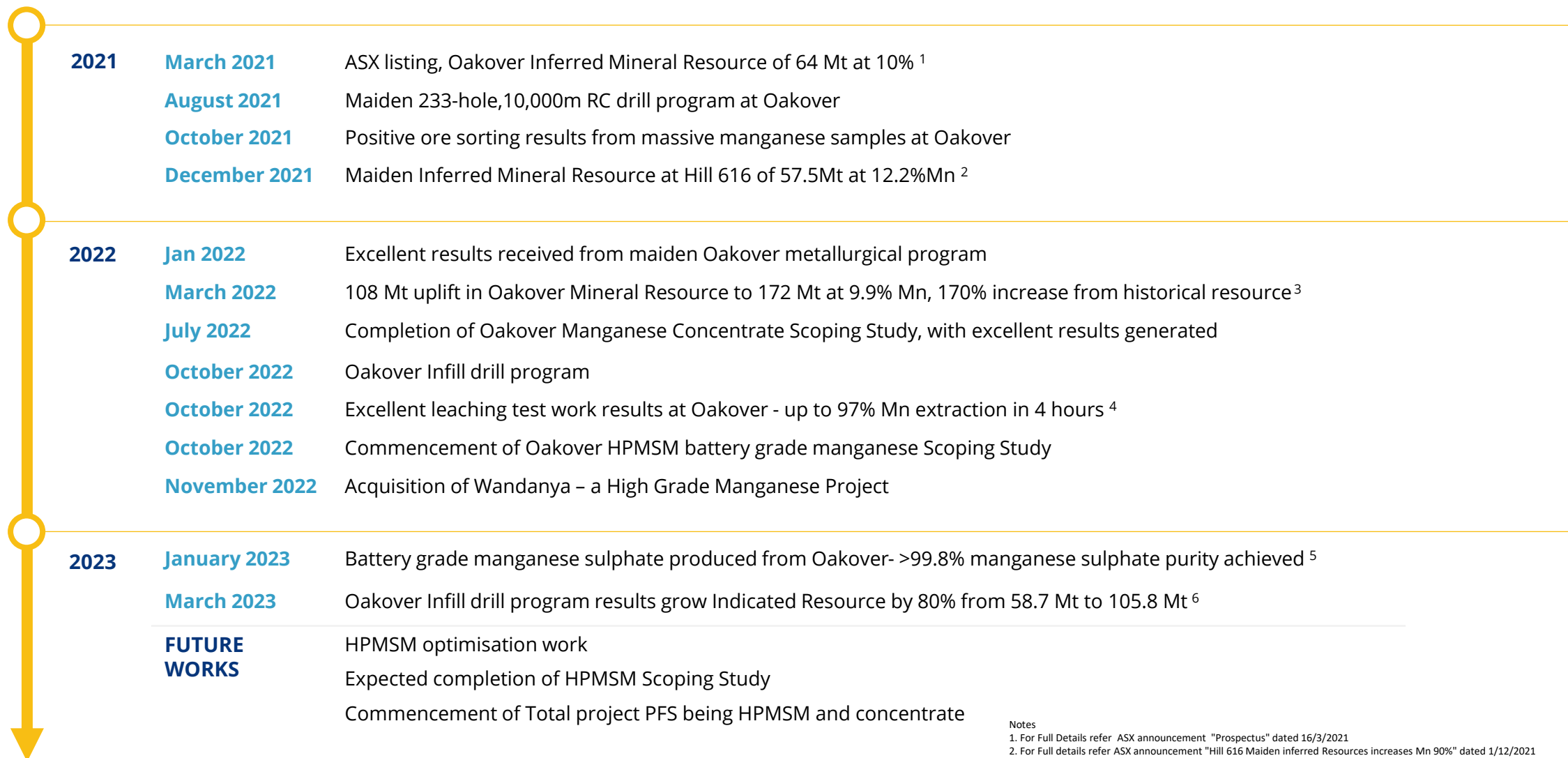
1. For full details refer ASX announcement "Firebird grows Oakover Indicated Resource by 80% to 105.8 Million Tonnes" dated 23/3/2023

2. For full details refer ASX announcement "Hill 616 Maiden inferred Resources increases Mn 90%" dated 1/12/2021

3. For full details refer ASX announcement "High Grade Manganese Project Acquisition" dated 29/11/2022

RAPID AND SUCCESSFUL PROJECT DEVELOPMENT

Since listing in early 2021, FRB has rapidly grown and developed its project portfolio, with a key focus on Oakover



