

# QUARTERLY ACTIVITIES REPORT For the quarter ended 31 December 2022

### HIGHLIGHTS

### CORPORATE

• Cash balance A\$42 million, investments of A\$29.4 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)

- Successful completion of a dedicated 'end-to-end' customer demonstration trial for a German OEM in December 2022. Final demonstration trial for 'Hub' engineering cost study planned for March 2023;
- Advancing 'Hub' engineering cost study activities for 50 tpd (18,250tpa) plant due for completion in JunQ 2023;
- Secured 2023 baseload feedstock (end-of-life LIB) for Hilchenbach 10tpd commercial 'Spoke' operations from German OEM, ramp up continuing with addition of third eight-hour shift; and
- Neometals formalised 50:50 ownership of LIB Recycling IP with SMS to accelerate Primobius' commercial activities.

### Vanadium Recovery ("VRP") (earning into 50:50 JV with Critical Metals Ltd)

- Feasibility Study and Life Cycle Assessment (carbon footprint) activities materially complete with results expected MarQ 2023, subject to execution of SSAB Slag agreement for additional 'Slag' (feedstock);
- Environmental permit secured from the Regional State Administrative Agency for Southern Finland;
- Nordic investment bank, Aventum Partners, appointed to lead debt finance process; and
- Formal agreements to formalise Neometals 50% interest in VRP1 and technology license for the project's incorporated joint venture company are targeted for MarQ 2023 execution.

Lithium Chemicals (earning into 50:50 JV with Bondalti Chemicals SA via Reed Advanced Materials Pty Ltd ("**RAM**") (NMT 70:30 Mineral Resources Ltd)

- Engineering cost study activities for ~25,000tpa lithium hydroxide operation using RAM's ELi® process at
  Bondalti's Estarreja chlor-alkali plant in Portugal on track for completion in SepQ 2023; and
- Commenced bench-scale test work on potential feedstocks for JunQ 2023 pilot trials and commenced the design of planned demonstration plant to be operated in Portugal in 1H CY 2024.

### UPSTREAM - MINERAL EXTRACTION

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

- Successful commercial-scale smelting trials on blends of Barrambie mineral concentrates produced premium quality chloride grade titanium Slag; and
- Completion of Class 4 PFS for production of titanium (ilmenite) and iron-vanadium concentrate delivered compelling financial metrics. Confirmed the viability of commercialising Barrambie with potential to supply in excess of 500,000 tpa of high-quality supply constrained ilmenite in the first 10 years of the project; and
- Neometals continues to advance its offtake negotiations with MOU partner Jiuxing Titanium and assess the optimal strategy and structure to return Barrambie value to shareholders.



### **COMPANY OVERVIEW**

Neometals is an emerging, sustainable battery materials producer. The Company has developed a suite of green, battery materials processing technologies that reduce reliance on traditional mining and processing and support circular economic principles.

Neometals' is commercialising these proprietary, low-cost, low-carbon process technologies in three core incorporated joint venture structures, listed below:

- 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, in partnership with Stelco in Canada, is expected to reach investment decision in SepQ 2023;
- 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 underpinned by a 10-year Slag supply agreement with leading Scandinavian steelmaker SSAB. Decision to form 50:50 JV with Critical Metals expected MarQ 2023 with project investment decision expected end June 2023. 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 patented ELi® electrolysis process owned by RAM (70% NMT, 30% Mineral Resources Ltd). Co-funding pilot plant and evaluation studies on a 25,000tpa operation in Estarreja, Portugal with Portugal's largest chemical producer Bondalti Chemicals S.A.



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



### CORE BATTERY MATERIALS BUSINESS UNITS



#### <u>Lithium Battery Recycling</u> (NMT 50% Intellectual Property, SMS 50%) Commercialising via Primobius GmbH, a 50:50 incorporated JV with SMS group GmbH

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

The process 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 ("LIB Recycling Technology") 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.

