ASX ANNOUNCEMENT

13 September 2022

MAGNETITE MINES TRANSFORMING TO MEET GROWING HIGH-GRADE MARKET

Highlights

- **Magnetite Mines is increasing the scale of its flagship Razorback Iron Ore Project to meet accelerating market demand for premium iron ore products**
- **Following market feedback, the scale of the initial development is being increased to at least 5Mtpa**
- **Optimisation studies are underway to investigate a range of higher-grade iron ore products, potentially including high-value Direct Reduction (DR) grade concentrates**
- **Following optimisation, a refocused DFS will be undertaken, taking advantage of all transferable outcomes from studies and work programmes completed to date**
- **The Company has enhanced its marketing, governance, technical and project capability with a range of highly-credentialled Board and leadership appointments**

Magnetite Mines Limited ("MGT" or **"**the **Company")** announces that in response to rapidly-evolving market conditions and downstream industry feedback, it is increasing the planned production scale for the Razorback Iron Ore Project (Project) and assessing production options for high-value concentrate product streams.

Accordingly, the Company's current strategy of pursuing a small-scale, lower-capital expenditure development is being refocused in favour of a larger-scale, staged development that takes full advantage of the large resource base, available infrastructure and attractive mineral processing characteristics of Braemar ores.

The expected benefits of this strategic shift include:

1. enhanced project economics as a result of economies of scale[1] and widening premiums for high-grade and DR-grade products, as demonstrated in recent Expansion Study outcomes
2. increased attractiveness to potential iron and steel industry partners and customers, institutional investors, and project financiers
3. alignment of Project scale with large Mineral Resource Estimates[2,3,4].
4. potential to re-estimate Ore Reserves as a direct result of expanded production scale
5. improved ESG credentials associated with enhanced concentrate specifications and potential electrification of key infrastructure and equipment supported by larger-scale development

In advance of this strategic shift, the Company has positioned itself to assure the development of the Razorback Project, reinforcing Board and management leadership with deep corporate, marketing and operational experience.

Magnetite Mines' CEO, Tim Dobson, said:

"In raising its sights, the Company is responding to direct evidence of rapidly-evolving market conditions associated with the decarbonisation requirements of the iron and steelmaking industry. The Company has anticipated this shift and has strengthened its team accordingly.

"The current Razorback Ore Reserve[2] represents only 11% of the Company's Mineral Resources[3], so this strategic shift to a larger initial production scale better aligns the Project with the Resource potential, while still taking advantage of the abundant existing infrastructure that will support a pragmatic, staged development agenda.

"The Company is committed to returning the highest possible value to shareholders, and this strategic shift is fully aligned with that objective."

Enhancement of Razorback Iron Ore Project

Background

The current DFS Project configuration was based on the 2019 Scoping Study[5] and 2021 Pre-Feasibility Study (2021 PFS)[6], which sought to minimise upfront capital with a small-scale development targeting a blast furnace iron ore concentrate product. This positioning by the Company was driven by market conditions at the time, including sentiment towards magnetite in domestic capital and investor markets.

The company commenced a DFS on the selected 2.5Mtpa production scenario based on mining optimisation, process flow sheet confirmation, infrastructure investigation, transport reviews, ESG engagements and cost estimates. Significant metallurgical testwork has been completed[7] to underpin confirmation of the process flow sheet and minimise both capital and operating costs.

The DFS programme has also led to discussions with a range of potential financing and strategic partners.

Strategic review

Magnetite Mines is committed to pursuing opportunities that maximise shareholder value while continuing to mitigate technical and execution risk, as well as remaining nimble and responsive to changed market conditions and emerging opportunities. The Company undertook a strategic review in June to assess a range of factors, including:

- The developing 'green steel' transition driven by decarbonisation and associated commentary calling for greater high quality iron ore supply to meet the needs of the evolving iron and steelmaking industry
- Industry feedback and, in addition, unsolicited recent approaches from a range of potential strategic partners and offtakers, suggesting larger development scale would be well supported
- A material increase in the Company's Mineral Resource base with the recent grant of the Muster Dam tenement[8]

- 2022 Expansion Study confirming significant upside to Project economics resulting from economies of scale[1]
- Opportunity to improve cost efficiency following increases in energy, labour and material costs
- Increasing market premiums for high-grade, high-quality magnetite concentrates[9]
- Recent metallurgical testwork results supporting the potential to produce Direct Reduction (DR) grade concentrates[7]

