



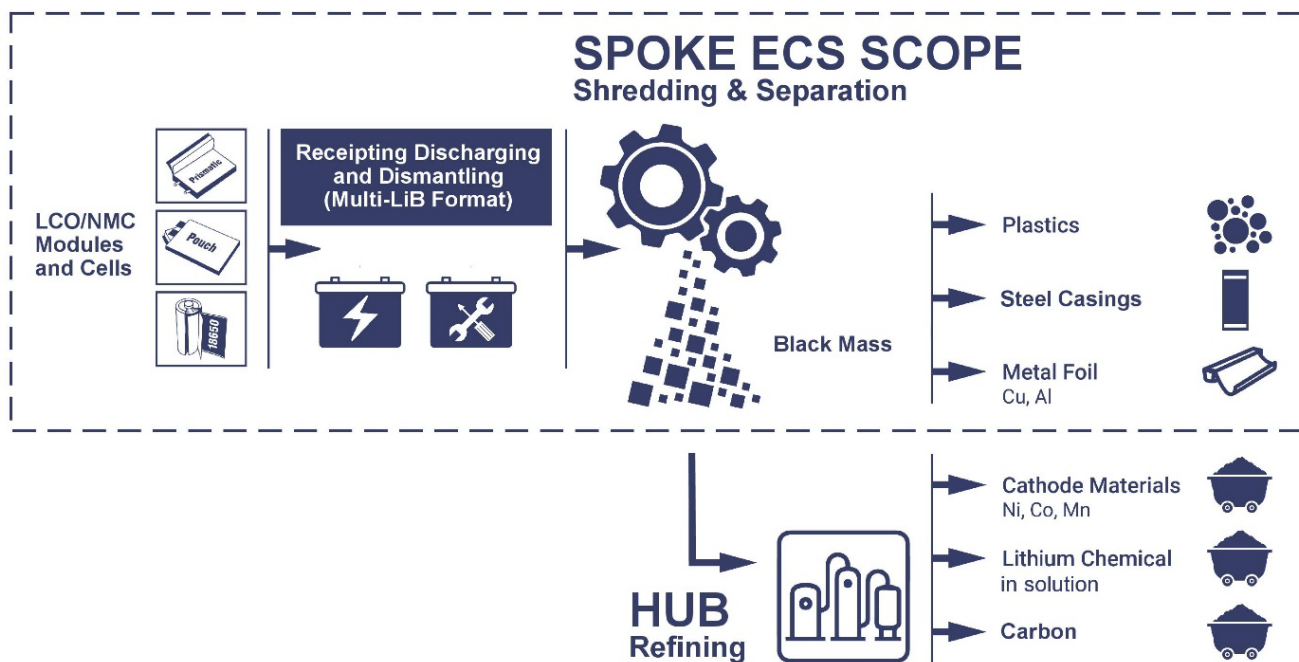
## PRIMOBIUS – ENGINEERING COST STUDY FOR FIRST STAGE OF 50 TPD RECYCLING PLANT

### HIGHLIGHTS

- Completion of Primobius’ Engineering Cost Study for the first stage shredding plant (“Spoke”) of a potential 50 tpd integrated lithium-ion battery recycling operation on a greenfields site in Germany;
- New design includes a European-first integrated discharging and disassembly operation to enable processing of larger modules from warranty returns and end-of-life electric vehicles (“EV”) in addition to cell production scrap;
- Operating cost estimate of US\$1,400 per tonne of feed (assumed mix 70% modules: 30% cells);
- Capital cost estimate of US\$103.9M (including 20% contingency) includes land, buildings, plant and equipment, installation, infrastructure, pre-production and owner’s costs (including EPC); and
- The Engineering Cost Study for the second-stage hydrometallurgical refinery (“Hub”) is due in Dec 2022.

Emerging sustainable battery materials producer, Neometals Ltd (ASX: NMT) (“Neometals” or “the Company”), is pleased to announce that Primobius GmbH (“Primobius”), the joint venture company owned 50:50 by Neometals and SMS group GmbH (“SMS group”), has finalised its internal Engineering Cost Study (“ECS”) (+30%,-10% accuracy) for a first-stage shredding Spoke of a potential greenfields lithium-ion battery (“LIB”) recycling operation in an existing industrial park in Germany.