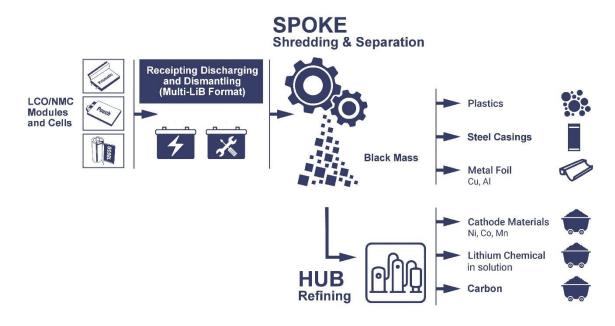
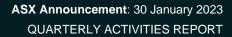


Figure 2: High level flowsheet showing the movement of materials from Shredding and Beneficiation ('Spoke') through to refining ('Hub') stages for the LIB Recycling Technology

It comprises two stages:

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

The Spoke section of the demonstration plant in Hilchenbach ("**Hilchenbach Spoke**"), Germany was upgraded to provide a commercial disposal service to the German OEMs in April 2022. Production is currently being ramped up to the facility's maximum licence capacity of 10tpd of LIBs. Data generated during ongoing Hub trials is being used internally for engineering and design purposes. Primobius has a growing customer base seeking recycling plant supply together with arrangements where Primobius acts as principal, JV partner or technology licensor.





During the quarter, Primobius further progressed technical, evaluation and commercial activities across the business unit. The period also marked the second quarter of revenue generation from the Hilchenbach Spoke and from other engineering services rendered to Primobius' clients who are progressing towards recycling plant purchase orders.

Significant activities comprised:

#### Technical

Successful completion of a dedicated 'end-to-end' customer demonstration trial ("**CDT**") for a German OEM in December 2022;

• A final Hub demonstration trial (planned for March 2023) will enable completion of engineering cost study ("**Hub ECS**"). Spoke ECS (completed) and Hub ECS contemplate a 50tpd green-fields integrated LIB recycling operation in an existing industrial park in Germany;

#### Commercial

- Baseload feedstock (end-of-life LIB) was secured from a German OEM for the Hilchenbach Spoke which now has sufficient feed supply for all of 2023 and continues to be ramped-up;
- Primobius revenue generation coming from Hilchenbach Spoke disposal fees and Black Mass product sales as well as plant design and engineering activities for customers;
- Ongoing business development activities in relation to commercial partner pipeline opportunities.

#### Corporate

- Neometals formalised 50:50 ownership of the LIB Recycling Technology with SMS to accelerate Primobius' commercial activities;
- Preparations to relocate key Australian technical team members to Germany (including joint Primobius MD, Merrill Gray) for the final demonstration trial and completions of the 'Hub' engineering cost study;
- Continued recruitment activities to expand the Primobius operational and management teams in line with commercial requirements.

#### **Hilchenbach LIB Disposal Operations**

The Hilchenbach Spoke is providing commercial LIB disposal services and the hydrometallurgical refinery 'Hub' continues to operate as a running demonstration plant. When the Hub runs discrete trials for internal flowsheet optimisation and to generate product samples, the Spoke pauses commercial operation to generate Black Mass feedstock for the Hub.

During the quarter, the Hilchenbach Spoke continued to produce intermediate mixed nickel/cobalt product ("**Black Mass**") as part of ramp-up operations. The typical LIB contains approximately 48% Black Mass which Primobius is currently selling to a number of European off takers on a spot basis with pricing set according to nickel and cobalt content. Importantly, the Hilchenbach Spoke has switched to three shifts daily and is operating 5 days a week.

It should be noted that Primobius' current revenue model contemplates the following sources:

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



#### **Commercial Activities**

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

- A Cooperation Agreement with Mercedes-Benz's ("Mercedes") LIB recycling subsidiary LICULAR GmbH ("LICULAR")("LICULAR Cooperation") for the engineering, equipment supply and installation for a fully integrated, closed loop recycling plant ("LICULAR 10tpd Spoke" followed by "LICULAR 10tpd Hub"), a non-exclusive technology licence and long-term research collaboration (for full details refer to Neometals ASX announcement headlined "Cooperation Agreement with Mercedes Benz" released on 13<sup>th</sup> May 2022); and
- Technology licensing agreement and option agreement to purchase up to 50% of 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 in a proposed 50tpd integrated operation ("Stelco 50tpd Spoke" followed by "Stelco 50tpd Hub") at Stelco's Hamilton Works, Ontario, Canada (for full details refer to Neometals ASX announcement headlined "Battery Recycling – Binding Agreements with Stelco for NA" released on 31<sup>st</sup> December 2021).

