

ASX RELEASE

24 June 2024

POSITIVE ADVANCES WITH METAL RECOVERY TEST WORK & SIGNIFICANT NEW COMMERCIAL OPPORTUNITIES IDENTIFIED

Test work continues on all four waste streams and now includes lithium and REE ores.

HIGHLIGHTS:

Successful Testing of Flash Joule Heating (FJH) Technology:

- Prototype testing trials completed on Critical Metal recovery from coal fly ash (CFA) with highly encouraging results¹.
- Testing under way on e-waste & bauxite residue (red mud) from feedstock supplied in US.
- Upcoming testing scheduled on MTM's Pomme & East Laverton Rare Earth Elements (REEs) samples and Lithium (spodumene concentrate).

Expanding Commercial Applications and Addressing Industry Challenges:

- Potential for FJH to disrupt the **Minerals Processing industry** by improving economics & sustainability.
- Identified key challenges in Lithium and REE processing where **FJH technology could offer significant improvements**, including potential savings in energy, water/reagent usage, and carbon emissions.
- Discussions underway with **Leading Industrial Chemicals & Mining firms** for collaborative opportunities.

Rapid Advancement in R&D through Strategic Partnerships:

- Partnerships with two major research institutions to refine and optimise FJH technology (Rice University, Texas and Murdoch University, Western Australia).
- Accelerating the transition from prototype scale to commercial-scale ventures.
- Leading engineering firm KnightHawk using technical data to advance the design for a larger pilot FJH plant.

Strategic Grant Funding Applications with US Government:

- Initiated applications process targeting programs to secure the supply of Critical Minerals.
- Additional funding sought from various US government programs to support scaling and commercialisation.

MTM Critical Metals Limited (ASX:MTM) (MTM or the Company) is pleased to announce significant progress and promising developments in the application and commercialisation of the FJH technology.

Chairman, Mr John Hannaford said: "MTM is revolutionising how metals are recovered from ores and waste, achieving several strategic advancements this past quarter, including the completion and continuation of successful waste-to-metal recovery trials. We have also broadened the potential scope of FJH by identifying key industry challenges where it could deliver substantial benefits, including in Lithium and REE extraction, and other mineral processing applications. FJH's test work is investigating the potential applications of the technology can lead to savings in energy, water and reagent usage, carbon emissions and cost, seeking to address some of the most pressing issues faced in the industry today. Discussions are underway with firms to explore collaborative

¹ ASX announcement 6 May 2024.

opportunities. Coupled with a partnership with two leading universities and potential for applications to be made to access US government funding, MTM's aim is to significantly alter the landscape of critical metals extraction and processing. We look forward to updating the market with our continued progress".

Expanded Testing Program

MTM is pleased to announce the expansion of its testing program to include **lithium** and **REE** ores, with REE samples coming from MTM's own projects. This is in addition to MTM's ongoing tests on CFA, bauxite residues, e-waste, and spent lithium batteries. The diverse range of feedstocks highlights the broad applicability and versatility of FJH technology.

Dual Strategy for Commercialisation

Our commercialisation strategy is robust and two-fold:

1. **Metals Recovery from Waste Streams:** Targeting valuable sources such as CFA, bauxite residue, battery waste and e-waste. Material is being tested using the FJH technology to identify the potential for recovery of critical & precious metals from waste product sources that are otherwise considered to have little or no value or potentially pose an environmental problem eg: Red Mud² and Coal Fly Ash³.