Figure 1: Primobius’ integrated LIB recycling process with Spoke ECS scope highlighted by dashed line



The ECS is being delivered in two parts comprising (1) a shredding Spoke and (2) a hydrometallurgical refinery Hub, co-located at a greenfields industrial park site in Germany. The ECS, upon completion in December 2022, will allow the evaluation of a completely integrated Spoke and Hub operation. The timing and staged delivery of the studies allows Primobius’ to prioritise the offer of commercial plant supply agreements for a 10tpd Spoke to Mercedes-Benz and 50tpd Spoke to Stelco Holdings Inc (“Stelco”). Commercial plant supply agreements for respective refinery Hub’s for both parties are expected in 2023. The staged delivery model also enables the production and sale of intermediate mixed nickel/cobalt product (“Black Mass”) from Spokes during the construction and commissioning of refinery Hubs.

The Spoke ECS has been completed to a +30%/-10% level of accuracy compared to the previous ±35% used in the earlier AACE® Class 4 ECS for an integrated LIB recycling operation (see Neometals announcement titled “Primobius Recycling JV – Operating and Capital Cost Estimates” dated 7<sup>th</sup> May 2021). Capital and Operating cost estimates are denominated in US\$ using an exchange rate of 1 Euro: 1 US\$. A summary of other key assumptions and outputs are set out in the table below.

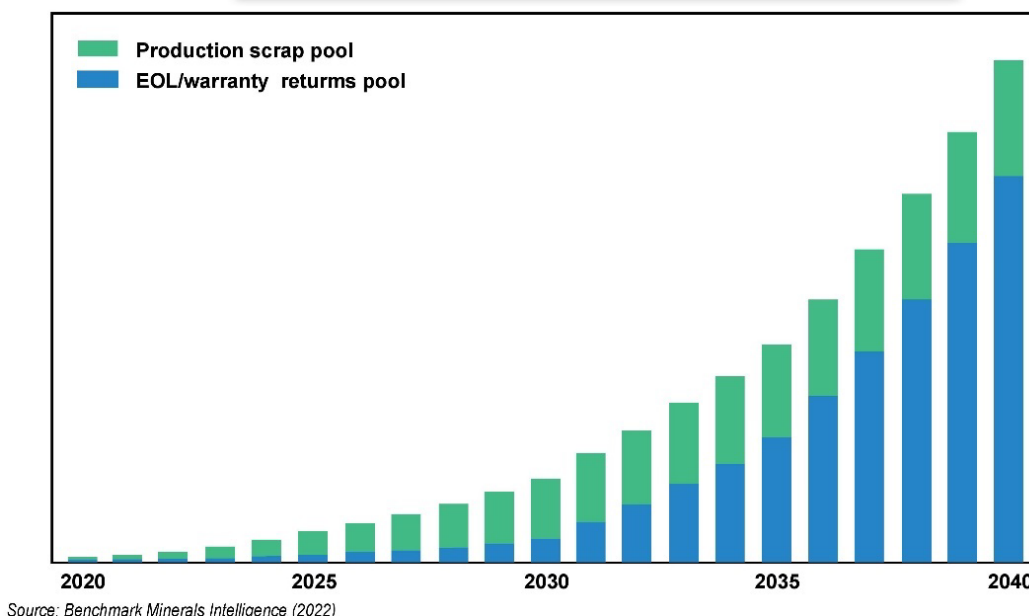
**Table 1 – Key Spoke’ ECS Assumptions and Outputs**

Item	Assumption/Output
Annual Throughput (Feed)	21,000 tpa, comprising 70% modules and 30% individual cells (containing 8,340 t of Black Mass)
Annual Production (Black Mass)	7,130 tpa
Operating Cost per tonne of feed	US\$1,400/t
Capital Costs (incl 20% contingency)	US\$103.9 M

The Spoke ECS design and mass-energy balance has been informed by extensive demonstration trials and actual performance of Primobius’ commercial 10tpd Spoke plant at Hilchenbach, Germany (“Hilchenbach Spoke”).

