## ASX ANNOUNCEMENT

**29 January 2024**

# SECOND QUARTER ACTIVITIES REPORT

## ENDING 31 DECEMBER 2023

## HIGHLIGHTS

- **Razorback Iron Ore Project**
  - **Next steps taken: strategic partnering talks advanced in Japan and Middle East**
  - **Memorandum of Understanding signed with Pacific Partnerships, a subsidiary of CIMIC group, with view to financing and project partnering**
  - **Historic partnering agreement signed with Ngadjuri Nation Aboriginal Council ahead of native title agreement and cultural heritage management discussions**
  - **Seawater piped from Upper Spencer Gulf selected as preferred water supply option; engineering underway**
  - **Metallurgical testwork optimising premium 'DR grade' product development and saline water processing**

- **Corporate**
  - **Renounceable Rights offer closed raising $6.5 million**
  - **Annual General Meeting held in Adelaide, all resolutions passed**
  - **Mintech convertible loan note repaid**
  - **Appointment of Joint Company Secretary**
  - **Cash and cash equivalents at 31 December: $4.3 million**

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**Magnetite Mines Limited (ASX:MGT)** is pleased to provide an update of activities and financial results for the quarter ending 31 December 2023.

The Company continues to aggressively pursue the development of its 100% owned Razorback Iron Ore Project (Project) with a key focus on securing preferred strategic partners to support DFS funding and JV partnership. Several significant milestones were achieved during the period including confirmation of the preferred water supply option for the Project[1,2], the signing of a historic partnering agreement with the Ngadjuri Nation, Native Title holders[3], and the signing of an MoU with Pacific Partnerships[4]. Value Engineering Studies continued to focus on the production of 100% premium 'DR-grade' products from the Project and pursuing the opportunity to process ore in saline water[5,6].

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## GREEN STEEL TRANSITION

There was considerable momentum build in the global transition to green steel during 2023 and the convergence of various developments that point to a significant shift in steelmaking supply chains over the coming years. We view these shifts as extremely favourable to MGT and the development of the Razorback Iron Ore Project[7,8,9].

Based on industry analysis and direct engagement with steelmakers, MGT considers that the following events will play out as the steel industry transitions to low-carbon Direct Reduced Iron (DRI) and Electric Arc Furnace (EAF) technologies, and is positioning the Razorback Project accordingly:

1. Steelmaking countries that do not have the means to produce cost-competitive green hydrogen at scale, such as Japan, Korea and Taiwan, will seek to import green iron instead of coal and lower-grade iron ore as they do now. Steelmakers and trading groups from these countries are actively seeking to lock in future green iron supply now.

