

# **QUARTERLY ACTIVITIES REPORT**

# For the quarter ended 30 September 2023

# **Highlights**

### **CORPORATE**

Cash balance A\$14.2 million, investments of A\$22.7 million and no debt.

### **CORE BATTERY MATERIALS BUSINESS UNITS**

Lithium-ion Battery ("LIB") Recycling (50% NMT via Primobius GmbH, an incorporated JV with SMS group GmbH)

- Awarded purchase order from Mercedes-Benz for 2,500tpa LIB shredding 'Spoke' plant, SMS mobilised subsequent to guarter end and award of matching refinery 'Hub' expected DecQ 2023;
- Engineering Cost Study results for 21,000tpa integrated Spoke and Hub indicate potential for the main product, lithium, to be in the lowest cost position globally; and
- First national phase patent granted in Australia,16 other national phase patents are at various stages of prosecution globally.

Lithium Chemicals (Co-funding Pilot Plant with Bondalti Chemicals SA (and related entity) via Reed Advanced Materials Pty Ltd ("RAM") (70% NMT, 30% Mineral Resources Ltd)

- Completion of purification stage of pilot test work program at SGS in Canada. Commencement of electrolysis and product crystallisation stage expected in November 2023; and
- Pilot activities being co-funded by Bondalti Chemicals SA with future works to fall under new co-operation agreement covering planned demonstration and commercial plant activities.

Vanadium Recovery ("VRP") (72.5% NMT via Recycling Industries Scandinavia AB ("RISAB"), an incorporated JV with Critical Metals Ltd), Technology 100% NMT via Avanti Materials Ltd)

- Progressed project financing activities and secured 'take or pay' offtake agreement with Glencore International AG for 100% of vanadium production at market linked pricing without forward sales.
- Subsequent to the end of the quarter Neometals providing notice to its partner in the Finnish Vanadium Recovery Project ("VRP1") of its wish not to proceed with construction; and
- Commercialisation of the VRP technology will now be conducted under a technology licensing business model.

# **UPSTREAM - MINERAL EXTRACTION**

Barrambie Titanium and Vanadium ("Barrambie") (100% NMT)

- Metallurgical test-work, regional exploration, native title, environmental and water activities advanced;
- Offtake negotiations discontinued with Jiuxing given inability to agree mutually acceptable terms in relation to offtake and equity funding; and
- Ongoing engagement with third-party titanium producers and mining services companies in relation to offtake, equity investment and contract mine-to-port solution.



# **Company Overview**

Neometals has developed and is commercialising three environmentally-friendly processing technologies that produce critical and strategic battery materials at lowest quartile costs with minimal carbon footprint.

Through strong industry partnerships, Neometals is demonstrating the economic and environmental benefits of sustainably producing lithium, nickel, cobalt and vanadium from lithium-ion battery recycling and steel waste recovery. This reduces the reliance on traditional mine-based supply chains and creates more resilient, circular supply to support the energy transition.

The Company's three core business units are exploiting the technologies under principal, joint venture and licensing business models:

- Lithium-ion Battery ("LiB") Recycling (50% technology) Commercialisation via Primobius GmbH JV (NMT 50% equity). All plants built by Primobius' co-owner (SMS group 50% equity), a 150-year-old German plant builder. Providing recycling service as principal in Germany and commenced plant supply and licensing activities as technology partner to Mercedes-Benz. Primobius targeting first commercial 50tpd plant offer to Canadian company Stelco in DecQ2023;
- Lithium Chemicals (70% technology) Commercialising patented ELi™ electrolysis process, coowned 30% by Mineral Resources Ltd, to produce battery quality lithium hydroxide from brine and/or hard-rock feedstocks at lowest quartile operating costs. Co-funding Pilot Plant trials in 2023 with planned Demonstration Plant trials and evaluation studies in 2024 for potential 25,000tpa LiOH operation in Portugal under a JV with a related entity of Bondalti, Portugal's largest chemical company; and
- Vanadium Recovery (100% technology) aiming to produce high-purity vanadium pentoxide from
  processing of steelmaking by-product ("Slag") at lowest-quartile operating cost. Targeting
  partnerships with steel makers and participants in the vanadium chemical value chain under a lowrisk, low-capex technology licensing business model.



Figure 1: Location map of Neometals' Projects together with partner developments



# **Core Battery Materials Business Units**

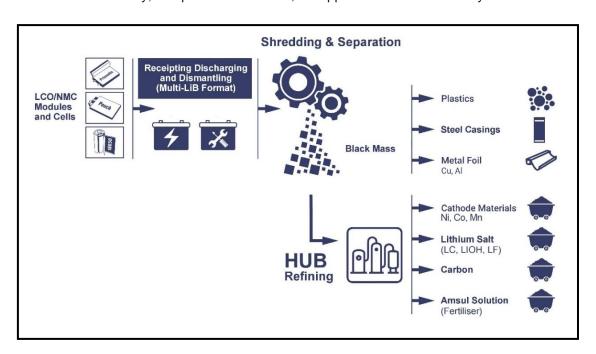


### Lithium-ion Battery Recycling

(Intellectual Property via ACN 630 589 507 Pty Ltd- NMT 50%, SMS 50%) Commercialising via Primobius GmbH, NMT 50% SMS group GmbH 50%

Primobius GmbH ("**Primobius**") is the 50:50 incorporated joint venture established in 2020 to co-fund the commercialisation of the lithium-ion battery recycling technology ("**LIB Recycling Technology**") originally developed by Neometals.