The CDT announced during the quarter is a prerequisite for the LICULAR 10tpd Spoke and provides the data for the Hub ECS which must be completed to finalise the LICULAR Hub plant contract and Stelco Spoke and Hub contracts as well as the Stelco Agreements. The staged delivery model enables the production and sale of Black Mass from Spokes during the construction and commissioning of refinery Hubs reducing overall financing requirements.

Primobius' rollout of Spokes addresses the immediate need for safe disposal and recovery of LIB materials, ahead of an absolute requirement to close-the-loop with integrated Hubs producing products as inputs to the manufacturing of LIB precursors. Primobius is actively prosecuting its flexible approach though its three business models – as principal in Hilchenbach, a potential 50:50 joint venture with Stelco and a licensed fully integrated plant supply package to LICULAR.

### Indicative Commercial Rollout Timeline

MarQ 2023	JunQ 2023	SepQ 2023	DecQ 2023		
Spoke Plant Supply Agreement for MB*	Hub Plant Supply Agreement for MB* ECS for 50tpd Hub Plant in Germany	Commence installation of Spoke for MB*	Commence Commissioning Spoke for MB*	Commence Commissioning Hub for MB* Commence installation	
	Spoke Plant Supply Agreement for Stelco*	Consider Investment decision to acquire up to 50% equity in Stelco Recycling SPV *		of Spoke for Stelco Recycling SPV*	
Stel	lco Feedstock and Offtake	Negotiations			

\*Subject to Customer Award/Primobius and Neometals Approvals







#### <u>Vanadium Recovery</u> (NMT 100% Intellectual Property) Earning into 50:50 Incorporated Joint Venture with Critical Metals Ltd

Neometals is commercialising its sustainable proprietary vanadium recovery processing technology ("**VRP Technology**") to produce vanadium products for battery and aerospace alloying applications from stockpiles of vanadium-bearing steel making by-product. Neometals is currently evaluating two distinct opportunities in Scandinavia and has ambitions to build a pipeline of suitable feedstock sources to increase future production:

- 1. 'VRP 1' (SSAB feedstocks, plant location Pori, Finland); and
- 2. 'VRP 2' (H2GS feedstock, plant location Boden, Sweden).

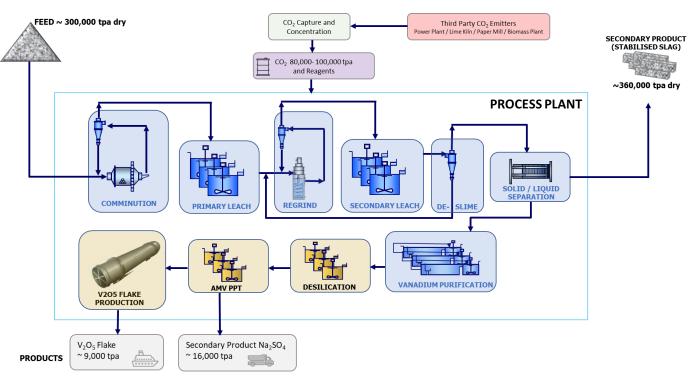
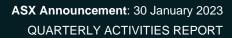


Figure 4: Project flowsheet proposed VRP1 processing plant at Tahkoluoto port, Pori, Finland

The vanadium recovery business offers a compelling opportunity which is underpinned by:

- Access to very high-grade vanadium feedstocks without upstream mining costs/risk/carbon footprint;
- Potential lowest-quartile operating costs (for full details refer to Neometals ASX announcement headlined "Vanadium Recovery Cost Study" released on 8<sup>th</sup> July 2022).
- 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:
  - 1. the absence of mining and a processing route requiring the use and potential capture CO2; and
  - 2. potentially saleable carbonate by-product which sequesters CO<sub>2</sub>.





Neometals and unlisted Scandinavian-focused explorer, Critical Metals Ltd ("**Critical**"), are jointly evaluating the feasibility of recovering high-purity vanadium pentoxide (" $V_2O_5$ ") from high-grade vanadium-bearing steel by-product ("**Slag**") in Scandinavia. Under the formal collaboration agreement between the parties, Neometals is funding and managing the evaluation activities, and can elect to become a 50% shareholder in an incorporated JV (Recycling Industries Scandinavia AB ("**RISAB**")) with Critical. Critical is responsible for advancing government and environmental approvals for VRP1 and managing the SSAB and H2GS relationships.