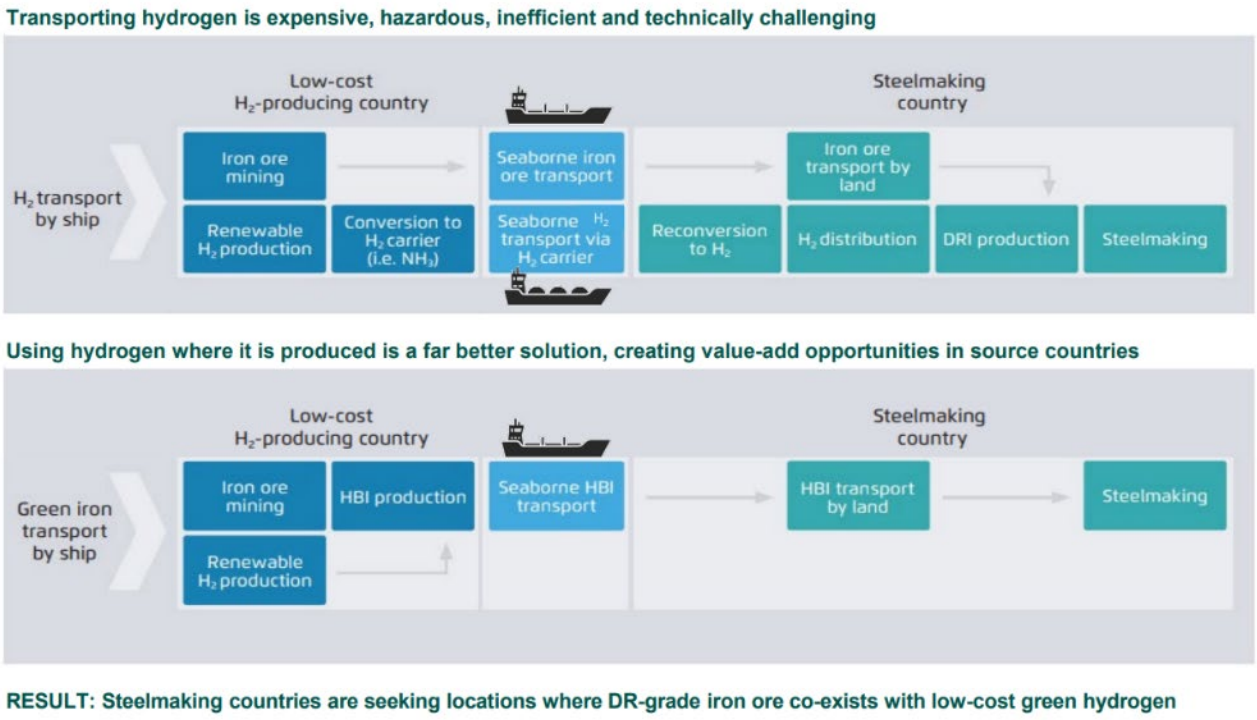


*Figure 1. Steel industry decarbonisation is creating a new seaborne trade of green iron products such as HBI*

2. The widespread availability of green hydrogen at scale is some time away and the increasing use of natural gas for producing green(er) iron will be the transitional scenario. Motivated regions with abundant natural gas, such as the Middle East, will emerge as front runners in new green iron production.

3. China is rapidly developing its green iron production capacity with over 10 projects currently being developed.

4. The supply of iron ore feed in the form of Direct Reduction Pellet Feed (DRPF), currently rare and with little or no merchant trade, will become a key enabler for new green iron production. The forecast supply/demand gap is expected to generate significant premiums for DRPF between now and 2050 as green iron production capacity comes on stream. MGT's Razorback Project is one of only a handful of projects globally that can produce DRPF at scale.

5. Regions that have both abundant magnetite resources, from which DRPF can be produced, and abundant renewable energy, from which green hydrogen can be produced, will emerge as major green iron producing hubs in the medium to long term. South Australia is in this category and the state government is aligning its policies and strategies to take advantage of the economic opportunity.
6. The continued global adoption of carbon taxes and carbon border protection mechanisms, already initiated in Europe, along with increasing customer willingness to pay premiums for 'green' steel products, are key drivers for steelmakers to accelerate the decarbonisation scenarios described above.

Considering this assessment, Magnetite Mines is positioning the Razorback Project to commence operations initially as a producer of 5Mtpa of DRPF for export, expandable to 10Mtpa as demand increases. The Company also sees the potential for the development of green iron hubs in South Australia at locations such as Whyalla and Port Pirie and is establishing stakeholder relationships accordingly.

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## RAZORBACK IRON ORE PROJECT

### Strategic Partnering

Recognising the increasing urgency from steelmakers seeking to secure future green iron supply, and therefore DRPF supply, the Company has prioritised engagement and relationship development with high-quality industry and strategic partners throughout the year.

MGT is openly seeking engagement with partners that are willing to both invest at an early stage, including to support funding to complete a Definitive Feasibility Study (DFS), as well as to become long-term joint venture and offtake partners.

Motivated Japanese industry players were identified early on as a natural source of project partners and MGT has developed relationships with the major Japanese steelmaking and trading groups, all of which are seeking to position themselves with future green iron supply.

Following a series of successful meetings at the Australian Japan Business Co-operation Committee (AJBCC) conference in Melbourne in October, MGT representatives travelled to Tokyo in late November seeking indicative proposals. Discussions resulting from these meetings are ongoing with several motivated groups.

MGT has also recognised the emergence of the Middle East as a key potential customer base for DRPF in the near-term with green iron projects planned in UAE, Oman, Bahrain and Saudi Arabia, many in collaboration with Japanese and other Asian steelmakers. These countries recognise the opportunity that green iron and steel production present as they transition away from oil dependency and are acting accordingly.

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*Figure 2. Magnetite Mines' executive team at the AJBCC conference, Melbourne - Oct 8-10, 2023*

MGT management travelled to Saudi Arabia in early January for a series of meetings and to attend the Future Metals Forum in Riyadh, now one the largest and most important resources gatherings globally.

*Figure 3. Magnetite Mines exhibited at the Future Minerals Forum, Riyadh – Jan 9-11, 2024*

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### MoU with Pacific Partnerships

Magnetite Mines signed a non-binding Memorandum of Understanding with Pacific Partnerships, a subsidiary of CIMIC Group, on 14 November 2023[4]. The purpose of the MoU is to support the development, and potentially financing, of the Razorback Iron Ore Project. The MoU will also establish a foundation for Early Contractor Involvement (ECI).