The LIB Recycling Technology recovers materials contained in LIB production scrap and end-of-life cells that might otherwise be disposed of in land fill. Current LIB recycling processes predominantly rely on high carbon emission pyrometallurgy processes. Primobius' two stage process recovers nickel, cobalt, lithium and manganese battery materials (and physically recovers metals and plastics) into saleable products that can be reused in the LIB supply chain. The LIB Recycling Technology prioritises maximum safety, environmental sustainability, and product recoveries, to support the circular economy and decarbonisation.



**Figure 2:** High level flowsheet showing the movement of materials from Shredding and Beneficiation ('Spoke') through to refining ('Hub') stages for the LIB Recycling Technology

The LIB Recycling Technology comprises two stages:

- "Spoke" Comprising of LIB receipting, sorting, discharging, disassembly together with shredding and separation, to physically separate all of the components of LIBs received, by metal casings, electrode foils, plastics and active battery materials; and
- 2. "**Hub**" Comprising of leaching, purification, and crystallisation of the active materials suitable for use in production of LIB precursor, via a hydrometallurgical refining process.

During the quarter the LIB Recycling Technology IP holding company ACN 630 589 507 Pty Ltd received its first national phase patent granted in Australia,16 other national phase patents are at various stages of prosecution globally.





### **Primobius Status**

Primobius' current business model contemplates the following revenue sources:

- 1. Hilchenbach LIB disposal fees (for LIBs supplied by multiple waste aggregators delivering predominantly whole modules);
- 2. Sale of products from the Hilchenbach Spoke (metallic scrap, chemical intermediates and chemicals purchased by various recyclers and smelting customers); and
- 3. Mechanical plant and equipment package supply (Stelco and Mercedes) and associated technology licensing royalties.

### Hilchenbach Operations

The Spoke section of the demonstration plant in Hilchenbach Germany ("Hilchenbach Spoke") continues its ramp up to the facility's maximum permit capacity of 9tpd of LIBs.

The Hilchenbach Spoke is providing commercial LIB disposal services and the hydrometallurgical refinery 'Hub' continues to operate as a demonstration plant. Namely, the Hub is being utilised for discrete customer trials that support flowsheet optimisation and generate product samples.

During the quarter, the Hilchenbach Spoke continued to produce intermediate mixed nickel/cobalt product ("Black Mass"). The typical LIB contains approximately 48% Black Mass which Primobius is currently recovering at high levels and selling to a number of global offtakers on a spot basis with pricing set according to nickel and cobalt content. Black Mass feedstock for Hub trials is diverted from the Spoke instead of being sold.

### **Business Development**

Primobius' key near-term commercial agreements are summarised below:

- A Cooperation Agreement with Mercedes-Benz's ("Mercedes") ("Mercedes Cooperation") for the engineering, equipment supply and installation for a 2,500tpa fully integrated, closed-loop recycling plant, 5 year research, collaboration and development of an industrial-scale solution for Mercedes<sup>1</sup>; and
- Technology licensing and joint venture option agreements with a subsidiary of Stelco Inc. ("Stelco") ("Stelco Agreements") which plans to secure large volumes of end-of-life vehicles in North America for scrap steel and recycle LIBs, with a first proposed 21,000tpa integrated operation ("Stelco Spoke" followed by "Stelco Hub") at Stelco's Hamilton Works, Ontario, Canada<sup>2</sup>.

### **Activity Summary**

During the quarter, Primobius made significant commercial and development progress. It received its first plant package purchase order which has underpinned a growing order book under the Company's preferred plant supply and technology licensing/royalty business model. The period also marked the fifth quarter of modest revenue generation from the Hilchenbach Spoke and from front-end engineering and design services rendered to Primobius' customers in preparation for the offer and award of further recycling mechanical plant and equipment package supply agreements.

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<sup>1 (</sup>for full details refer to Neometals ASX announcement headlined "Cooperation Agreement with Mercedes Benz" released on 13th May 2022)

<sup>2 (</sup>for full details refer to Neometals ASX announcement headlined "Battery Recycling – Binding Agreements with Stelco for NA" released on 31st December 2021)



### Significant activities comprised:

### Technical

- Successful completion of Engineering Cost Study ("ECS") results for 21,000tpa integrated Spoke and Hub
  indicated potential for the main product, lithium, to be at the lowest cost position globally after co and byproduct credits. The Hub is designed to process 12,000tpa of concentrate comprised of the anode and
  cathode materials ("Black Mass") arising from the processing of 21,000tpa of LiB modules and cells in
  the Spoke; and
- Post the quarter, new lithium recovery flowsheet results improved lithium yields from >83% to >93% from trials that produced lithium fluoride ("LiF") product with +95% purity. This lithium flowsheet process improvement can replace Primobius' current lithium solvent-extraction circuit which produces lithium sulphate and is expected to reduce both operating and capital costs. Importantly, Primobius has received strong interest in its LiF product from the lithium electrolyte supply chain and will be providing samples under material test-work agreements with leading Chinese precursor and electrolyte manufacturers;