The increase in capital and operating costs in the Spoke ECS relative to the Class 4 Integrated ECS is primarily due to the inclusion of an extensive LIB module storage, discharge and disassembly operation to enable the processing of larger modules arising from end-of-life (“EOL”) EV’s. This reflects both Primobius commitment to future-proofing its product offering for EV carmakers and the current LIB feedstock mix being received at our Hilchenbach Spoke operation. The previous Class 4 ECS assumed 100% individual cell feed from production scrap. Typical steady-state scrap rates for leading cellmakers is around 10% and in future will provide a decreasing percentage of the total addressable market opportunity.

**Figure 2: Global recycling pool by source, GWh**



**Neometals’ Managing Director Chris Reed said:**

“The Spoke ECS allows us to better assess and control the costs of constructing and operating Europe’s largest battery recycling plant that is purpose built to take the larger battery modules arising from EV’s. The addition of a large manual discharging and disassembly operation for modules comes at a cost, that is outweighed by access to a larger market in the medium to long-term. It is also worth noting that we currently get paid to process modules whereas many American recyclers compete to buy purchase individual cells.

The Primobius team is now focussed on the delivery of the Hub ECS and offering plant supply agreements to Mercedes-Benz and Stelco in December this year. The Hub ECS is key to Primobius’ consideration to exercise its option to acquire up to 50% equity in the Stelco LIB recycling business in North America, which represents a significant opportunity.

Our proprietary refining Hub is the largest value generator for Primobius and its customers. The Hub processes Black Mass into high-purity and higher-value battery materials which can be used in production of new batteries. Integrated recycling closes the loop, reducing the carbon footprint of new cells using recycled feedstocks and complies with pending EU regulatory requirements to use minimum levels of recycled content in the new lithium-ion batteries.”

**CAUTIONARY STATEMENT**

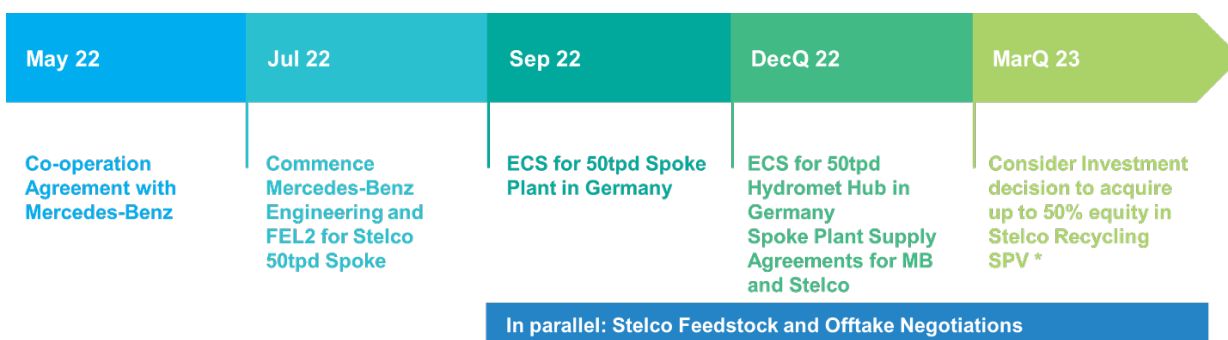
The Spoke ECS referred to in this announcement has been undertaken to assess the potential technical feasibility and economic viability of stand-alone shredding and beneficiation LIB recycling operations and to provide baseline financial metrics to consider future investment decisions for integrated Spoke and Hub recycling plant deployments globally. It is based on low-level technical and economic assessments that are not sufficient to provide definitive assurance of an economic development case, or to provide certainty that the conclusions of the ECS will be realised. Finalisation of the Hub ECS and further evaluation work will be required before Neometals will be in a position to determine the viability of future recycling plant deployments and accurately define the business growth potential/trajectory of Primobius.

Given the uncertainties involved, all figures, costs, estimates quoted are approximate values and within the margin of error range expressed in the relevant sections throughout this announcement. Investors should not make any investment decisions based solely on the results of the Spoke ECS.