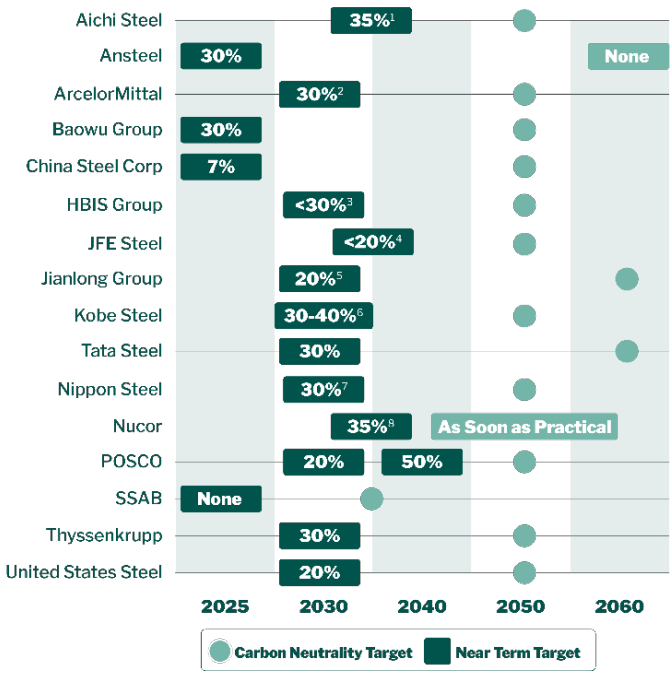
An increase in initial development scale is expected to significantly reduce unit production costs and support optimisation opportunities such as rail access to site. These economies of scale, underpinning enhanced returns, were demonstrated in the 2022 Expansion Study[1], and enable development of a highly competitive iron ore operation that can generate returns for shareholders in a range of market conditions.

The evolution to decarbonised iron and steelmaking is underway

Following COP26 in Glasgow in 2021, and reinforcing the 2015 Paris Agreement, 140 countries have committed to full decarbonisation by 2050, with most committing to significant carbon emission reductions by 2030[10]. The iron and steelmaking sector contributes approximately 8% of global carbon emissions due to extensive use of fossil fuels for heat and iron ore reduction in traditional iron and steelmaking processes[11].

Most major global steelmakers have announced decarbonisation targets based on plans to convert traditional coal-based steelmaking to low carbon alternatives, such as Direct Reduction (DR) combined with Electric Arc Furnaces (EAF). Where this can be achieved with renewable electricity and "green hydrogen", the concept of "green steel" becomes possible. However, this transition will necessitate a substantial increase in supplies of high grade, low impurity iron ore.

Figure 1: Major steel producer carbon reduction targets



1. by 2030 compared to 2013 levels | 2. by 2030 over 2018 | 3. by FY2030 compared to 2022 | 4. by FY2030 compared to FY2013
5. lower by 2033 | 6. by 2030 from 2013 levels | 7. by 2030 compared to 2013 levels | 8. by 2030 using 2015 baseline