Critical has executed a conditional agreement (**Slag Supply Agreement**) with SSAB EMEA AB and SSAB Europe Oy, subsidiaries of SSAB (**SSAB**), a steel producer that operates steel mills in Scandinavia. Slag is a by-product of SSAB's steel making operations.

#### **Activity Summary**

#### Technical

With support from Nordic engineering group Sweco Industry Oy, Neometals completed an AACE<sup>®</sup> Class 3 engineering cost study ("**VRP1 ECS**") which confirmed the potential for lowest quartile operating costs. Feasibility study ("**VRP1 FS**") activities are materially complete and will include the cost estimates from the VRP1 ECS (for full details refer to Neometals ASX announcement headlined "Vanadium Recovery Cost Study" released on 8<sup>th</sup> July 2022).

VRP1 FS evaluation includes considerations around life cycle assessment ("LCA") to quantify environmental impact and to compare against conventional  $V_2O_5$  production from mined sources. An independent ISO-compliant cradle-to-gate LCA is being commissioned by Minviro Ltd. Results from the LCA will align with completion of the FS in MarQ 2023.

#### Commercial

During the quarter Neometals announced that The Regional State Administrative Agency for Southern Finland granted an environmental permit for the VRP1 operation with associated infrastructure. The permit authorises, subject to a number of conditions, the production of approximately 9,000tpa of  $V_2O_5$ .



Figure 5: Aerial schematic showing location for the proposed VRP1 processing plant at Tahkoluoto port, Pori, Finland



Critical's wholly owned subsidiary, RISAB, is the VRP1 special purpose vehicle and counterparty to the original binding Slag Supply Agreement with SSAB for approximately 2Mt of Slag. RISAB and Critical are in advanced negotiations with SSAB regarding an updated binding Slag Supply Agreement to include a right of first refusal, on an as available basis, to additional Slag volumes and revised timetable milestones (*for further details see reference made to the non-binding letter of intent between the parties in the ASX announcement headlined "Vanadium Recovery Cost Study" released on 8<sup>th</sup> July 2022).* 

RISAB has engaged leading Nordic investment bank Aventum Partners to lead the project financing, strong interest has been received from investment and commercial banks in Europe.

#### Corporate

Formal agreements to formalise Neometals 50% interest in VRP1 and technology license for the project's incorporated joint venture company are targeted for MarQ 2023 completion.

MarQ 2023	JunQ 2023	SepQ 2023	DecQ 2023	Q1 2026
Finalise New Supply Agreement with SSAB Complete Feasibility Study &	Term Sheets for Debt Financing RISAB making a positive FID on or before 30 June	RISAB pre-payment for 700kt of slag stockpiled at Lulea** Commence civil works for slag	First slag being transported to Tahkolouto** Commence civil works for	First production from the plant**
LCA Execute SHA for 50% of VRP SPV (RISAB) & Technology Licence		storage	processing plant Neometals equity contribution into RISAB for debt drawdown	

\* Subject to successful studies and Neometals/Critical Metals Board approval \*\* Subject to FID, approvals and finance

#### Figure 6: VRP Indicative Timeline

#### VRP 2 (H2GS)

In MarQ 2021, Neometals announced that Critical (via RISAB) entered into a non-binding memorandum of understanding with H2 Green Steel AB ("H2GS") ("H2GS MoU"). The H2GS MoU outlines an evaluation framework on a potential new source of vanadium bearing Slag that could underpin a second, larger vanadium production operation ("VRP2") capable of processing 400,000tpa of Slag. The H2GS MoU also outlines key commercial terms for a potential Slag supply agreement.

#### **Activity Summary**

No activity during the quarter.

Nm



Figure 7: Map showing potential Vanadium Recovery Plants (Pori (SSAB Feed) and Boden (H2GS Feed)) and SSAB Slag stockpiles





<u>Lithium Chemicals</u> (Intellectual Property held in Reed Advanced Materials PL – NMT 70%, Mineral Resources Ltd 30%) Reed Advanced Materials PL ("RAM") Earning into 50:50 JV with Bondalti Chemicals SA

Neometals, through RAM, is commercialising its proprietary process (ELi® Processing Technology ("ELi®")) to produce lithium hydroxide from lithium chloride solutions using electrolysis. A feasibility study in 2016 indicated the potential for ELi® to significantly reduce the cost and carbon footprint associated with consumption and transport of carbon-intensive reagents used in conventional lithium processes.