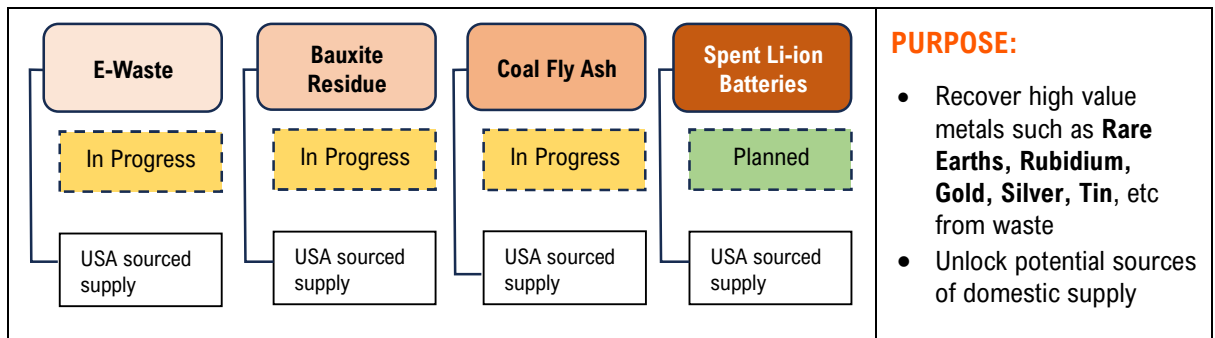


Figure 1. FJH metal recovery testing completed, in progress or planned from waste sources.

2. **Enhancing Mineral Processing Circuits:** Revolutionising the efficiency and effectiveness of mineral processing, such as for lithium and REE extraction, investigating its potential to make improvements in the use of energy, water, and reagents.

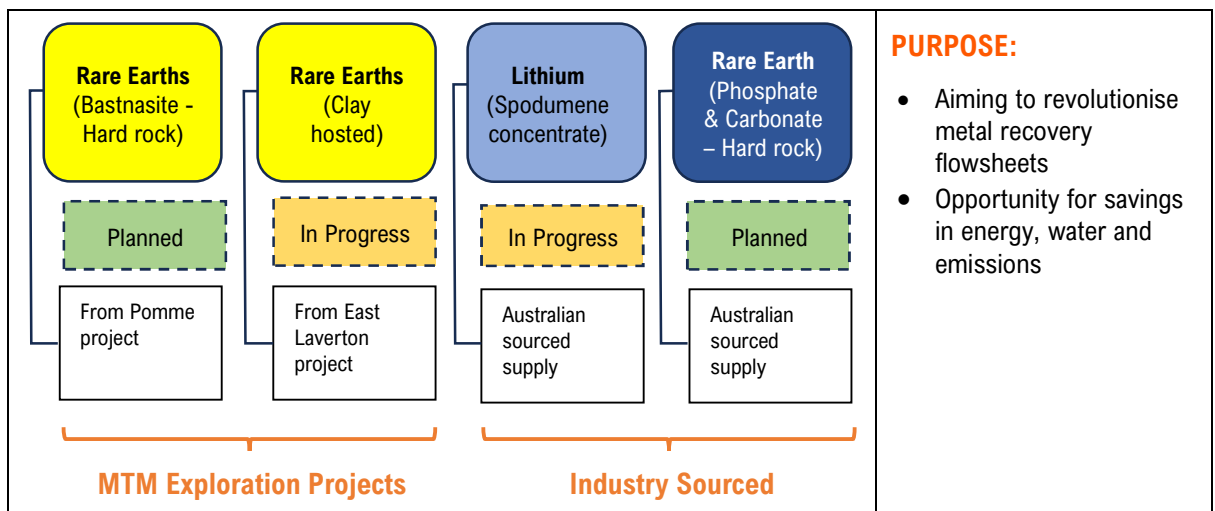


Figure 2. FJH metal recovery testing completed, in progress or planned from mineral processing.

² A review of the characterization and revegetation of bauxite residues (Red mud), Shengguo Xue et al, April 2015 (<https://pubmed.ncbi.nlm.nih.gov/25911289/>)

³ Fly ash toxicity, emerging issues and possible implications for its exploitation in agriculture; Indian scenario: A review, Hemlata P Jambhulkar et al, Srp 2018 (<https://pubmed.ncbi.nlm.nih.gov/30241077/>)

Step-Out Tests and Opportunities

Each test is carefully designed to assess:

- **What:** The metal recovery potential from specific feedstock.
- **Why:** The economic and environmental benefits of applying FJH.
- **Scope:** The broader implications for scaling up the technology.

Testing is being carried out across multiple evaluation criteria including metal recoveries, energy consumption and reagent usage. Some of the tests are being undertaken by third party laboratories to ensure a high level of rigour and independence to satisfy potential partners and customers of the opportunity that FJH may present.