The MoU contemplates a consortium-based approach to the development of green iron hubs in the Upper Spencer Gulf in line with emerging South Australian Government strategy.

### Partnering with the Ngadjuri Nation

Magnetite Mines signed the historic "Walking Together – One Team" Partnering Agreement with the Ngadjuri Nation Aboriginal Corporation, the Native Title owner of the land hosting the Razorback Iron Ore Project[3]. The seminal agreement, the result of two years of relationship-building, aims to establish a long-term, respectful, and collaborative partnership. The Ngadjuri Nation Chairperson, Carlo Sansbury, emphasised the importance of trust, respect, and transparency in the relationship.

The Partnering Agreement aligns with Magnetite Mines' approach to sustainable development and commits both parties to cooperate on matters related to the development of the Razorback and Iron Peak mines, supporting infrastructure, future mines, exploration, land management, and economic and social development within Ngadjuri Country. The signing ceremony took place on Ngadjuri Country on December 20, 2023, attended by Magnetite Mines' staff, Ngadjuri Nation Board Directors, community members, and government officials.

*Figure 4. Ngadjuri Nation Aboriginal Council and Magnetite Mines Limited Partnering Statement*

The value of the agreement is significant, providing a framework for a long-term collaborative relationship and serving as the foundation for all activities related to mine development. It embodies a

structured approach to regulatory and cultural matters, including Native Title, heritage, education, economic development, and participation outcomes. The agreement recognises spiritual and cultural connections to Country and focuses on creating a sustainable future across economic, social, cultural, and environmental pathways.

Work has now commenced to implement programs under the agreement's guiding principles, including the negotiation of an Indigenous Land Use Agreement (ILUA), further characterisation of the Razorback Project's cultural heritage environment, and the development of a Cultural Heritage Management Plan. The partners will also explore participation programs related to employment, cultural heritage management, and land management during the first half of 2024 with the aim of establishing enduring benefits for both project partners.

### Environmental and Development Approvals

Priority work during the period has been developing the Company's submission of the primary development application, the Mining Lease Proposal (MLP), for the Razorback Project, with a target submission date of 31 March 2024.

Preliminary reports for five of the six impact studies required for the MLP submission have been received, with the remaining study report expected in early February 2024. This progress, along with extensive cross-Government consultation, has supported the rapid development of the MLP documentation.

Engagement activities in support of the MLP preparation have focused on local government, landowner and general community stakeholders, with '*f**ore**sight*' One-to-One Meeting programs held in October and November 2023.

<u>Commonwealth approvals (EPBC Act)</u>

The Company has continued to streamline and de-risk its environmental and development approvals programs and has largely finalised a project referral under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). In response to new threatened species listings by the Commonwealth Department for Climate Change, Energy, the Environment and Water in 2023, Magnetite Mines elected to engage Eco Logical Australia to assess whether project activities could impact a matter protected by the EPBC Act.

The referral, to be submitted in January 2024, will formally determine if project activities are controlled for the purposes of the EPBC Act. If so, it is anticipated that the South Australian Government's MLP assessment program will be accredited to assess these matters on the Commonwealth Government's behalf, thus maintaining a singular primary approvals process for the Razorback Project.

### Land Access Agreements

Land access negotiations for the mine, haulage and transmission line developments progressed in accordance with timeframes agreed with landholders. Extensive meetings and site visits with relevant landholders were held during the quarter and the Company is now in a position to make access offers in early 2024.

### Value Engineering

Value Engineering studies continued with the objectives of identifying significant project cost-savings and validation of logistics and infrastructure options, as well as locking down Project scope prior to final

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Definitive Feasibility Studies. Significant progress on key Value Engineering work streams, including water supply, power supply and metallurgical optimisation were made during the period.

### Water supply

The Company has decided to prioritise the 'Coastal' water supply option, involving pumping water from the Spencer Gulf, one of three options being assessed for water supply to the Razorback Project site[1,2,6]. The choice has been made largely based on risk and the magnitude of required supply over the Project life, including expansion. With an unlimited water source, the Coastal option offers the lowest risk pathway to supplying long-term, consistent supply relative to other options considered.

Key Assumptions

The Coastal water supply option will utilise a buried pipeline from an Upper Spencer Gulf intake location near the city of Port Pirie to the Project site. Preliminary design assumptions include the use of existing road infrastructure easements and corridors for pipeline routing, as well as the Company's haulage corridor.