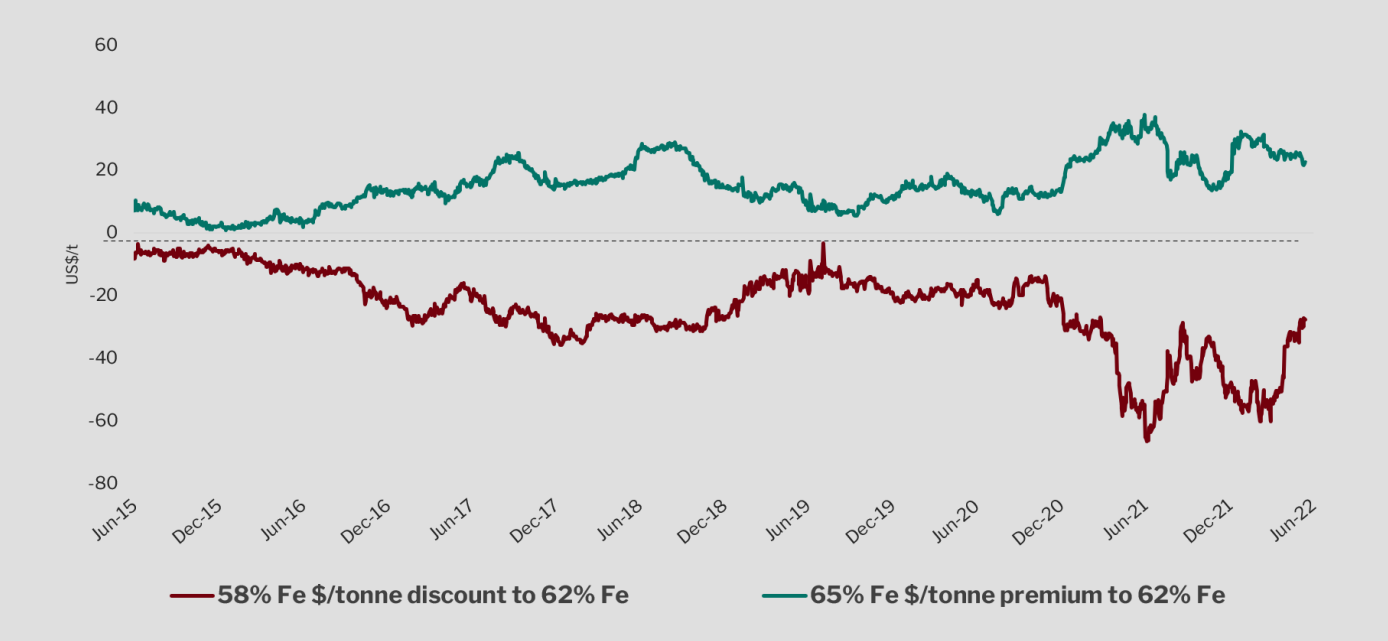
Magnetite concentrates key to transition and future

The need for development of new iron ore sources is exacerbated by a continuing depletion of seaborne direct shipping iron ore resources and a long-term trend of declining average supply grades from Australia and elsewhere[10,11].

With a transition from coal-based iron and steelmaking over the coming years, steel producers are expected to increasingly seek higher-grade iron ore sources to enable emission reductions. The transition is likely to involve more DR-EAF facilities which require high quality iron ore (DR-grade iron ore is currently typified by grades over 68% Fe with low levels of silica, alumina and phosphorus).

The trend in recent years has been that higher grade iron ores have been receiving growing premiums and increasing discounts have been applied to lower grade ores. Greater demand for high grade ores resulting from the steel industry decarbonisation transition is expected to result in attractive market conditions to support the development of new high grade iron ore sources.

Figure 1: Fastmarkets iron ore index grade spreads (us$/tonne)



These trends are also supported by feedback from market participants, including iron ore producers, steel producers, trading houses, and ESG-focused institutional investors.

Replacing lower-grade iron ores with high-grade magnetite concentrates as future feed to a decarbonised iron and steelmaking industry is a significant market opportunity and the expected rapid increase in demand will require a substantial expansion in production from new developments to fulfill this need in the timeframe required by net zero targets.

Razorback Iron Ore Project scale aligned with new market demand

Magnetite Mines' Mineral Resources currently total 4.2 billion tonnes of relatively soft, siltstone-hosted, outcropping magnetite ore (figure 3) located in the extensive and entirely undeveloped Braemar Iron Formation in South Australia.

The Razorback Project alone hosts 3.0 billion tonnes of Mineral Resource, inclusive of a 473Mt Probable Ore Reserve calculated to support 30 years mine life at a 2.2Mtpa production rate (see PFS Plant Optimisation Case)[1,6]. Increasing the planned production rate to a minimum of 5Mtpa may result in more JORC Indicated Resource being eligible for conversion to Probable Ore Reserves from the available inventory of 1,500Mt Indicated Mineral Resource (JORC 2012).

Figure 3. Magnetite Mines Ltd Mineral Resource Estimates and Ore Reserves (JORC Code 2012)

Mineral Resources	Ore (Mt, dry)	Mass Rec (eDTR%)	Fe%	SiO2%	Al2O3%	P%	LOI%	Magnetite%
Razorback Iron Project								
Indicated	1,500	15.6	18.5	47.9	8.0	0.18	5.4	15.0
Inferred	1,500	16.0	18.0	48.3	8.2	0.18	5.5	15.9
TOTAL	3,000	15.8	18.2	48.1	8.1	0.18	5.5	15.5
Ironback Hill								
Inferred	1,187		23.2	44.1	7.2	0.21	5.4	12.9

Razorback Iron Project Ore Reserve	Ore (Mt)	Mass Recovery	Concentrate (Mt)
Probable	**472.7**	**14.5**	**68.5**

Notes: Razorback presented at 11% eDTR cut-off; Ironback Hill at 0% Fe cut-off; Probable Ore Reserves are a subset of Mineral Resources. Tonnages and grades presented above are estimates of in-situ rock characteristics.