Table 1: Key Hub and Spoke ECS Metrics

Metrics	Shredding Spoke	Refining Hub
Hub Annual Throughput / Capacity	21,000tpa	12,000tpa Black Mass <sup>3</sup> feed
Hub Annual Production <sup>4</sup> :  Hydrated nickel sulphate: NiSO4.6H2O(s)  Hydrated cobalt sulphate: CoSO <sub>4</sub> .7H <sub>2</sub> O(s)  Lithium fluoride: LiF(s)  Manganese sulphate: 32% w/w MnSO4(aq)  Copper metal/cathode  Ammonium sulphate: (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> (s)	12,000tpa Black Mass	9,300tpa 4,300tpa 1,600tpa 7,000tpa (liquid) 40tpa 23,400tpa
Capital Cost (including 20% Contingency for Spoke and 15% Contingency for Hub) <sup>5</sup>	€102.5M <sup>6</sup> (US\$113.5M) <sup>6</sup>	€275M (US\$303M)
Annual Operating Costs	€27.1M (US\$30M)	€56M (US\$61M)
Unit Operating Costs	€1,292 <sup>9</sup> (US\$1,430) <sup>6</sup>	€2,644/tpa (US\$2,926/tpa) of LiB fed into a matching Primobius Spoke
Workforce	239	82

<sup>&</sup>lt;sup>3</sup> Black Mass quality is as produced from a Primobius Spoke.

Note figures in table 1 above relating to the Spoke have been adjusted from the original ASX Announcement in 2022 to dollars of today (for full details refer to Neometals ASX announcement titled "Cooperation Agreement with Mercedes-Benz" released on 13 May 2022.

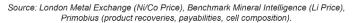
<sup>&</sup>lt;sup>4</sup> Based on NMC 622/BM 1 feed chemistry.

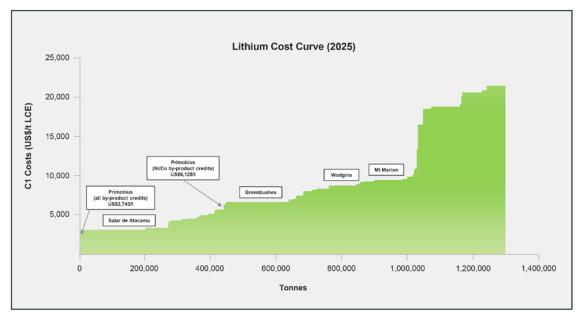
<sup>&</sup>lt;sup>5</sup> Hub CapEx and OpEx cost estimates are denominated in Euros and USD using an exchange rate of 1 Euro: 1.1063 US\$ (Reserve Bank of Australia (RBA) 27/7/2023).

è German 12-month inflation: 6.4% (Source: DEstatis, <a href="https://www.destatis.de/EN/Themes/Economy/Prices/Consumer-Price-Index/\_node.html">https://www.destatis.de/EN/Themes/Economy/Prices/Consumer-Price-Index/\_node.html</a>). and September 2022 €/US\$ F/X 1:1 (source RBC (<a href="https://apps.royalbank.com/apps/foreign-exchange-calculator">https://apps.royalbank.com/apps/foreign-exchange-calculator</a>)

Revenue by recovered elements in 1 tonne of Spoke feed 12,000 11,118 Price (US\$/t) 22,450 83.64% 82.06% 83.45% Total recovery (%) 10,000 8.949 8,827 8.469 8,000 Revenue (US\$/t) 6,000 4,000 3,099 1,714 1.891 1.944 2,000 Combined Combined Combined Combined Spoke Spoke Spoke Spoke LCO NMC622 NMC811 NMC111 Cobalt Lithium -Spoke OPEX = Spoke & Hub OPEX

Figure 3: Revenue by Recovered Elements in 1 Tonne of Spoke Feed





Source: London Metal Exchange (Ni/Co Price), Benchmark Mineral Intelligence (Li Price), Primobius (product recoveries, payabilities, cell composition).

**Figure 4:** Lithium Cost Curve (2025). Key Production and Price assumptions used were: Nickel 2,095tpa/US\$22,450/t, Cobalt 913 tpa/US\$33,420/t, Annual OpEx US\$91.5, LCE equivalent: 2,272tpa



### Commercial

- Primobius awarded a purchase order from Mercedes for 2,500tpa LIB shredding 'Spoke' plant to be installed at Mercedes Kuppenheim works;
- Primobius awarded a purchase order to SMS group for the Mercedes 'Spoke' plant, SMS have commenced construction of the equipment off-site;
- Post the quarter SMS mobilised to site and commenced assembly of site office and workshops in preparation for installation activities scheduled to commence in the December quarter;
- Finalisation of offer to Mercedes for the Kuppenheim Hub plant package; and
- Ongoing business development activities to build a global pipeline of potential future recycling plants.