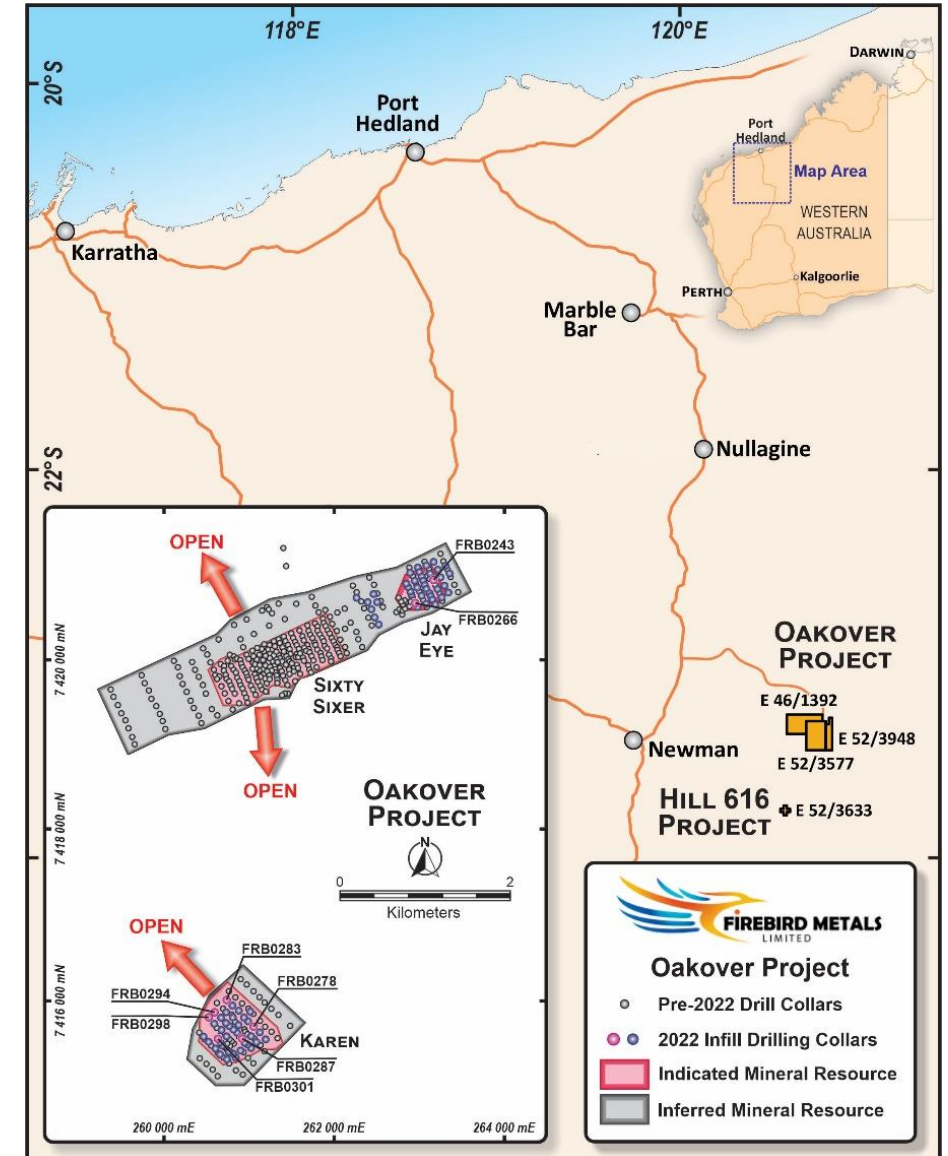
Notes

1. For Full Details refer ASX announcement "Prospectus" dated 16/3/2021
2. For Full details refer ASX announcement "Hill 616 Maiden inferred Resources increases Mn 90%" dated 1/12/2021
3. For full details refer ASX announcement "Game Changing Resource Upgrade at Oakover" dated 10/3/2022
4. For full details refer ASX announcement "Positive Hydromet Testwork – Scoping Study Underway" dated 24/10/2022
5. For full details refer ASX announcement "Battery Grade Manganese Sulphate produced from Oakover" dated 30/1/2023
6. For Full details refer ASX announcement "Firebird grows Oakover Indicated Resource by 80% to 105.8 Million Tonnes" dated 23/3/2023

OAKOVER GROWING IN SIZE AND SCALE

- 80% increase in Indicated Resources at Oakover to 105.8 Mt
- Impressive Resource upgrade a result of the 82 hole, 2,828m infill drill program at the Jay Eye and Karen deposits, completed in October 2022
- Oakover Mineral Resource Estimate stands at 176.7 Mt at 10% Mn
- Significant Resource growth upside remains through:
 - Sixty Sixty: mineralisation remains open to the northwest and southwest
 - Karen: mineralisation remains open to the northwest