**Next Steps**

As described above, Primobius’ next step is to complete the 50 tpd Hub ECS which will enable the evaluation of a fully integrated shredding and refining operation, initially in North America with Stelco and potentially later in Germany. This combined with Stelco’s detailed engineering studies to integrate a Primobius plant into existing buildings and infrastructure at its Hamilton Steel works, will form the basis for the consideration of an investment decision by Primobius to acquire up to 50% equity in Stelco’s battery recycling business. The Spoke’ ECS has highlighted opportunities to automate and optimise our shredding ‘Spoke’ circuit which will be progressed, and the integrated ECS will also provide a basis for current and potential partners in the business development pipeline to consider investment decisions.

**Figure 3:** Indicative Project Timeline

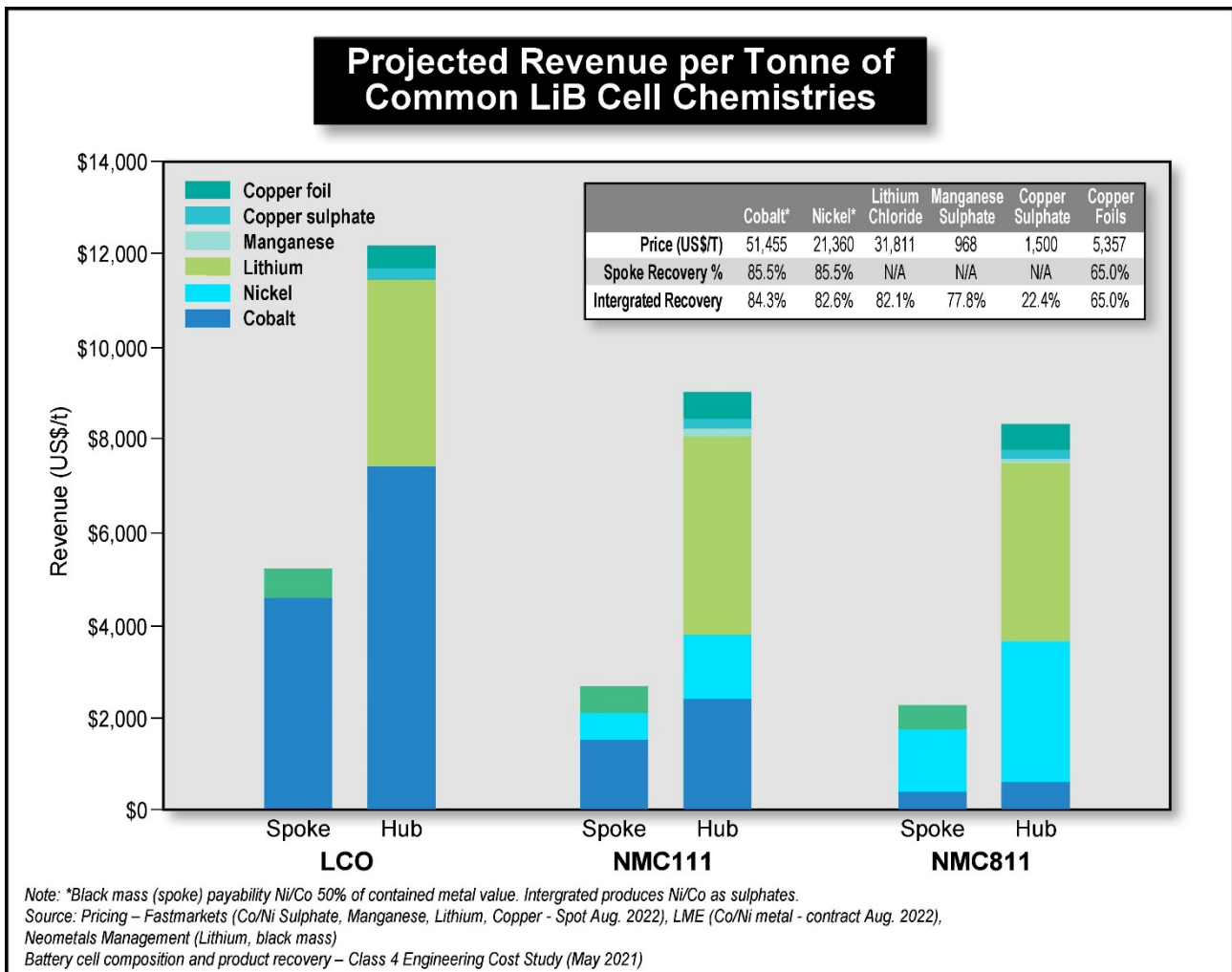


\*Subject to Board Approval and Primobius Board Approvals

Figure 4 – Primobius’ Core Project Pipeline