ELi® has been tested on synthetic and actual lithium sources, from both hard rock and brine resources to semi-pilot scale and has the flexibility to produce a lower carbon footprint lithium carbonate at a nominal incremental cost from the sparging of carbon dioxide through the lithium hydroxide solution. This key advantage of ELi® eliminates the need for traditional lithium carbonate causticising production steps. RAM holds 15 granted patents in the hard rock and brine producing countries and has a further 16 pending national phase patents.

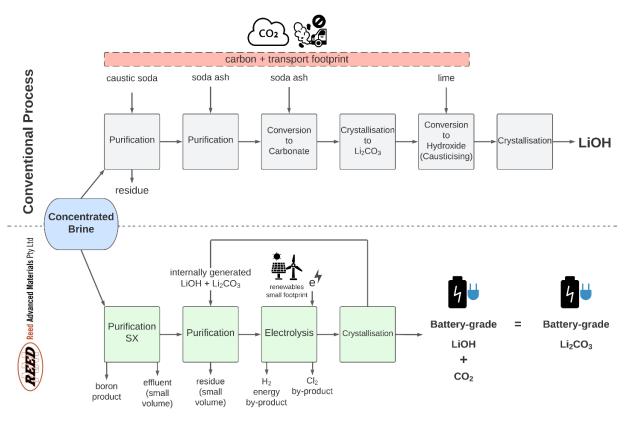


Figure 8: Schematic showing a comparison of the conventional flowsheet for the production of lithium hydroxide from brines vs the patented ELi process.

RAM can potentially deploy ELi® as principal or in joint venture with other partners, to generate revenue from merchant conversion and/or toll processing of lithium raw materials. Further, the business model also accommodates licensing the technology in return for royalty payments.



#### Bondalti (Estarreja) 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. Bondalti is part of the Jose De Mello Group, one of Portugal's largest conglomerates, family owned and founded in 1898.

Bondalti and RAM are co-funding evaluation activities required for a decision to form a 50:50 incorporated joint venture ("**JVCo**") to construct and operate a lithium refinery ("**Refinery**") at Bondalti's extensive chloralkali operations in Estarreja, Portugal. The evaluation activities include pilot testing and completion of a feasibility study ("**ELi® Feasibility Study**"). Upon completion of the ELi® Feasibility Study a decision to incorporate the JVCo will be made to enable the construction of a Demonstration Plant and commencement of the Front-End Engineering and Design Study ("**ELi® FEED Study**"). Upon incorporation RAM will provide a royalty free licence in the territory of the EU Patent Treaty.

#### **Activity Summary**

#### Technical

- Feed for bench-scale test work secured (brine source) and purification and electrolysis trials underway with a metallurgical consultant in Canada. Bench tests will confirm, amongst other things, process parameters and amenability of same feed source to supply the larger scale JunQ 2023 continuous pilot trials;
- Engineering cost study activities well-advanced for commercial ~25,000tpa lithium hydroxide operation using RAM's ELi® process at Bondalti's Estarreja chlor-alkali plant in Portugal and on track for completion in SepQ 2023;
- Engineering design work underway for the demonstration plant to be constructed in Portugal in FY 2024;
- Further metallurgical test-work outside the Eli Cooperation (including ongoing flowsheet development works for spodumene processing);

#### Commercial

• Commercial dialogues with aspiring or existing producers of lithium brine concentrates to investigate offtake or toll treating of future lithium chloride intermediate (in the EU and elsewhere) into lithium chemicals.

MarQ 2023	JunQ 2023	SepQ 2023	DecQ 2023	1H 2024
Complete Bench- scale Trials Ship Pilot Trial brine feedstocks to North America Commence Demo Plant engineering and design	Commence Pilot Trials Complete AACE Class 3 ECS by Primero - Bench Demo Plant long lead items* Vendor selection AACE Class 2 Study	Complete Pilot Trials Updated AACE CI.3 ECS by Primero - Pilot Decision to Incorporate Bondalti JV * Commence AACE Class 2 Study	Commence construction of Demo Plant Ship Demo Trial feedstocks to Portugal	Complete construction of Demo Plant Commence Demonstration Trials

Figure 9: Indicative Timeline for the Bondalti (Estarreja) Project



### **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<sub>2</sub> and 0.44% V<sub>2</sub>O<sub>5</sub>)\*, containing the world's second highest-grade hard rock titanium Mineral Resource (53.6Mt at 21.17% TiO<sub>2</sub> and 0.63% V<sub>2</sub>O<sub>5</sub>)\* and high-grade vanadium resource (64.9Mt at 0.82% V<sub>2</sub>O<sub>5</sub> and 16.9% TiO<sub>2</sub>) subsets (referred to as the Eastern and Central Bands respectively) based on the latest Neometals 2018 Mineral Resource Estimate (\*for full details refer to ASX announcement headlined "Barrambie Project - Mineral Resource Update" released on 17 April 2018 and Table 1 at end of document).