Area	Mineral Resource Classification	Tonnes (Mt)	Mn (%)	Fe (%)	SiO2 (%)	Al2O3 (%)	P (%)
Sixty Sixer	Indicated	58.8	10.4	9.2	40.2	10.1	0.10
	Inferred	43.7	9.4	8.5	38.3	9.7	0.11
Sixty Sixer	Sub-Total	102.5	10.0	8.9	39.4	9.9	0.11
Jay Eye	Indicated	13.1	9.7	7.6	34.2	8.3	0.10
	Inferred	22.1	10.1	6.9	31.5	8.8	0.06
Jay-Eye	Sub-Total	35.2	10.0	7.1	32.5	8.6	0.07
Karen	Indicated	33.9	9.7	8.9	39.4	9.9	0.10
	Inferred	5.1	8.2	9.1	42.3	10.5	0.11
Karen	Sub-Total	39.0	9.5	9.0	39.8	10.0	0.10
Oakover	Indicated	105.78	10.1	8.9	39.2	9.8	0.10
Oakover	Inferred	70.87	9.6	8.0	36.5	9.5	0.09
Oakover	Total	176.65	9.9	8.6	38.1	9.7	0.10



OAKOVER – CONCENTRATE SCOPING STUDY RESULTS

Profile (Based on MRE at Sixty Sixer)

- Processing plant throughput of ~4 Mtpa, to produce ~900 ktpa of 30% Mn concentrate annually
- 10-year Life of Mine based on **Sixty Sixer** deposit
 - First ~6.5 years of production based on 30.5 Mt Indicated Resource
 - Last ~3.5 years based on 11.9 Mt Inferred Resource
- Low mine strip ratio of 0.9:1

Total CAPEX \$A143.8m

- A\$73.4M for plant
- A\$70.4M for renewable power plant, road upgrades and other infrastructure

Strong Financials

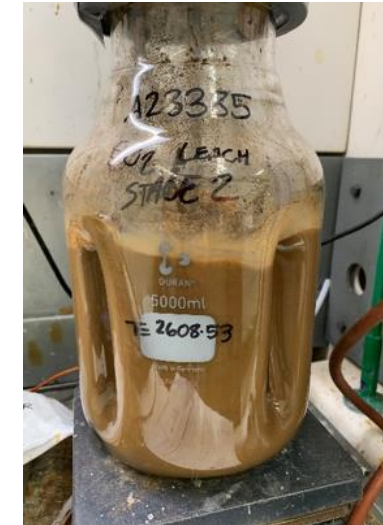
- NPV@8% ~A\$329m, IRR of 47%, average annual EBITDA of \$72.7M

Potential Near-Term Upside

- Scoping Study did not include Indicated Resources of Jay Eye and Karen and was produced solely of Sixty Sixer
- In March 2023, Indicated Resources at Oakover increased by 80% to 105.8 Mt, following completion of infill drill program at the **Jay Eye** and **Karen** deposits
- 33.9 Mt at 9.7% Mn was defined at Karen and 13.1 Mt at 9.7% Mn was defined at Jay Eye
- Development pathway and upside further de-risked through addition of 47 million tonnes in an Indicated category from Jay-Eye and Karen

OUTSTANDING METALLURGICAL TESTWORK RESULTS

- Major milestone through completion of HPMSM test work program, which delivered excellent results:
 - Production of >99.8% purity manganese sulphate monohydrate crystal
 - Meets battery grade specification
 - HPMSM crystals contain >32% Mn
- **Importantly, program confirmed Oakover manganese ore can be processed into battery grade HPMSM for the burgeoning battery industry**
- Key results from the hydrometallurgy program include:
 - Ore amenable to initial beneficiation and preparation (crush, scrub, screen, grind)
 - Ore amenable to reductive acidic leaching
 - 93-97% Mn leach extraction in 4 hours
 - Heat generated by the reaction
 - Mn concentrations of 70-140 g/l in Pregnant Leach Solution
 - Impurity removal through multistage precipitation and crystallisation
- Moving forward, Firebird will focus on:
 - Ongoing process flowsheet development and optimisation studies to further enhance process design and product quality
 - Completion of a High-Purity Manganese Sulphate Scoping Study



GROWING IMPORTANCE OF MANGANESE IN LI-ION BATTERIES

Importance of manganese within the EV battery sector is growing, due to its use in both Nickel and LFP battery cathode streams :