	 Battery recycling without limits 10tpd Spoke	 10tpd Integrated	 The Steel Company of Canada 50tpd Integrated	 Battery recycling without limits 50tpd Integrated
Plant Type	Shredding	Shredding/Refining	Shredding/Refining	Shredding/Refining
Product/s	Black Mass	Black Mass & BGMS <sup>(1)</sup>	Black Mass & BGMS <sup>(1)</sup>	Black Mass & BGMS <sup>(1)</sup>
Status	Operational	Front End Engineering FEL 1	Front End Engineering FEL 2 (Shredder)	Class 3 Engineering Cost Study
Location/s	Hilchenbach Germany	Kuppenheim Germany	Hamilton Works Canada	Kaiserslautern Germany
Business Model	Principal	Limited Royalty-Free R&D License	License & JV Option	Principal/JV

Figure 5 – Projected recovered revenue per tonne of common battery feedstock chemistries showing Spoke only operation against the integrated Hub, highlighting the value addition from further downstream processing.

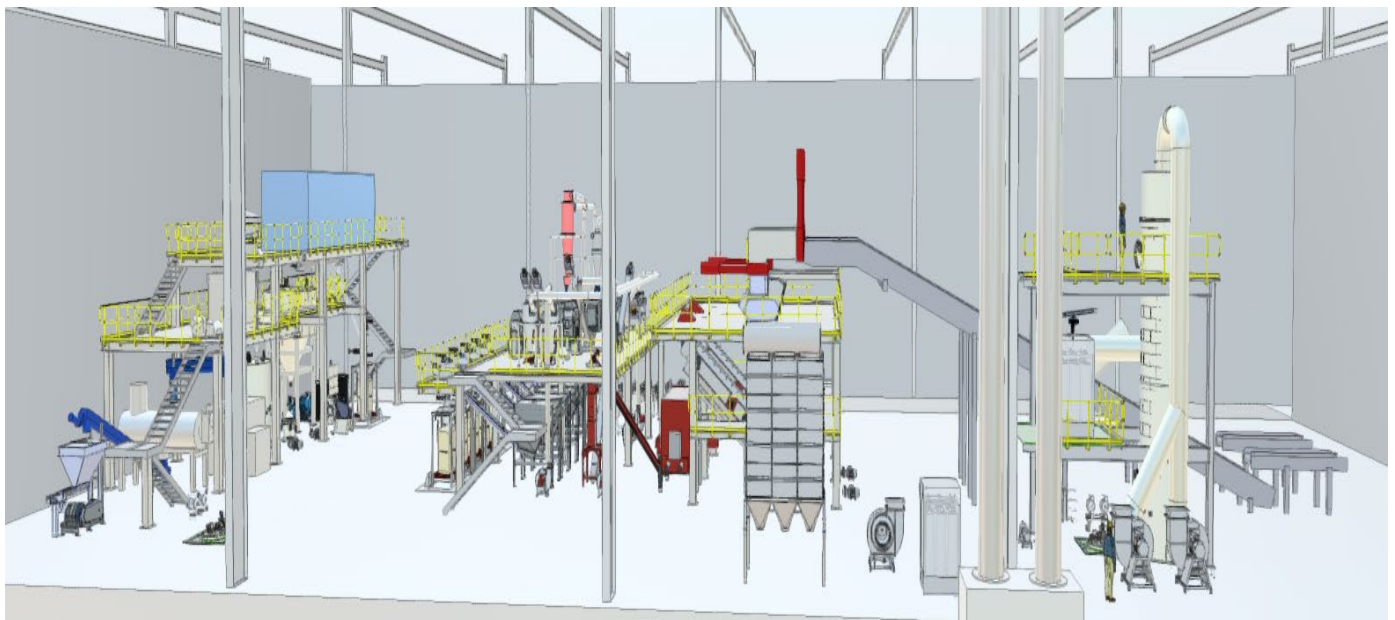




**Figure 6:** Artist’s impression of plant buildings (Scale: Building roof is 140 m long), adjacent land to left of buildings for second-stage hydrometallurgical refinery Hub.