Figure 5: Artist rendering of Mercedes-Benz Battery Recycling building housing the 2,500tpa plant from Primobius



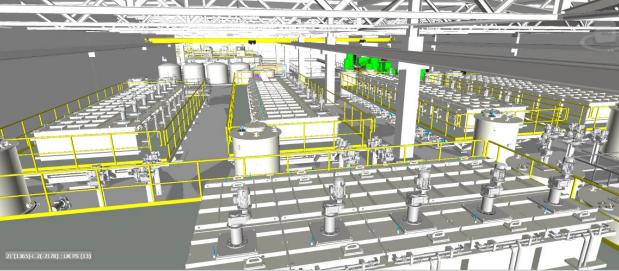


Figure 6: 3D rendering of Mercedes' hydrometallurgical refinery 'Hub' at Kuppenheim



Figure 7: LIB Recycling Indicative Timeline

DecQ 2023	MarQ 2024	JunQ 2024	SepQ 2024	DecQ 2024	MarQ 2025
Receipt of MB Hub PO*	Commence MB Hub installation	Complete MB Spoke installation	Complete MB Spoke	Complete MB Hub installation	Commence installation of
Commence MB Spoke installation	Receipt of Stelco 21,000tpa Spoke	and Commence Commissioning	Commissioning	and Commence Commissioning	Stelco Spoke
Spoke installation	PO**			Offer Stelco Hub***	

- Subject to PO issue by Mercedes ("MB")
   \*\* Subject to PO issue by Stelco
- \*\* Subject to Primobius Approvals

### Corporate

- Continued recruitment activities to expand the Primobius technical, operational, commercial and management teams in line with corporate milestones and to be able to offer mechanical plant and equipment package supply contracts as demand grows;
- · Appointment of dedicated Primobius CEO, Dr Michel Siemon on 23 August 2023, Dr Siemon is Head of Corporate Development at SMS group; and
  - Appointment subsequent to the quarter end of former Mercedes and VW electric vehicle and battery recycling expert, Christian Reiche to lead Neometals' LiB recycling activities.





Figure 8 - LHS, newly appointed Primobius CEO, Michel Siemon and RHS Neometals newly appointed 'Head of Recycling', Christian Reiche



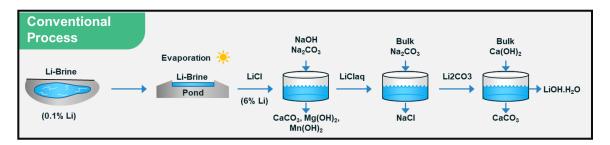


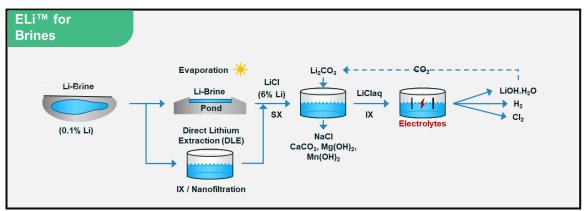
### **Lithium Chemicals**

(Intellectual Property via Reed Advanced Materials Pty Ltd ("RAM") – NMT 70%, Mineral Resources Ltd 30%)

RAM co-funding pilot scale trials with Bondalti Chemicals SA (and related entity)

Neometals, through RAM, is commercialising its proprietary process (**ELi Processing Technology** ("**ELi™**")) to produce lithium hydroxide from lithium chloride solutions using electrolysis. Neometals has used ELi™ to convert lithium chloride solutions produced from both natural spodumene and brine feedstocks at semi-pilot scale. ELi™ has the flexibility to produce lithium hydroxide and lithium carbonate and at a significantly lower operating cost than for conventional commercial production processes. ELi's key economic advantage lies in the potential to replace costly, imported bulk reagents for traditional carbonation and causticising processing steps with electricity and low-cost internally generated reagents. RAM holds 17 granted patents in the hard rock and brine producing countries and has a further 14 pending patent applications.





**Figure 9:** Schematic showing a comparison of the conventional flowsheet for the production of lithium hydroxide from brines with the patented Eli™ process

A feasibility study in 2016 indicated the potential for ELi™ to significantly reduce the cost and carbon footprint associated with production, transport and consumption of the carbon-intensive reagents that are used in conventional lithium processes. An engineering and cost study ("ECS") in 2023 further confirmed industry-leading economics with the potential for step change in operating costs to developers of lithium brine sources using ELi™.





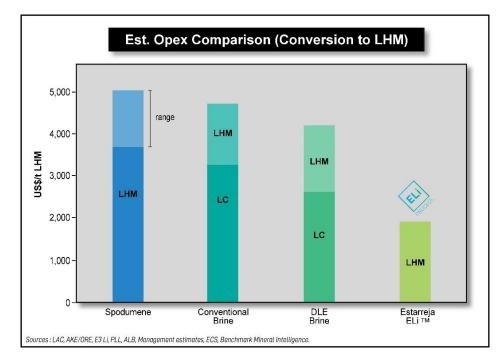


Figure 10: ELR ECS Opex comparison showing significantly reduced operating costs to generate LHM when compared to conventional Brine and spodumene routes (noting that conventional Brine processing is a two-stage process with lithium carbonate ("LC") produced before additional processing into LHM.