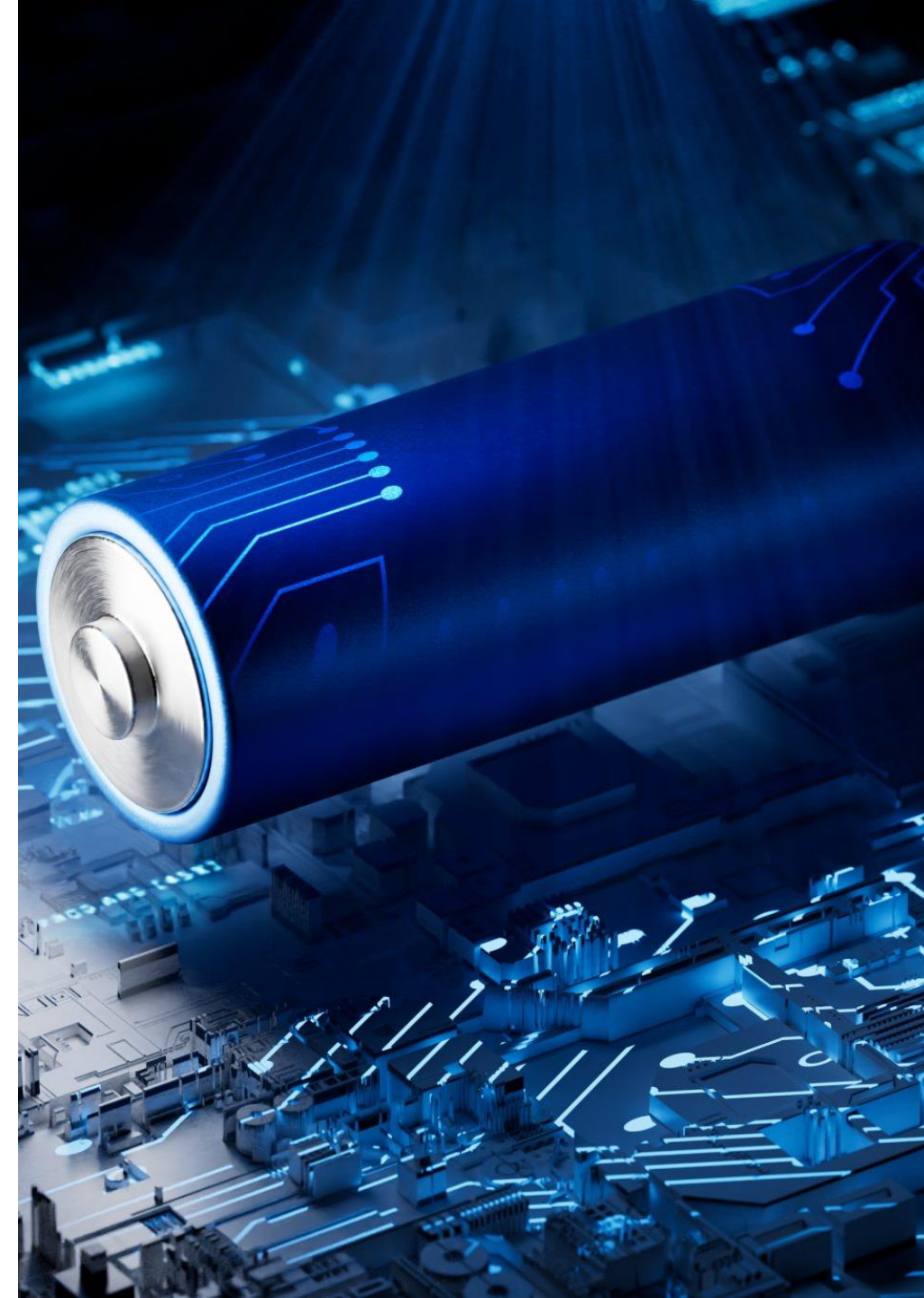
- **Why is this?** Higher manganese allocations within EV batteries can drive cost reductions, without reducing energy density and range

Volkswagen, Tesla and Stellantis all announced Manganese rich nickel-based batteries

CATL announced commencement of mass production of Lithium Manganese Iron Phosphate (LMFP) batteries in July 2022

Global HPMSM demand by the lithium-ion battery industry is forecast to grow by 33% CAGR to 2.915Mt manganese between 2021-2031. In 2022, demand was estimated at 223,000 Mt (Source: E Source)