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.

Neometals has invested in excess of \$A40 million in the acquisition, exploration and evaluation of Barrambie since 2003. The Company has in more recent times maintained a primary focus on recovering a titanium product from Barrambie to realise maximum value for shareholders.

Neometals has a memorandum of understanding with Jiuxing Titanium Materials (Liaonging) Co. Ltd ("**Jiuxing MoU**") ("**Jiuxing**") (\*\**for full details refer to ASX announcements headlined "Barrambie - MOU for Cornerstone Concentrate Offtake" released on 16<sup>th</sup> April 2021 and "Barrambie - Pilot Plant and Offtake Update" released on 23<sup>rd</sup> December 2021*). Jiuxing is one of the leading chloride-grade titanium slag producers and is the largest in north-eastern China. Importantly, the Jiuxing MoU builds on, and complements, the existing IMUMR MoU.

The Jiuxing MoU<sup>\*\*</sup> contemplates the parties negotiating and entering into a binding formal offtake agreement for the supply of 800,000 dtpa of mixed gravity concentrate ("**MGC**") or 500,000 dtpa of ilmenite and 275,000 dtpa of iron-vanadium concentrate, on a take-or-pay basis for a period of 5 years from first production.

#### Activity Summary

#### Commercial Scale Smelting Trials

During H1 2022, a mixed gravity bulk sample was prepared from Barrambie mineralisation with approximately 40t delivered to Jiuxing in China. Jiuxing then blended the Barrambie MGC with other commercially available titanium sources to produce feedstock suitable for an industrial scale smelter trial.

The commercial scale smelting trials delivered highly encouraging results with production of +90% TiO<sub>2</sub> chloride slag from the industrial scale smelting trial of a blend of Barrambie MGC with other ilmenites. The +90% TiO<sub>2</sub> titanium chloride grade slag produced was within specification of what is a well-established standard titanium industry feedstock.

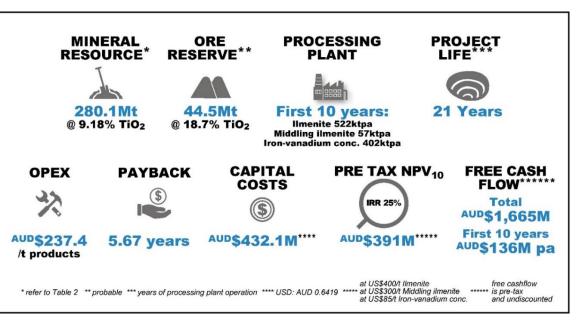
Cornerstone offtake of MGC is a key pillar in Neometals' Barrambie strategy of deriving value from the titanium, vanadium and iron mineral resource on a capital light basis with refining activities being undertaken by purchasers overseas. Barrambie is unique in that it's a tier 1 project offering a range of development alternatives including the possibility of direct shipping of ore, beneficiation of ore into MGC or further processing of MGC to produce separate ilmenite and vanadium rich magnetite products.

\*\*The Jiuxing MoU is a memorandum of understanding to allow Jiuxing to conduct large scale test work and negotiate a binding offtake agreement. There is no guarantee that any binding formal agreement will result from the cooperation under the Jiuxing MoU or that any binding formal agreement will reflect the key commercial terms set out in the MOU given that these arrangements are subject to the testing and evaluation work to be completed under the Jiuxing MOU.