Base Case Project configurations have assumed the use of fresh water for ore processing with supply delivered from a dedicated desalination plant. Located at the coast, the desalination plant will treat sea water from the Spencer Gulf, with treated water pumped 195km to the mine site.

Saline water ore processing opportunity

As an alternative to fresh water supply and associated desalination costs, the Company is assessing the application of saline water for use in ore processing (see Metallurgical Studies below). If successful, the use of saline water will significantly reduce Project capital and operating costs and associated permitting complexity by removing the requirement for a desalination plant at the coast.

Alternative options

Economic analysis has demonstrated that the Coastal option ranks equivalently with other options considered, including the Murray Basin wastewater offtake option previously announced by the Company. The Company notes that while the Coastal option is now being pursued as the preferred water supply option, MGT continues to progress discussions with the South Australian Government under its exclusive negotiation rights to source water via the Murray Basin wastewater option as a contingency scenario while the Coastal option's viability is being fully assessed.

Next steps

Engineering consultants GHD have been commissioned to complete a location study for the Coastal water intake and desalination locations. A multi-criteria analysis will be utilised to identify preferred coastal site location and integration with the final pipeline alignment.

The Company is also seeking expressions of interest from specialist pipeline engineering firms for the delivery of an AACE Class 3 or equivalent (DFS-level) technical solution for the water pipeline and associated desalination plant.

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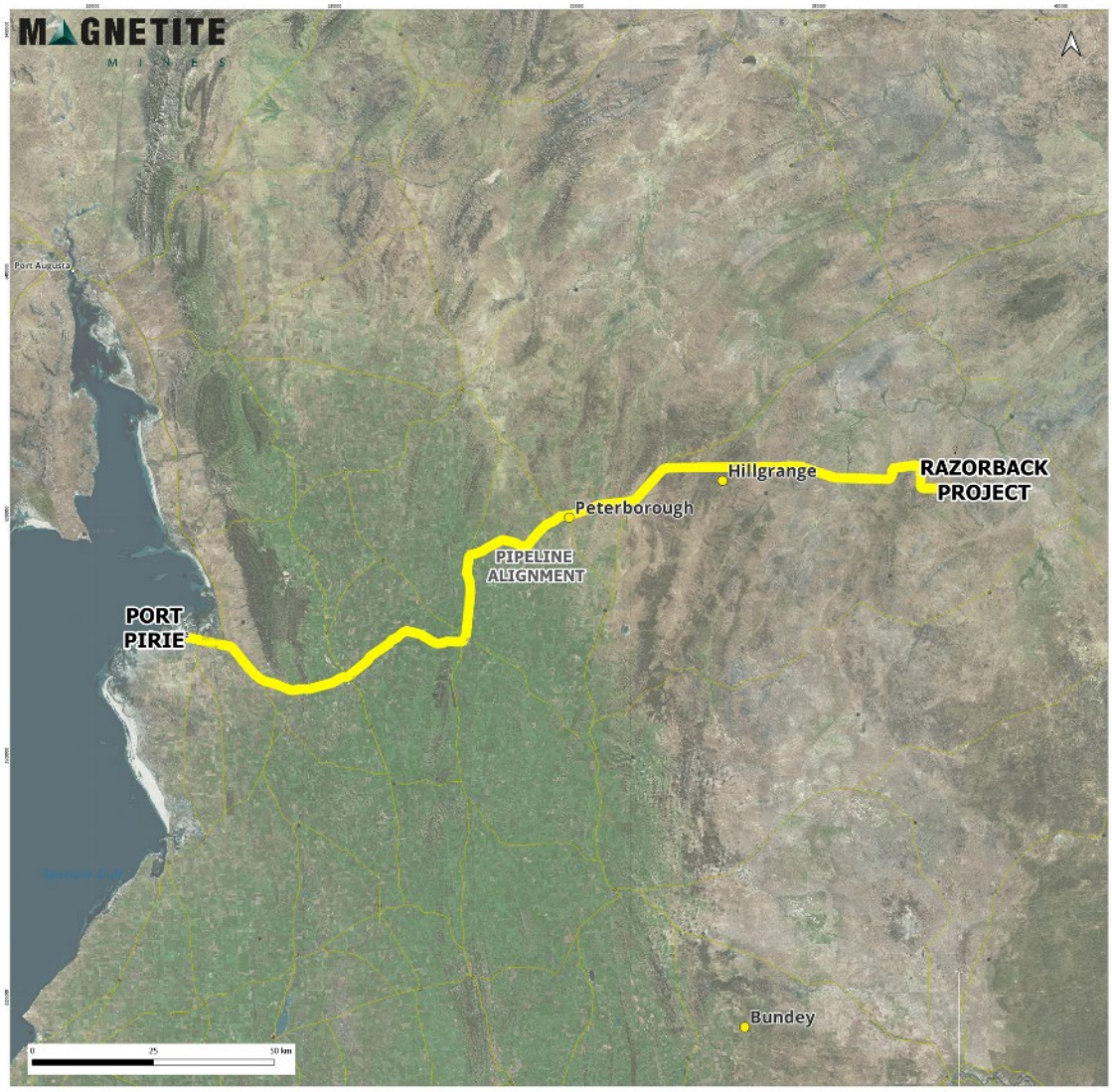