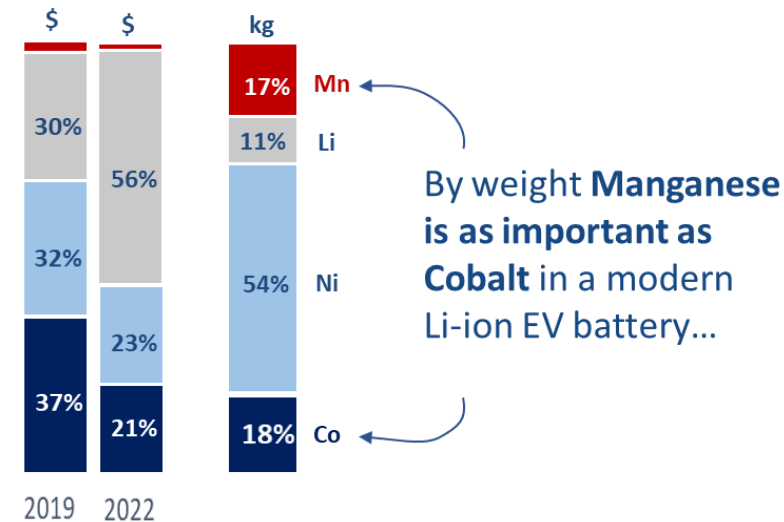
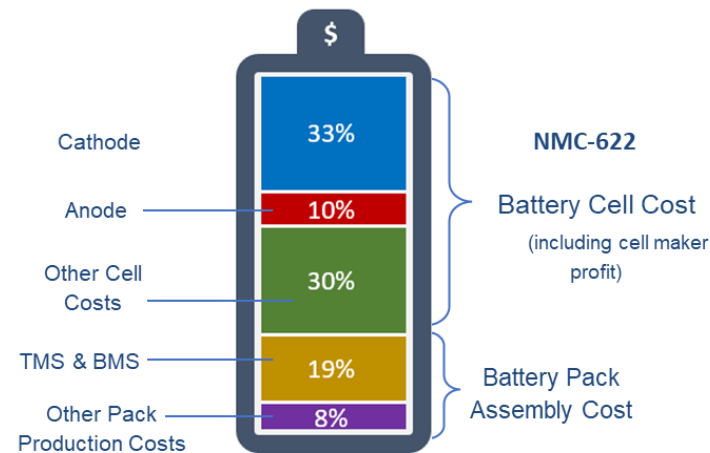
Firebird, well-placed to supply into this growing market through the development of the Oakover Project



MANGANESE VALUE PROPOSITION IN EV BATTERIES

Typically, Manganese accounts for only 1-2% of the cost of cathode materials

Manganese importance and content growing in both major cathode configurations NCM and LFP (new LMFP)

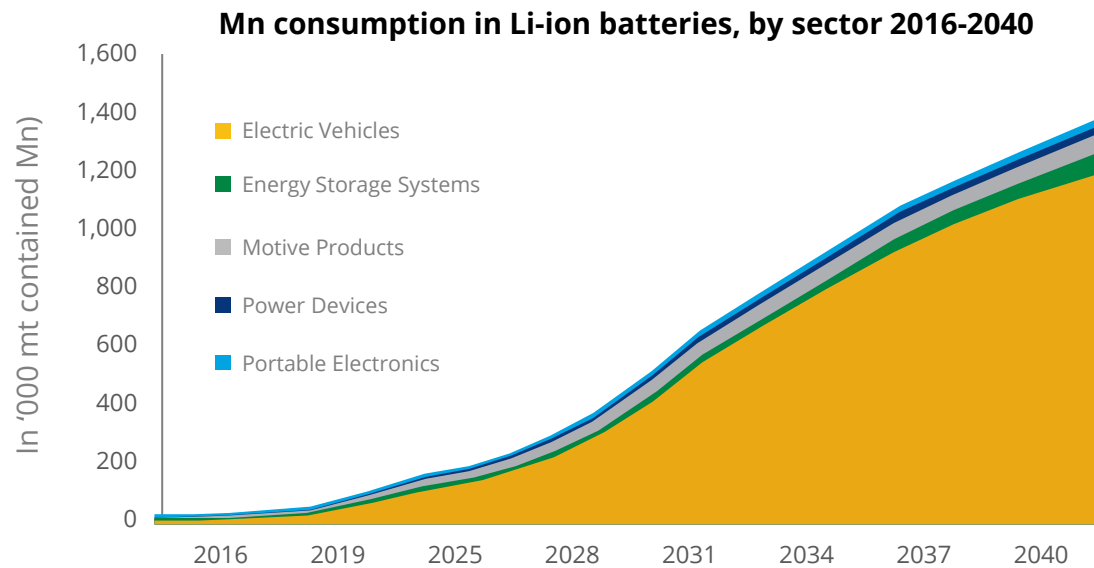


Source: Cairn ERA, American Manganese Inc., Bloomberg, CPM Group
 Prices used (per kg of battery-grade material, metal contained):
 Jan 2019: Li=\$85, Ni=\$18, Mn=3.2, Co=62; May 2022: Li=\$386, Ni=\$31, Mn=3.5, Co=\$84