Muster Dam historic Mineral Resource Estimate not included in table.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements below, and in the case of estimates of Mineral Resources and Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

Increased scale results in improved economics

The 2022 Expansion Study, a scoping-study level assessment, assessed two staged expansion production scenarios up to 7Mtpa capacity compared to the 2.5Mtpa base case contemplated in the 2021 PFS and current DFS [1,6]:

The results of the study confirmed significant economic upside for the expansion cases (figure 3). The inclusion of critical infrastructure in the form of a rail spur and balloon loop with train load out facilities significantly improved ore transport costs compared with trucking as included in the 2.5Mtpa base case.

The two expansion cases utilised only 24% of the Company's current Resource base[2,3,4,8]

Figure 4. Previous PFS & Expansion Study Outcomes

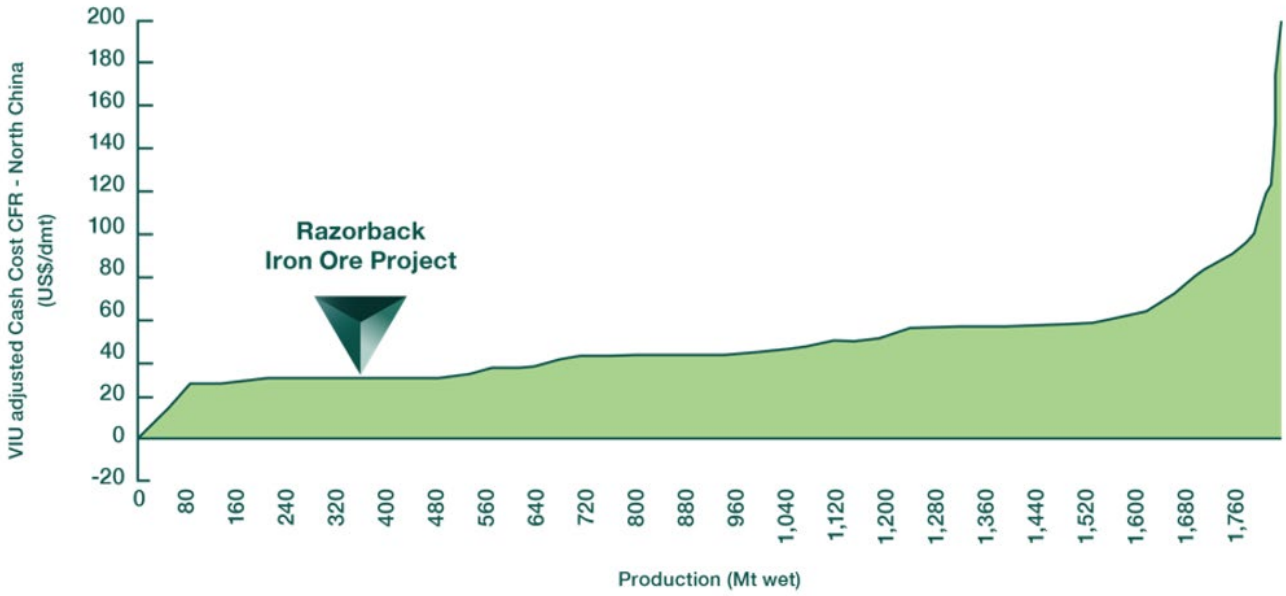
	Unit	PFS Plant Optimised[a]	Single-Step Expansion
		Stage 1	Stage 1,3
Production capacity	Mtpa	3	3 → 7
Development capital	A$m	665	1,985
Post-tax NPV-8	A$m	660	2,455
Post-tax IRR[b]	%	19%	27%
All-in breakeven[c]	US$/t	53	40

a) Expansion Study Stage 1 basis: PFS Plant Optimised case with 0.71 AUD:USD exchange rate
b) 62% Fe iron ore price assumption of US$110/t with quality adjustment premium of US$25/t
c) 62% Fe iron ore price equivalent break even price
d) The Company confirms all material assumptions underpinning the production targets and forecast financial information contained in the original 2022 Expansion Study announcement continue to apply and have not materially changed.