*Figure 5. Proposed 'Coastal' water supply option pipeline alignment*

## Power Supply

During the period, the Company commissioned a connections options report (COR) to be completed by the State's electrical transmission grid operator, ElectraNet. The objectives of the COR were to assess potential electrical power offtake within South Australia to deliver the 140-150MW required for a 5Mtpa operation at Razorback.

The outcomes of the COR were delivered in December 2023 and confirmed the Bundey substation as the preferred offtake point. The outcomes confirm the findings made during the Optimisation Study phase with a minor difference in transmission line design, utilising a double strung, 75MW 275kV transmission line to deliver 150MW[10].

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*Figure 6. Bundey Substation under construction, near Robertstown SA.*

Magnetite Mines continued its advocacy in support of ElectraNet's proposed Mid North Expansion (Northern) project, a conceptual plan to significantly expand South Australia's backbone transmission capacity from Bundey Substation to Cultana (near Whyalla) via Yunta. Such a project would provide new high-reliability grid connection options to the Braemar iron region. The December 2024 release of the Australian Energy Market Operator's draft 2024 Integrated System Plan confirmed that the Mid North Expansion (Northern) project was not proposed as an actionable project for the forward period.

The Company continues to engage with ElectraNet and supports its advocacy for additional transmission infrastructure developments in the Mid North of South Australia; Magnetite Mines participated in an industry roundtable in late 2023 in this regard, which was also attended by senior Government representatives.

## Metallurgical Studies

Flow sheet optimisation and metallurgical testwork continued during the quarter with a summary of the objectives and outputs to date is presented below.

Saline water processing assessment

The Project's Base Case configuration assumes the use of fresh water for all ore processing with a desalination plant located at the water supply intake point.

The aim of the saline water testwork program is to assess the use of saline water for ore processing and the impact on product recovery and grade. Water samples from both Coastal and Murray Wastewater supply options are being tested. Unlike the fresh water supply scenarios, requiring desalination at source, saline water supply requires little to no treatment. Accordingly, if the use of saline water can be successfully demonstrated then there is potential to remove desalination at source, reducing capital costs, operating costs and permitting complexity.

The Razorback process flow sheet utilises water for wet magnetic separation, fine grinding and silica flotation. Of these unit processes, flotation is particularly sensitive to water quality. Flotation utilises a suite of reagents to effect the separation of minerals, in this case silica from magnetite concentrates, and the current test work program is assessing alternative reagent recipes to optimise performance in the saline environment.

Flotation of other minerals in saline water is not uncommon in arid regions and is it anticipated that the use of saline water for silica flotation from a magnetite concentrate may be achievable with an optimised flotation reagent recipe. Previous testwork, using a standard flotation reagent regime, found that improvements in iron recoveries were achievable using saline water, however silica was not fully removed from the concentrate, decreasing the final concentrate grade.

Working with reagent manufacturers, the Company is conducting a series of tests at Bureau Veritas laboratories in Adelaide to determine the optimal reagent recipe for flotation, with results expected in the current quarter.

Product grade assessment

Previous test work and flow sheet has found that the Razorback Project's deposits are capable of producing a very high-quality concentrate with high iron content (+68.5% Fe) and low levels of impurities (3.0 –3.6% silica plus alumina).

While material with this specification currently achieves pricing premiums well above the 62% Fe benchmark pricing index, the Company is targeting the emerging Direct Reduced Iron Pellet Feed (DRPF) market, increasingly sought after for decarbonised steelmaking (see Green Steel Transition section). To be attractive to DRPF customers, concentrates with less than 2.5% silica plus alumina are required, an extremely high specification, rare in the current market and expected to attract increasing premiums as forecast demand increases.