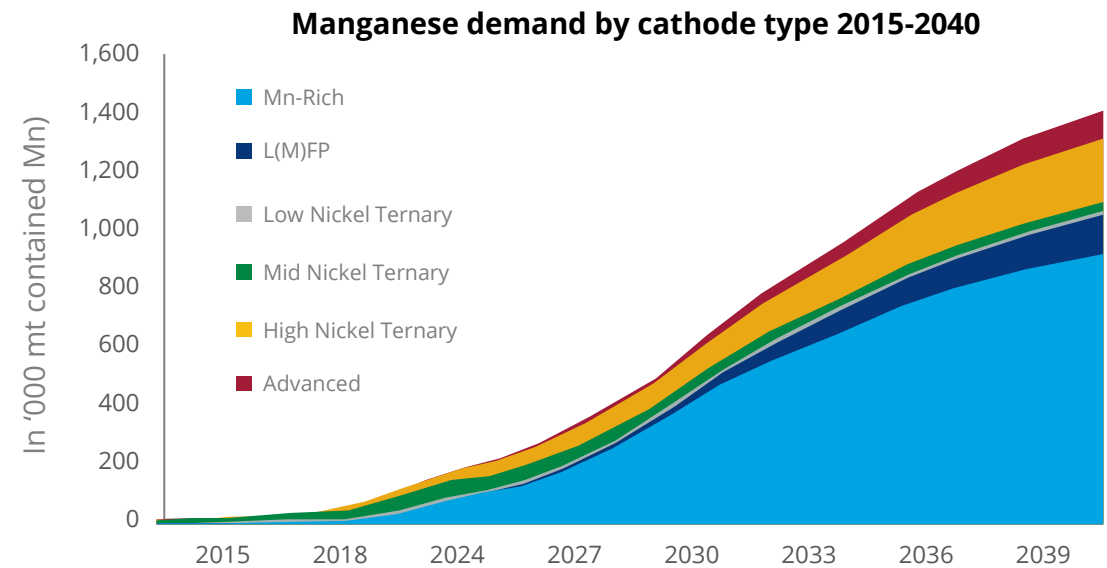
MANGANESE DEMAND

- HPMSM demand driven by lithium-ion battery usage in EV's
- Mn demand in lithium-ion batteries is forecast to rise from **0.129Mt contained Mn units in 2022 to 1.37Mt contained Mn units by 2040** (Wood Mackenzie)
 - 1.37Mt equates to an approximate demand of ~4.3 Mt of HPMSM (i.e. HPMSM typically contains >31.5% Mn content)

- Manganese rich cathodes are still at an early stage
- Wood MacKenzie forecasts that **manganese rich cathodes will represent 66% of total Mn demand in Li-ion batteries by 2040**