### **Estarreja Lithium Refinery Project**

In the December quarter 2021, RAM entered into a binding Co-operation Agreement ("ELi Co-operation") with Portugal's largest chlor-alkali producer, Bondalti Chemical SA. Bondalti is part of the Jose De Mello Group, one of Portugal's largest conglomerates, family controlled and founded in 1898. Bondalti and RAM have co-funded evaluation activities to construct and operate a commercial-scale lithium refinery ("Estarreja Lithium Refinery" or "ELR"") adjacent to Bondalti's chlor-alkali operations in Estarreja, Portugal.

The evaluation activities completion of an engineering cost study ("ELR ECS") and pilot-scale metallurgical test-work ("Pilot Trials"). The Pilot Trials are in progress and expected to be well advanced in the March Q 2024.

Table 2: Key ELR ECS Metrics\*

	ECS Metrics (100% ownership basis)
Annual Production	25,000tpa LHM
Annual Throughput	80,000 tpa Brine @ 6% Li
Average Operating Cost (±15%)**	€1,768/t (US\$1,945/t) LHM
Total initial capital costs (±15%)***	€405M (US\$446 M)
Capital Intensity****	€16,200/t (US\$17,840/t) LHM capacity

<sup>\* (</sup>for full details refer to Neometals ASX announcement headlined 'Portugal Lithium Refinery Study Confirms Step-change Opex of ELi<sup>TM</sup> Technology" released on 26th April 2023).

<sup>\*\*</sup> from receipt of 6% Li brine concentrate to packaged high purity "battery grade" lithium hydroxide product, excluding by-product credits
\*\*\* Total of direct and indirect capex including 15% contingency, EPC fees and design post-Class 3

<sup>\*\*\*\*</sup> Based on total capex and 25,000tpa LHM capacity



With the original planned pilot activities nearing conclusion and Bondalti's parent incorporating a dedicated lithium subsidiary, Lifthium Energy SA, the Parties have allowed the current ELi Cooperation to lapse. RAM and Bondalti are continuing to co-fund the agreed pilot plant activities while a new cooperation agreement is being drafted in parallel<sup>7</sup>. The new agreement contemplates the construction of a Demonstration Plant and Front-End Engineering and Design Study ("ELi™ FEED Study") and key commercial terms for technology licensing and potential joint operation.

### **Activity Summary**

The ELR opportunity was progressed during the quarter with strong focus on technical studies, pilot trial activities and sourcing feedstocks for pilot, future demonstration and longer-term commercial operations.

### Technical

- As part of the ELR evaluation, the parties are implementing a phased technical validation plan including
  pilot evaluation ("ELi™ Pilot"). The ELi™ Pilot comprises 3 stages being 'purification', 'electrolysis' and
  'crystallisation'. The purification test-work at SGS in Canada (processing concentrated and purified salar
  brine (6% Li basis)) was materially complete by the end of the quarter and preparations are underway for
  the follow-on electrolysis stage commencing in November 2023; and
- Demonstration plant (planned for construction at Bondalti's Estarreja chlor-alkali operation) electrolyser design work was advanced in alignment with the ELi™ Pilot flowsheet.

### Commercial

- Commercial dialogues were progressed with aspiring and existing producers of lithium brine concentrates to develop terms of supply to the ELR. This included ongoing discussions with the commercial brine source feed suppliers to the planned Demonstration Plant;
- Commercial discussions progressed with potential lithium hydroxide offtake partners for the ELR; and
- Commercial discussions with potential ELi licensees in areas outside Portugal and Spain.

Figure 11: Indicative Timeline for the ELR

DecQ 2023	MarQ 2024	JunQ 2024	SepQ 2024	DecQ 2024	MarQ 2025
Electrolysis Pilot  Execute new CA*  with Lifthium  Energy	Complete membrane durability test  LHM** product from crystallization pilot  Complete Class 3 study report	Construction of Demo Plant	Demo Plant Operations	Complete FEED Consider FID* (Dec/Jan)	Development decision, Estarreja* Potential EPC appointment for commercial plant*

<sup>\*</sup>Subject to Steering Committee and Board Approvals

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<sup>\*\*</sup>Lithium Hydroxide Monohydrate

<sup>7 (</sup>for full details refer to Neometals ASX announcement headlined "Lithium Chemicals Co-operation Update" released on 3rd October 2023).





# Vanadium Recovery (Intellectual Property via Avanti Materials Ltd – NMT 100%) Commercialising via Recycling Industries Scandinavia AB ("RISAB") – 72.5% NMT

Neometals is commercialising its sustainable, proprietary vanadium recovery process ("VRP Technology") to produce vanadium products for battery and aerospace alloying applications from stockpiles of vanadium-bearing steel making by-product. The unique selling points of the technology are:

- Potential lowest-quartile operating costs<sup>8</sup> from processing steelmaking slags without upstream mining costs/risk/carbon footprint;
- A processing flowsheet utilising conventional equipment at atmospheric pressure, mild-temperatures, and non-exotic materials of construction; and
- Likely very low or net zero greenhouse gas footprint given the absence of mining and a processing route requiring the mineral sequestration of CO<sub>2</sub> into a potentially saleable carbonate by-product which sequesters CO<sub>2</sub>.