Accordingly, the Company is assessing the Project's ability to produce premium DRPF grade concentrates with less than 2.5% silica plus alumina. This may be achieved by additional grinding to better liberate the magnetite from gangue (waste) particles. A range of grind sizes will be assessed along with any impacts on equipment requirements. Finer grinding requires additional energy, increasing costs, and economic analysis will be completed to confirm the viability of any processing configuration changes required to consistently achieve DRPF production. Work is underway and results will be announced as they come to hand over the coming months[11,12].

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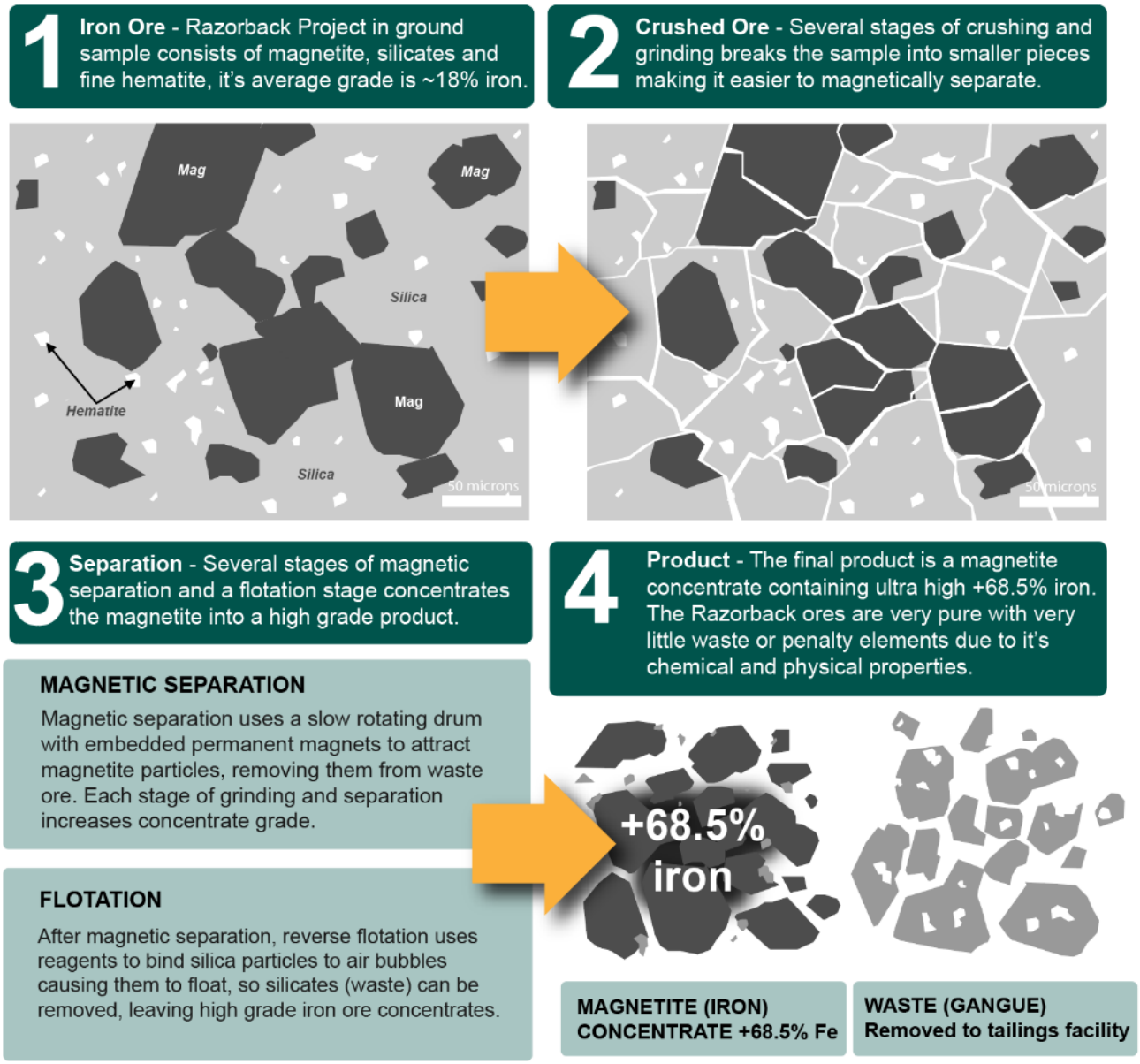


*Figure 7. Simplified description of Razorback magnetite liberation and processing into a concentrate*

## CORPORATE

### Capital raise completed

In November, the Company successfully completed a renounceable rights offer raising $6.5M (before costs)[13]. The amount raised was above the $6.2M (before costs) target and was sourced from both existing and new shareholders via the issuance of 21,666,649 ordinary shares at an issue price of $0.30 per share.