The all-in breakeven cost was calculated to be US$40/t in the Single Step expansion case, demonstrating the competitive nature of larger scale development of the Company's large resources. In the last 10 years, the iron ore price has been above US$40/t for 99% of the time.

The Company commissioned respected industry analysts Wood Mackenzie to assess the project's competitiveness. The resulting assessment indicated that, based on Wood Mackenzie's value in use based pricing estimates, the project would be a first quartile producer on the iron ore cost curve taking into account likely product pricing.

Figure 5. VIU-adjusted total cash cost[a,b] curve - CRF north China



Source: Wood Mackenzie, Magnetite Mines

a) Accounts for product premium or discount based on grade / specification

b) Cash costs calculated in 2022 dollars using the Single-Step Expansion case from Expansion Study, March 2022

Optimisation studies and refocused DFS

Optimisation studies will be completed to determine a go-forward scope for a refocused DFS. These studies will include capacity options, expecting to result in an initial development scale at or above 5Mtpa, and scope options, including review of DR-grade concentrate production, transport and infrastructure options.

The optimisation studies will draw heavily on all work to date, including all transferable information from current DFS work streams. Accordingly, the optimisation studies are expected to be completed in a relatively short time frame with results expected in the first quarter of 2023. The timing for completion of the subsequent refocused DFS will be determined over the coming months as the optimisation study results are locked into a go-forward scenario.

Planned optimisation studies:

Direct Reduction (DR) grade product assessment

DR-grade concentrates attract significant premium prices above benchmark prices for high grade (68% Fe) iron ore due to their high concentration of iron and low concentrations of gangue components such as silica, alumina and phosphorus.

Recent metallurgical test results[7] returned several unoptimised concentrate samples grading up tp 69.7% Fe and 2.6% Silica + Alumina from the Iron Peak deposit at Razorback. These results

have encouraged further assessments of the capability of its mineral resource base to support the production of DR-grade concentrates in material quantities and on a consistent basis. This work will include further metallurgical testwork to optimise flotation and comminution configurations.

Process Plant optimisation

Process Plant design studies completed to date for the current DFS will be transferred directly into the larger-scale configuration with modular design allowing simple duplication of circuits. Studies will assess optimal module sizing, plant design and layout as well as product options.

Mining optimisation

Mining optimisation studies will include cut-off grade analysis, pit optimisation, haulage, mine design and scheduling.

Non-Process Infrastructure (NPI)

Studies will continue the work completed to date, but reflecting the increased production scale, and will include further investigations and potential enhancements.

Tailings studies

Modelling of tailings storage options will include location assessment as well as storage approach, including dry stacking and paste thickening optionality.

Transport

The 2022 Expansion Study contemplated the construction of a 50km rail spur to site from the existing open access rail infrastructure, resulting in materially lower operating costs. The optimisation studies will review all potential transport options at larger scale, including port and ship loading options.

Project financing

The Board is confident that the contemplated enhancements to development scale and scope will release value in conjunction with a complementary finance and partner strategy. While the Company has not appointed advisors or commenced a formal partner search process, it confirms that preliminary discussions are underway with a range of industry players that have the technical and financial capability to assist with the Project's development.

These discussions have included the sharing of detailed technical and financial information relating to the Project and are covered by appropriate commercial and confidentiality arrangements. All discussions to date have been exploratory, indefinite in nature and have not resulted in a specific proposal. There is no certainty that any proposal will be forthcoming.

Board and Management

Since the start of 2022, the Company has substantially strengthened its Board and management team. Three new directors have been appointed, Mr Jim McKerlie, Mr Paul White[12] and Mr Simon Wandke[13], all of whom have made a significant contribution to the strategic direction and governance of the Company. During the same period, the Company has appointed a new CEO, Mr Tim Dobson[14], and a new CFO, Mr Ian Kirkham[15].

The addition of this depth of experience to the Company is consistent with the Company's commitment to high standards of governance, and to ensure the Company is well equipped to deliver against its revised strategic direction.

This announcement has been authorised for release to the market by the Board.

For further information contact:

Gemma Brosnan

GM – External Affairs

investor.relations@magnetitemines.com

+61 8 8427 0516

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