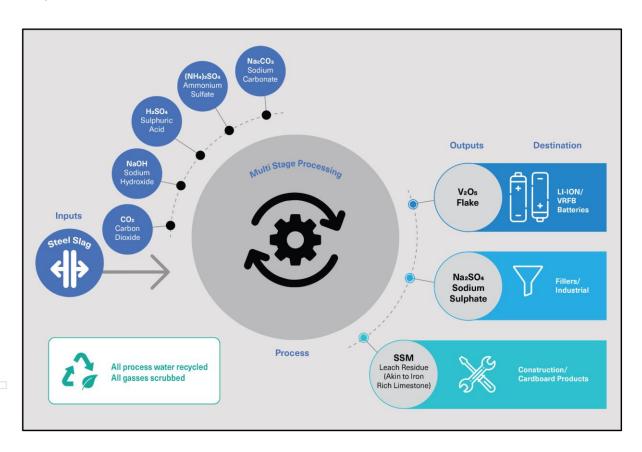


Figure 12: High level flowsheet of Neometals VRP Technology:

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<sup>8 (</sup>for full details refer to Neometals ASX announcement headlined "Vanadium Recovery Project Delivers Strong feasibility Results" released on 8th March 2023).



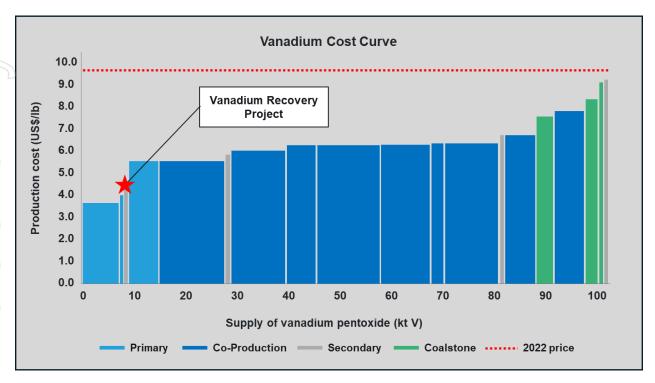


Figure 13: 2022 Vanadium Cost Curve.

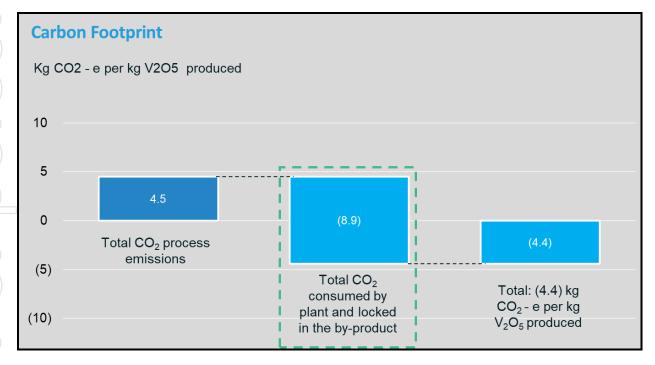


Figure 14: Carbon Footprint for VRP1 at Pori, Finland highlighting benefit of sequestering CO2 in by-product.



### **RISAB Status**

Neometals and unlisted Scandinavian-focused explorer, Critical Metals Ltd ("Critical"), are jointly evaluating the feasibility of recovering high-purity vanadium pentoxide ("V<sub>2</sub>O<sub>5</sub>") from high-grade vanadium-bearing steel by-product ("Slag") in Scandinavia. Neometals has funded and managed evaluation activities earning a 72.5% interest in an incorporated JV (Recycling Industries Scandinavia AB ("RISAB")) with Critical.

In March 2023, Neometals announced results of a feasibility study ("VRP1 FS") based on the AACE® Class 3 engineering cost study ("VRP1 ECS") completed by Nordic engineering group Sweco Industry OY. The VRP1 ECS confirmed the potential for lowest-quartile operating costs in a high-purity vanadium chemical operation with a low-to-negative carbon footprint (for full details refer to Neometals ASX announcement headlined "Vanadium Recovery Project Delivers Strong Feasibility Results" released on 8th March 2023).

RISAB engaged leading Nordic investment banks SEB and Aventum Partners to lead the equity and project financing processes respectively. Strong interest has been received from investment and commercial banks in Europe with debt due diligence led by the European Investment Bank and a preferred banking syndicate.

A take-or-pay offtake agreement has been struck with Glencore International AG ("Glencore") and the project is at the financing stage ahead of a decision to construct and produce high-purity vanadium pentoxide ("V2O5") from high-grade vanadium-bearing steel making by-product ("Slag") under a feedstock supply agreement with SSAB EMEA AB and SSAB Europe Oy (collectively "SSAB").