For every two new shares subscribed, applicants also received 1 free attaching option exercisable at $0.45 and expiring 18 months from issuance. A total of 10,833,188 options were issued, which are listed and able to be traded on the ASX platform under the code MGTO.

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## Annual General Meeting (AGM) – all resolutions passed

On 23 November 2023, the Company held its AGM at the Adelaide Town Hall and virtually through the Computershare Meeting Platform[14]. Shareholders voted in favour of all the resolutions at the meeting:

1. Adoption of the Remuneration Report
2. Election of Dr. Carmen Letton as Non-Executive Director
3. Approval of the issue of CEO Performance Rights and Options
4. Approval of an additional 10% placement capacity

## Investor Relations

The Company is accommodating an increased level of interest from potential strategic partners, project financiers and institutional investors that are aligned with the green iron & steel transition and associated ESG focus.

During the quarter, the Company participated in the following investor and industry events:

- Australian-Japan Business Co-operation Committee (AJBCC) Conference, Melbourne– Oct 8-10, 2023
- International Mining and Resources Conference (IMARC), Sydney – Oct 31, 2023
- Japan Steel Industry Roadshow – Nov 27-Dec 2, 2023

*Figure 8. CEO Tim Dobson presenting at the International Mining & Resources Conference (IMARC), Sydney – Oct 31, 2023*

Subsequent to the quarter, the Company exhibited at the Future Minerals Forum in Riyadh (Jan 9-11, 2024) as part of a Saudi Arabia Steel Roadshow (Jan 7-14, 2024).

### Mintech Redeemable Convertible Note repaid

As announced on 23 August 2023 and 13 November 2023, Magnetite Mines entered into a written agreement with the liquidator of Mintech Resources Pty Ltd (in liquidation) (Mintech) to amend the terms of the redeemable convertible notes (Notes), extending the maturity date of the Notes by seven months from 31 August 2023 to 31 March 2024[15].

The Notes were originally issued to Mintech on 31 August 2015 following a renegotiation of the terms of a tenement sale agreement between the Company and Mintech for the acquisition by the Company of the Razorback Project (see announcements to ASX on 11 August 2015, 31 August 2015 and 4 September 2019).

On 6 December 2023, the Company settled the entire value of the Loan Note, including both the principal amount of $1.975 million and accrued interest of $51,945, to Mintech.

### Appointment of Joint Company Secretary

On 30 October 2023, Mr. Simon Smith was appointed as Joint Company Secretary, alongside Ms Inthu Siva[16]. Mr Smith is a highly accomplished CFO and Company Secretary with extensive experience in both ASX and TSX listed companies and was appointed as Chief Financial Officer on 4 September 2023.

### Retirement of Mark Eames, Non-executive Director

On 23 November 2023, Mr Mark Eames stepped down as Chair and Non-executive Director[17]. The Board wishes to express its sincere appreciation to Mr Eames for his valuable contribution to the Board during his tenure as both Director and Chair. Mr. Eames will provide ongoing support to the Company in his capacity as a technical consultant.

### Cash position

At 31 December 2023, the Company had $4.3 million in cash and cash equivalents at its disposal. Quarterly exploration and evaluation cash flows increased from $0.73 million in the September quarter to $1.29 million in the December quarter.

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## EXPLORATION & EVALUATION EXPENDITURE

The Company continued its exploration activities during the quarter. In addition to general study-related overheads covering staff salaries and site visits, expenditure was related to the following activities:

- General exploration expenditure as related tenement administration
- Environmental field programs including ecology impact assessment and groundwater studies
- Permitting and approvals related consultation
- Negotiation of a partnering agreement with the Ngadjuri Nation (native title claimant group)

No exploration drilling activities occurred during the quarter. Rehabilitation for previous drilling activities and statutory reporting proceeded in line with SA Department of Mines & Energy requirements.

### Mine production and development expenditure

The Company is currently in the pre-development stage with no active mining production. As a result, no expenditures were recorded in the quarter related to production or development activities.