Timing of Results

Initial results relating to FJH tests on coal fly ash were first provided by the Company on 6 May 2024. MTM anticipates that it will be in a position to report results from the various tests that are being carried out in the coming months, which will provide crucial technical and performance data, paving the way towards the establishment of a pilot scale FJH plant.

Strategic Collaborations & Partnerships

MTM is in discussions with leading industrial firms in both the US and Australia regarding potential collaboration. Additionally, we are exploring complementary technologies with Rice University in the US and have an ongoing engagement with leading research institutions in Australia, including Murdoch University, to accelerate the Company's development efforts.

Grant Applications

To further support MTM's innovative work, the Company is actively pursuing grant applications in the US, to provide additional, non-dilutive funding for its research and development initiatives. There is an incentive for all nations to address critical mineral supply chain issues⁴ but there are no guarantees that such grant funding applications will be successful or will be made available on terms which are acceptable to MTM.

Game-Changing Innovation

Flash Joule Heating technology has the potential to be a game-changer in the minerals processing industry with the potential to use the technology in future mineral processing flow sheets.

The process improvements have been demonstrated at lab scale which formed the basis for the patents which underly the technology and subsequent testing by the Company has expanded the potential commercial opportunities that FJH offers. MTM is committed to advancing the FJH technology and identifying commercial opportunities that leverage its innovative approach to metal recovery and processing.

Next Steps

By pursuing these next steps, MTM aims to cement its position as a leader in sustainable and cost-effective metal recovery and mineral processing, leveraging the transformative potential of FJH technology.

⁴ Critical Minerals Strategy 2023-2033, Australian Government, June 2023
(<https://www.industry.gov.au/sites/default/files/2023-06/critical-minerals-strategy-2023-2030.pdf>)

- **Progressive Release of Testing Results**
 - Publish detailed outcomes from FJH testing on various waste sources as they come to hand.
 - Share insights on improvements for minerals processing applications that are offered by FJH.
- **Collaborations with Mining and Chemical Companies**
 - Finalise partnerships with industrial firms.
 - Explore collaborative projects for integrating FJH technology into their processes.
 - Initiate pilot projects to demonstrate industrial applications and benefits.
- **Advancement of FJH Prototype Development and Scale-Up**
 - Continue development and optimisation of the FJH prototype.
 - Complete the design and specifications to build a ~1 tonne per day pilot plant.
 - Develop a roadmap for commercial-scale demonstration plants.
- **Strategic Partnerships and Funding**
 - Strengthen ongoing partnerships with major research institutions.
 - Secure grant funding from US and Australian to accelerate R&D and scale-up efforts.
- **Market Expansion and Commercialisation**
 - Identify new verticals and applications for FJH technology.
 - Work with industry to demonstrate applications for FJH technology to contribute to environmental improvements to mining waste deposits.
 - Develop a sustainable business model focused on recurring revenue from material processing.

About Flash Joule Heating

FJH is an advanced processing and recycling technology being developed to:

1. extract critical metals including REE, titanium, nickel, cobalt and lithium from waste material including lithium-ion batteries, e-waste, coal fly ash produced by coal-fired power stations or bauxite residue derived from alumina refining and other waste stockpiles; and
2. enhance mineral processing circuits by improving the efficiency and effectiveness of mineral processing, such as for lithium and REE extraction, investigating its potential to make improvements in the use of energy, water, and reagents.

The FJH technology is an electro-thermal process that involves the rapid and intense heating of material to both directly recover critical metals and make materials more amenable to metal recovery through conventional acid leaching methods.

MTM has recently executed a global licence agreement over the FJH technology patents with Rice University (see MTM ASX announcement dated 31 May 2024).

This announcement has been authorised for release by the Board of Directors.