Post the quarter, Neometals provided a status update on RISAB's progress towards securing the VRP1 debt and equity financing required to make a FID. It subsequently has provided notice to its partner in the VRP1 that it does not wish to proceed with the construction of a slag processing facility.

Neometals has requested that RISAB consider alternative methods of funding, including outright sale of the VRP1 project holding company. However, Neometals intends to revert to a technology licensing business model to commercialise its proprietary vanadium recovery process ("VRP Technology").



# **Upstream – Mineral Extraction**



# Barrambie Titanium/Vanadium Project (Neometals 100%)

The Barrambie Vanadium and Titanium Project in Western Australia ("Barrambie") is one of the largest vanadiferous-titanomagnetite ("VTM") Mineral Resources globally (280.1Mt at 9.18%  $TiO_2$  and 0.44%  $V_2O_5$ )\*, containing the world's second highest-grade hard rock titanium Mineral Resource (53.6Mt at 21.17%  $TiO_2$  and 0.63%  $V_2O_5$ ) and high-grade vanadium resource (64.9Mt at 0.82%  $V_2O_5$  and 16.9%  $TiO_2$ ) subsets (referred to as the Eastern and Central Bands respectively) based on the latest Neometals 2018 Mineral Resource Estimate<sup>9</sup>.

Barrambie is located approximately 80km north-west of Sandstone in Western Australia and the Mineral Resource is secured under a granted mining lease. Neometals secured environmental approval in 2012 to mine and construct a 3.2 Mtpa processing plant (Ministerial Statement 911), extended the timeframe for implementation in 2019 (Ministerial Statement 1119) and is currently in the process of securing a further extension of the timeframe for project implementation. The project also has a granted mining proposal to extract approximately 1.2Mtpa of mineralisation.

The current stage of development sees Neometals deeply engaged with third-party titanium producers and mining services companies in relation to offtake, equity investment and contract mine-to-port solutions.

### **Activity Summary**

During the quarter the following activities were undertaken:

#### Technical

- Metallurgical variability assessments completed in relation to comminution with corresponding beneficiation work pending;
- Regional exploration completed across Barrambie tenure to maintain tenements in good standing
- Preparations were undertaken for seismic surveys, rehabilitation of drill lines, soil analysis and rock chip sampling, and a geological database review; and
- Flora and vegetation studies were completed during the quarter and a final report is spending.
  Additionally, a field program to assess the potential of the saline water prospects was completed with a
  targeted water exploration program to follow. Baseline monitoring including dust, weather and water
  table depth continues.

### Commercial

Subsequent to the end of the quarter, Neometals announced that its wholly owned subsidiary Australian Titanium Pty Ltd was unable to advance from offtake term sheet<sup>10</sup> to binding take or pay offtake agreement with Jiuxing Titanium Materials Co ("**Jiuxing**"). The parties were unable to agree mutually acceptable terms in relation to offtake and equity funding. Regrettably, the broader macroeconomic backdrop has required Jiuxing to adjust its production plans and shelve further Barrambie related activities. The Company is continuing its engagement with third-party titanium producers and mining services companies in relation to offtake, equity investment and contract mine-to-port solutions.

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<sup>9 (</sup>for full details refer to ASX announcement headlined "Barrambie Project - Mineral Resource Update" released on 17 April 2018 and Table 3 (Appendix 1) 10 For further details see Neometals announcement headlined "Barrambie Offtake Update" dated 2nd October 2023



### Corporate

In parallel with its evaluation and commercial activities, Neometals continues to assess the optimal strategy to return Barrambie value to shareholders.

Figure 15: Barrambie Indicative Timeline

DecQ 2023	MarQ 2024	JunQ 2024	SepQ 2024	DecQ 2024	MarQ 2025
Offtake / Equity Negotiations	Commence Heritage Surveys	Commence water exploration drilling	Commence Class 3 ECS Study*	Progress Class 3 DFS Study	Complete Class 3 DFS Study
					Submit EPA Approval Documentation

# Corporate

### **FINANCIAL**

Hannans Limited (ASX:HNR) (Hannans) (Yilgarn Nickel/Lithium/Gold/Battery Recycling)

As at 30 September 2023 Neometals held 879,812,014 ordinary fully paid shares (~26% of the issued capital) in Hannans on an undiluted basis. Hannans holds exclusive technology licences to Neometals' original LIB Recycling Technology in Italy and the Balkans, a non-exclusive licence in the United Kingdom and it is earning a 50% interest in an exclusive licence for Scandinavia held by Critical Metals.

Critical Metals Limited (Unlisted, Scandinavian Lithium/Cobalt/Base Metals)

Neometals holds ~18.4% of unlisted public company Critical Metals Ltd, a company which holds an exclusive licence to Neometals' original LIB Recycling Technology in Scandinavia and 72.5% interest in RISAB which is developing VRP1 and VRP2.

### Finances (unaudited)

Cash and term deposits on hand as of 30 September 2023 totalled \$14.2 million, including \$0.2 million in restricted use term deposits supporting contractual obligations. The Company has net receivables of \$1.1 million and investments totalling \$22.7 million.

Related Party payments for the quarter outlined in the ASX Appendix 5B released contemporaneously at section 6.1 total \$425,625 and are made up of Director fees and superannuation.