The Company prioritised engagement with relevant departments of the South Australian Government. This included the Department of Energy & Mining, Department of Infrastructure & Transport, Department of Trade & Investment, Department of Treasury & Finance, and the Department of Environment & Water. This proactive approach seeks to establish a shared vision and set the groundwork for collaborative efforts between State, Federal, and international governments in the areas of energy and industry transition.

The Company maintained its active role in formal consultation processes with the South Australian Government, including the provision of advice into the development of its Green Steel and Iron Strategy and the State Infrastructure Strategy.

## Tenement holdings

The following tenements were held by Magnetite Mines Limited (and its controlled entities) as of 31 December 2023:

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| Tenement/ Project Name | Tenement Number | Interest at Beginning of Quarter | Interest at End of Quarter | Acquired during the Quarter | Disposed of during the Quarter | Joint Venture Partner/Farm -In Party |
|---|---|---|---|---|---|---|
| **SOUTH AUSTRALIA** | | | | | | |
| PUALCO | EL 6126 | 100% | 100% | - | - | - |
| RED DRAGON | EL 6127 | 100% | 100% | - | - | - |
| RAZORBACK RIDGE | EL 6353 | 100% | 100% | - | - | - |
| DRAGON'S TAIL | EL 5902 | 100% | 100% | - | - | - |
| SISTER'S DAM | EL 6037 | 100% | 100% | - | - | - |
| BRAEMAR | EL 6788 | 100% | 100% | - | - | - |
| LIPSON | EL 6745 | 100% | 100% | - | - | - |
| MANUNDA NORTH | EL 6878 | 100% | 100% | - | - | - |
| MUSTER DAM | EL 6746 | 100% | 100% | - | - | - |
| MUTOOROO RIDGE | EL 6877 | 100% | 100% | - | - | - |

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

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## ABOUT MAGNETITE MINES

Magnetite Mines Ltd is an ASX-listed iron ore company focused on the development of magnetite iron ore resources in the highly-prospective Braemar iron region of South Australia. The Company has a 100% owned Mineral Resource of 6 billion tonnes of iron ore and is developing the Razorback Iron Ore Project, located 240km from Adelaide, to meet accelerating market demand for premium iron ore products created by iron & steel sector decarbonisation, with the potential to produce high-value Direct

Reduction (DR) grade concentrates. Razorback is set to become a very long-life iron ore project with expansion optionality in a tier 1 jurisdiction that will produce a superior iron ore product sought by steelmakers globally. For more information visit magnetitemines.com.

## DISCLOSURE

Where the Company references previously disclosed exploration results, Mineral Resource and Ore Reserve estimates and ASX announcements made previously, it confirms that the relevant JORC Table 1 disclosures are included with them and that it is not aware of any new information or data that materially affects the information included in those ASX announcements and in the case of Mineral Resources and Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the announcements continue to apply and have not materially changed.

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## References

1. ASX:MGT Announcement – 01/09/2023 - Razorback Iron Ore Project Update
2. ASX:MGT Announcement - 27/09/2023 - Water Supply Exclusive Negotiation Rights Secured
3. ASX:MGT Announcement – 21/12/2023 - Historic Partnering agreement signed with Ngadjuri Nation
4. ASX:MGT Announcement – 14/11/2023 - MOU signed with CIMIC's Pacific Partnerships
5. ASX:MGT Announcement – 30/10/2023 - Quarterly Activities Report
6. ASX:MGT Announcement – 23/11/2023 - Chair & CEO AGM Presentation
7. How decarbonisation is transforming the iron and steel industry, Wood Mackenzie, October 2023
8. The Path to Green Steel, Pursuing Zero-Carbon Steelmaking in Japan, Renewable Energy Institute, Feb 2023
9. 15 Insights on the Global Steel Transformation, Agora Industry, Jun 2023
10. ASX:MGT Announcement – 23/02/2023 - Renewable Grid Power For Razorback Project
11. Launch of spot 67.5% Fe magnetite-hematite iron ore pellet feed premium differential - Fastmarkets
12. ASX:MGT Announcement – 28/02/2023 -Metallurgy Confirms Flowsheet and DR Pellet Feed Potential
13. ASX:MGT Announcement – 22/11/2023 – Rights Issue Close over target, securing $6.5m
14. ASX:MGT Announcement – 23/11/2023 – Results of AGM
15. ASX:MGT Announcement – 13/11/2023 - Redeemable Convertible Notes update
16. ASX:MGT Announcement – 30/10/2023 – Appointment of Joint Company Secretary
17. ASX:MGT Announcement – 13/09/2023 – Appointment of new Chair