**Figure 7:** Artist’s impression of Shredding ‘Spoke’ inside the main building)



## Forward-looking Statements

This release contains “forward-looking information” that is based on the Company’s expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to studies, the Company’s business strategy, plan, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as ‘outlook’, ‘anticipate’, ‘project’, ‘target’, ‘likely’, ‘believe’, ‘estimate’, ‘expect’, ‘intend’, ‘may’, ‘would’, ‘could’, ‘should’, ‘scheduled’, ‘will’, ‘plan’, ‘forecast’, ‘evolve’ and similar expressions. Persons reading this news release are cautioned that such statements are only predictions, and that the Company’s actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company’s actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information.

Forward-looking information is developed based on assumptions about such risks, uncertainties and other factors set out herein, including but not limited to general business, economic, competitive, political and social uncertainties; the actual results of current development activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of metals; failure of plant, equipment or processes to operate as anticipated; accident, labour disputes and other risks of the chemical industry; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. This list is not exhaustive of the factors that may affect our forward-looking information. These and other factors should be considered carefully, and readers should not place undue reliance on such forward-looking information.

Neither the Company, nor any other person, gives any representation, warranty, assurance or guarantee that the occurrence of the events expressed or implied in any forward-looking statement will actually occur. Except as required by law, and only to the extent so required, none of the Company, its subsidiaries or its or their directors, officers, employees, advisors or agents or any other person shall in any way be liable to any person or body for any loss, claim, demand, damages, costs or expenses of whatever nature arising in any way out of, or in connection with, the information contained in this document. The Company disclaims any intent or obligations to or revise any forward-looking statements whether as a result of new information, estimates, or options, future events or results or otherwise, unless required to do so by law.

## Advice

Nothing in this document constitutes investment, legal or other advice. Investors should make their own independent investigation and assessment of the Company and obtain any professional advice required before making any investment decision based on your investment objectives and financial circumstances.

Authorised on behalf of Neometals by Christopher Reed, Managing Director

## ENDS

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## About Neometals Ltd

Neometals’ Neometals’ focus is the continuous development and commercialisation of our proprietary innovative technologies with strong global partners to generate value through sustainable production of battery materials.

Decarbonisation, sustainability and resilient supply chains are the key challenges for the energy storage and electric vehicle supply chain. Our technologies, particularly those in battery materials recycling and recovery, reduce reliance on traditional mining and processing, and support circular economic principles.

Neometals has three core battery materials businesses commercialising proprietary, low-cost, low-carbon process technologies:

- Lithium-ion Battery (“LIB”) Recycling (50% equity) – to produce nickel, cobalt and lithium from production scrap and end-of-life LIBs in an incorporated JV with leading global plant builder SMS group. The Primobius JV is operating a commercial disposal service at its 10tpd Shredding “Spoke” in Germany and is the recycling technology partner to Mercedes Benz. Primobius’ first 50tpd operation will be in partnership with Stelco in Canada is expected to reach investment decision in Dec 2022;
- Vanadium Recovery (earning 50% equity) – to produce high-purity vanadium pentoxide via processing of steelmaking by-product (“Slag”). Finalising evaluation studies on a 300,000tpa operation in Pori, Finland and a potential JV with Critical Metals, underpinned by a 2Mt, 10-year Slag supply agreement (together with potential availability of a further 1.1Mt) with leading Scandinavian steelmaker SSAB. Investment decision expected end Dec 2022. MOU with H2Green Steel for up to 4Mt of Slag underpins a potential second operation in Boden, Sweden; and
- Lithium Chemicals (earning 35% equity) – to produce battery quality lithium hydroxide from brine and/or hard-rock feedstocks using RAM’s patented ELi® electrolysis process. Co-funding pilot plant and evaluation studies on a 20,000tpa operation in Estarreja, Portugal in a 50:50 JV between RAM (70% NMT, 30% Mineral Resources Ltd) and Portugal’s largest chemical producer Bondalti Chemicals S.A. Investment decision expected Dec 2023.