### Issued Capital

The total number of shares on issue as at 30 September 2023 was 553,307,937.

Authorised on behalf of Neometals by Christopher Reed, Managing Director.

### **ENDS**

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### **Compliance Statement**

The information in this report that relates to Mineral Resource Estimates for the Barrambie Vanadium/Titanium Project is extracted from the ASX Announcement listed below, which is also available on the Company's website at <a href="https://www.neometals.com.au">www.neometals.com.au</a>.

17/04/2018 Barrambie – Updated Barrambie Mineral Resource Estimate

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 and that all material assumptions and technical parameters underpinning the estimates in the 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.



### **APPENDIX**

### **Appendix 1: Global Resource**

Table 3: Barrambie Mineral Resource Estimate, April 2018\*

	Tonnes (M)	TiO <sub>2</sub> (%)	V <sub>2</sub> O <sub>5</sub> (%)
Indicated	187.1	9.61	0.46
Inferred	93.0	8.31	0.40
Total	280.1	9.18	0.44
High Gra	de V <sub>2</sub> O <sub>5</sub> Resourc	e (at 0.5% V <sub>2</sub> O <sub>t</sub>	5 cut-off) <sup>2</sup>
	Tonnes (M)	TiO <sub>2</sub> (%)	V <sub>2</sub> O <sub>5</sub> (%)
Indicated	49.0	16.93	0.82
Inferred	15.9	16.81	0.81
Total	64.9	16.90	0.82
Hig	h TiO <sub>2</sub> Resource	(14% TiO <sub>2</sub> cut-	off) <sup>2</sup>
	Tonnes (M)	TiO <sub>2</sub> (%)	V <sub>2</sub> O <sub>5</sub> (%)
Indicated	39.3	21.18	0.65
Inferred	14.3	21.15	0.58
Total	53.6	21.17	0.63



### **Appendix 2: Tenement Interests**

As at 30 September 2023, the Company has an interest in the following projects and tenements in Western Australia.

Project Name	Licence Name	Beneficial Interest	Status
Barrambie	M57/173-I	100%	Live
Barrambie	E57/769-I	100%	Live
Barrambie	E57/770-I	100%	Live
Barrambie	E57/1041-I	100%	Live
Barrambie	E57/1220	100%	Pending
Barrambie	E57/1244	100%	Pending
Barrambie	E57/1245	100%	Pending
Barrambie	E57/1379	100%	Pending
Barrambie	E57/1401	100%	Pending
Barrambie	E20/1037	100%	Pending
Barrambie	L57/0030	100%	Live
Barrambie	L57/0064	100%	Pending
Barrambie	L57/0065	100%	Pending
Barrambie	L57/0066	100%	Pending
Barrambie	L20/0055	100%	Live
Barrambie	L20/0080	100%	Live
Barrambie	L20/0081	100%	Live
Yellowdine	E77/2809	100%	Pending
Queen Victoria Rocks	E15/1416-I	100%	Live



### Changes in interests in mining tenements Interests in mining tenements acquired or increased

Project Name	Licence Name	Acquired or increased
Barrambie	E57/1401	Application

Interests in mining tenements relinquished, reduced, or lapsed

Project Name	Licence Name	Relinquished, reduced, or lapsed
Barrambie	E20/1030	Withdrawal

# About Neometals Ltd

Neometals has developed and is commercialising three environmentally-friendly processing technologies that produce critical and strategic battery materials at lowest quartile costs with minimal carbon footprint.

Through strong industry partnerships, Neometals is demonstrating the economic and environmental benefits of sustainably producing lithium, nickel, cobalt and vanadium from lithium-ion battery recycling and steel waste recovery. This reduces the reliance on traditional mine-based supply chains and creating more resilient, circular supply to support the energy transition.

The Company's three core business units are exploiting the technologies under principal, joint venture and licensing business models:

 Lithium-ion Battery ("LiB") Recycling (50% technology) – Commercialisation via Primobius GmbH JV (NMT 50% equity). All plants built by Primobius' co-owner (SMS group 50% equity), a 150-year-old German plant builder. Providing recycling service as principal in Germany and commenced plant supply and licensing activities as technology partner to Mercedes-Benz. Primobius targeting first commercial 21,000tpa plant offer to Canadian company Stelco in the DecQ 2023;

- Lithium Chemicals (70% technology) Commercialising patented ELi™ electrolysis process, co-owned 30% by Mineral Resources Ltd, to produce battery quality lithium hydroxide from brine and/or hard-rock feedstocks at lowest quartile operating costs. Co-funding Pilot Plant trials in 2023 with planned Demonstration Plant trials and evaluation studies in 2024 for potential 25,000tpa LiOH operation in Portugal under a JV with related entity to Bondalti, Portugal's largest chemical company; and
- Vanadium Recovery (100% technology) aiming to enable sustainable production of high-purity vanadium pentoxide from processing of steelmaking by-product ("Slag") at lowest-quartile operating cost. Targeting partnerships with steel makers and participants in the vanadium chemical value chain under a low risk / low capex technology licensing business model.