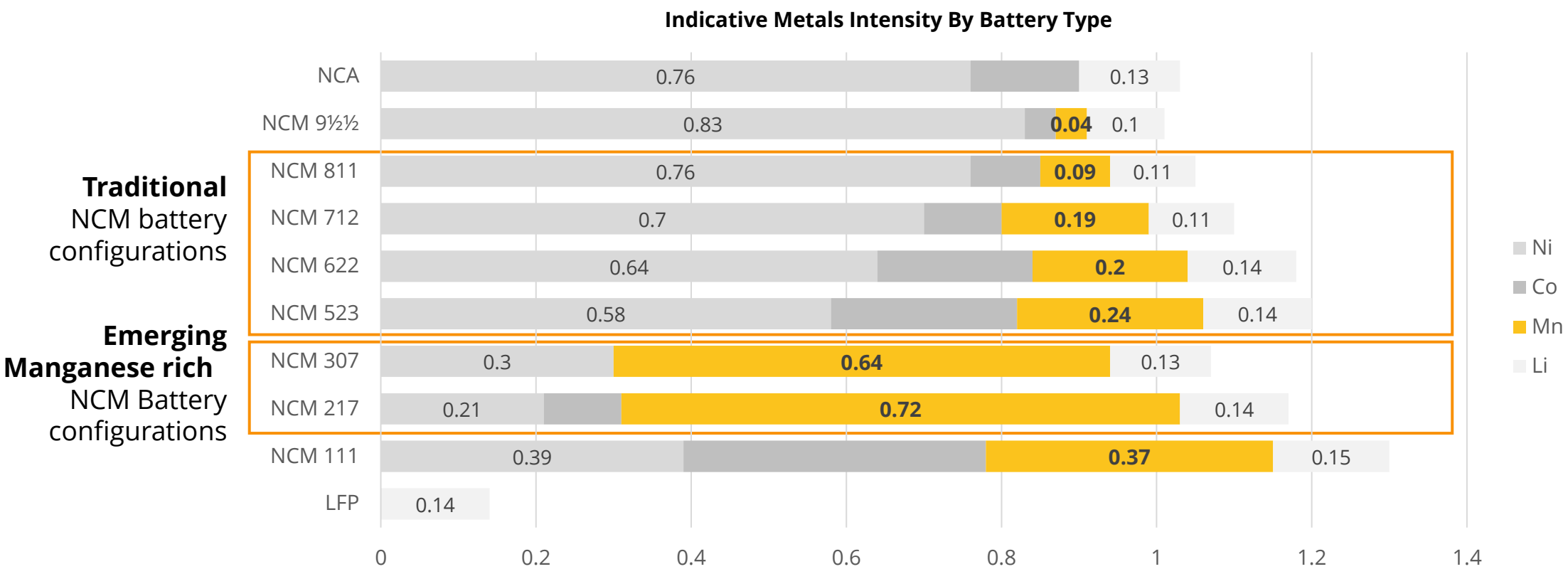
Source: Wood Mackenzie



Source: Wood Mackenzie

Manganese Rich NCM cathodes

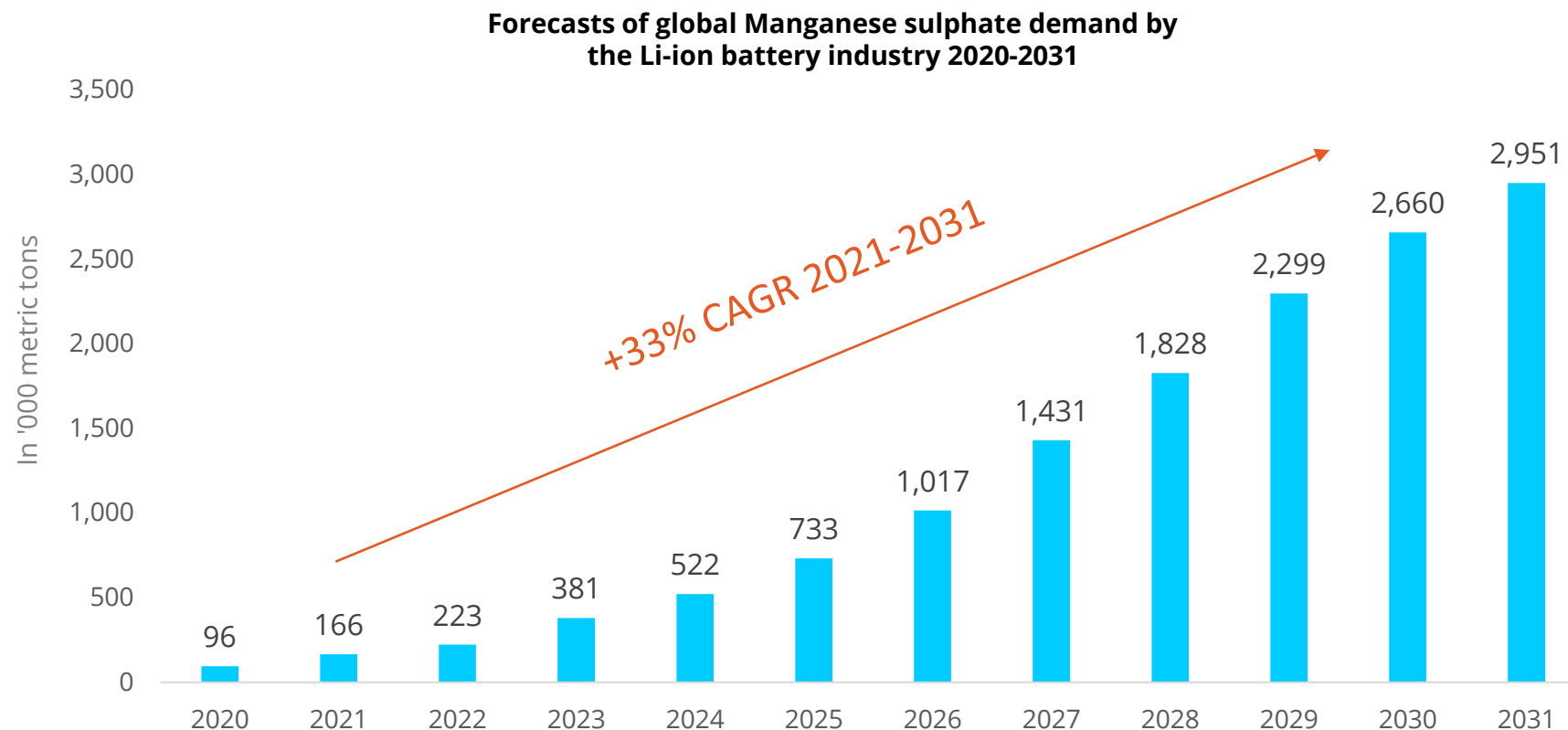
Development of Manganese rich NCM batteries continues to grow
 Volkswagen, Tesla and Stellantis all announced high Manganese content in nickel-based batteries