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About MTM Critical Metals Limited

MTM Critical Metals Limited is an exploration company which is focused on searching for niobium (Nb) and rare earth elements (REE) in Western Australia and Québec. Additionally, the Company has acquired an option to exclusively negotiate the licencing rights to an early-stage processing technology for REE and precious metals known as Flash Joule Heating, which has been developed by researchers at Rice University, USA. MTM's West Arunta Nb-REE licences lie within one of Australia's critical metal exploration hotspots where over \$60m in exploration expenditure has been collectively invested in the district by a number of ASX companies including WA1 Resources Limited (ASX:WA1), Encounter Resources Limited (ASX:ENR), Rio Tinto Limited (JV with Tali Resources Pty Ltd) (ASX:RIO), CGN Resources Limited (ASX:CGR), and IGO Limited (ASX:IGO). The Company also holds tenements in other prolific and highly prospective mineral regions in Western Australia. The Mukinbudin Nb-REE Project comprises two exploration licences located 250km northeast of Perth in the South West Mineral Field of Western Australia. The East Laverton Projects is made up of a regionally extensive package of underexplored tenements prospective for REE, gold and base metals. The Mt Monger Gold Project comprises an area containing known gold deposits and occurrences in the Mt Monger area, located ~70km SE of Kalgoorlie and immediately adjacent to the Randalls gold mill operated by Silver Lake Resources Limited. In Québec, the Pomme Project is a known carbonatite intrusion that is enriched in REE and niobium and is considered to be an extremely prospective exploration target adjacent to a world class REE resource (Montviel deposit). The Company has an experienced Board and management team which is focused on discovery to increase value for shareholders.

About KnightHawk Engineering

KnightHawk was founded in 1991 and specializes in identifying high technology solutions in a short timeframe. They have executed projects throughout the United States, Europe, and Asia. Their clients range from individual entrepreneurs to the large industrial organisations such as Shell, Exxon Mobil, Chevron and NASA. They have a depth of experience and expertise and are leaders in design, failure analysis and troubleshooting across a range of engineering disciplines. KnightHawk was selected for its expertise across a wide range of disciplines and their focus on ensuring outcomes in a timely manner.

Previous Disclosure

The information in this announcement is based on the following MTM Critical Metals Limited ASX announcements, which are all available from the MTM Critical Metals Limited website www.mtmcriticalmetals.com.au and the ASX website www.asx.com.au.

Date	Description
3 April 2024	Flash Joule Heating Prototype Complete, Testing Commenced
6 May 2024	Flash Joule Heating Prototype Test Significantly Increases REE Recovery
31 May 2024	Global Licence Agreement Secured for Flash Joule Heating Technology with Rice University

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original ASX announcements and that all material assumptions and technical parameters underpinning the relevant ASX announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are represented have not been materially modified from the original ASX announcements.

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The figures, valuations, forecasts, estimates, opinions and projections contained herein involve elements of subjective judgment and analysis and assumption. MTM Critical Metals does not accept any liability in relation to any such matters, or to inform the Recipient of any matter arising or coming to the company's notice after the date of this document which may affect any matter referred to herein. Any opinions expressed in this material are subject to change without notice, including as a result of using different assumptions and criteria. This document may contain forward-looking statements. Forward-looking statements are often, but not always, identified by the use of words such as "seek", "anticipate", "believe", "plan", "expect", and "intend" and statements than an event or result "may", "will", "should", "could", or "might" occur or be achieved and other similar expressions. Forward-looking information is subject to business, legal and economic risks and uncertainties and other factors that could cause actual results to differ materially from those contained in forward-looking statements. Such factors include, among other things, risks relating to property interests, the global economic climate, commodity prices, sovereign and legal risks, and environmental risks. Forward-looking statements are based upon estimates and opinions at the date the statements are made. MTM Critical Metals undertakes no obligation to update these forward-looking statements for events or circumstances that occur subsequent to such dates or to update or keep current any of the information contained herein. The Recipient should not place undue reliance upon forward-looking statements. Any estimates or projections as to events that may occur in the future (including projections of revenue, expense, net income and performance) are based upon the best judgment of MTM Critical Metals from information available as of the date of this document. There is no guarantee that any of these estimates or projections will be achieved. Actual results will vary from the projections and such variations may be material. Nothing contained herein is, or shall be relied upon as, a promise or representation as to the past or future. MTM Critical Metals, its affiliates, directors, employees and/or agents expressly disclaim any and all liability relating or resulting from the use of all or any part of this document or any of the information contained herein.