Source: Macquarie Bank Group Limited, “Metals and Bulk Commodities Outlook: Walking a tightrope” Rho Motion, Company Reports, Macquarie Strategy, Jan’23

MANGANESE DEMAND

Global HPMSM demand by the lithium-ion battery industry is forecast to grow by 33% CAGR to 2.915 Mt manganese between 2021-2031. (Source: E Source)



Source: E Source

BUILDING LONG-TERM VALUE FOR STAKEHOLDERS



Oakover

- Completion of High-Purity Sulphate Manganese Scoping Study in Q3 2023
- To be followed by total Project Pre-Feasibility Study - High-Purity Sulphate and Manganese Concentrate



Wandanya

- Progressing relevant heritage agreements and surveys
- Mapping programs planned for Q2 2023
- Maiden drill program planned for end of Q2 2023



Hill 616

- Strategic location to Oakover
- Shallow, near-surface significant resource

CORPORATE SNAPSHOT

**EVAN CRANSTON** Chairperson

Mr Cranston is an experienced mining executive, with a background in corporate and mining law

**PETER ALLEN** Managing Director

Mr Allen is a mining executive, with more than 20 years experience in marketing of manganese, lithium and a range of other commodities

**WEI LI** Finance Director

Mr Li is a Chartered Accountant with extensive experience in the resource industry. Mr Li managed a private base metal exploration company in the Northern Territory and assisted in commissioning a A\$150 million Electrolytic Manganese Dioxide (EMD) plant in Hunan China

**ASHLEY PATTISON** Non-executive Director

Mr Pattison has over 20 years' experience in the resources sector from both a corporate finance and operational perspective. Qualified as chartered accountant, he has extensive experience in operations, finance, strategy and corporate finance

**BRETT GROSVENOR** Non-executive Director

Mr Grosvenor is an experienced mining executive, with over 25 years' experience in the Mining and Power industry. Holding a dual tertiary qualification in Engineering and a Master in Business

Firebird Metals Limited **ASX:FRB**

Share price as of 29/3/23 \$0.14

Shares on issue 69.99 M

Market capitalisation **\$9.8 M**

Options @ \$0.30 8 M

Options @ \$1 10 M

Performance rights 3.3 M

Cash on Hand **\$2.4 M**
(31st Dec 2022)

Major Shareholders

Tolga Kumova 8.4%

Mining Equities 4.9%

Board (incl related parties)
& management 7.6%

Top 20 shareholders 52%

THE FIREBIRD ADVANTAGE

-
- ✓ A sizeable manganese portfolio, with 234 Mt¹ in Resources and 105.8 Mt in an Indicated Resource category ²
 - ✓ Further exploration and development growth upside across entire Project portfolio
 - ✓ Successful Manganese Concentrate Scoping Study complete, confirming long-term potential of Oakover as a manganese hub
 - ✓ Metallurgical test work confirmed Oakover manganese ore can be processed into battery grade HPMSM
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- ✓ EV and battery cathode manufacturers have communicated long-term objective to increase manganese content within batteries, due to possible cost reductions, without reducing energy density and range
-
- ✓ Strong market demand and growth projections:
 - From 2021 to 2031, demand for high-purity manganese sulphate is forecast to rise by 33% CAGR, to 2.951 million mt, primarily from the Lithium-ion battery industry (E Source - former Cairn Energy)
-
- ✓ Limited number of advanced ASX manganese developers, places Firebird in a strong position to develop Oakover and supply a high-quality product into a growing and supply-constraint market
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Notes

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THANK YOU

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