#### Pre-feasibility Study

Neometals announced the successful completion of an Association for the Advancement of Cost Engineering ("**AACE**") Class 4 +/- 25% pre-feasibility study ("**Barrambie PFS**") for Barrambie during the period. Following closely behind smelting trial results, the PFS delivered compelling financial metrics which can be seen below (*for full details refer to ASX announcement headlined "Barrambie Titanium – Robust PFS Results" released on 17<sup>th</sup> November 2022):* 



#### Figure 10: Highlights of Barrambie PFS

The Barrambie PFS assumes a mine, crush, mill and beneficiate ("**CMB**") option at Barrambie on predominantly Eastern Band titanium-rich mineralisation to produce a MGC (see Figure 12). MGC would then be subject to a low-temperature reduction roast ("**LTR**") and magnetic separation at a second site alongside the Dampier to Bunbury Gas Pipeline east of Geraldton to produce separate ilmenite and iron-vanadium concentrate streams (see Figure 13). The LTR pathway can utilise readily available product market indices to provide a robust pricing basis for the Barrambie PFS financials and will support final binding offtake dialogue.

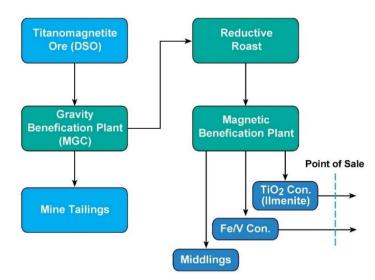


Figure 11: Simplified overview of flowsheets investigated in Barrambie PFS



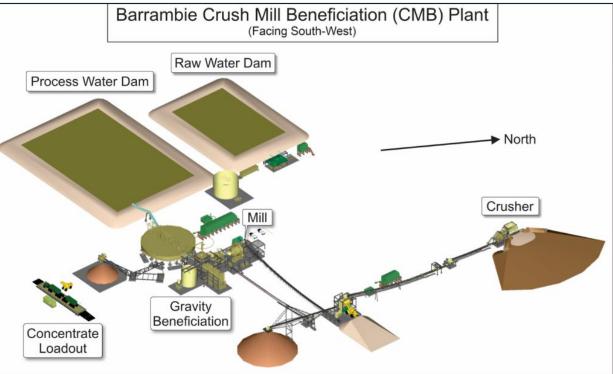


Figure 12: 3D Representation of Barrambie CMB Site

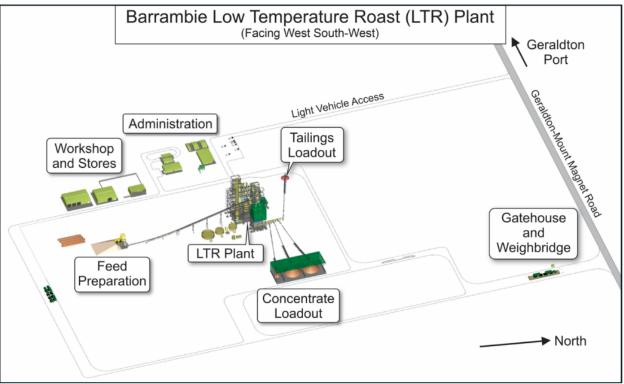


Figure 13: 3D Representation of Barrambie LTR Site near DBNGP



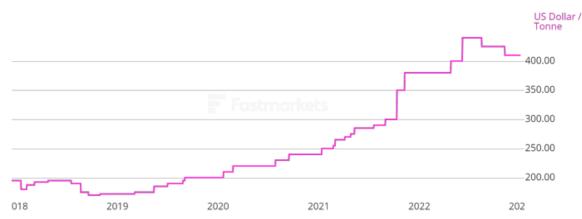
### Commercial

The successful trials in Jiuxing's commercial production facility represents the final stage of technical due diligence required for Jiuxing and Neometals to begin negotiation on a binding formal offtake agreement. The outcomes of the trials have also increased interest from Chinese and Western titanium producers for offtake of both MGC and ilmenite products.

Data from the smelting trial and the Barrambie PFS will be used by potential 'build-own-operate' partners for the CMB plant and operation at Barrambie. This development model was used successfully by Neometals and its partners to develop its former Mt Marion Lithium Project in 2015, which is now the world's second largest producer of spodumene (hard-rock lithium).

High quality titanium feedstocks are in strong demand notwithstanding the current global economic conditions, the current prices from Fastmarkets, are provided below.

# Ilmenite



Mid MB-ILM-0004 - Ilmenite concentrate, 47-49% TiO2, cif China, \$/tonne

Figure 14: Ilmenite pricing for low quality ilmenite feedstocks. Source Fastmarkets 19th January 2023

#### Corporate

In parallel with its evaluation and commercial activities, Neometals continues to assess the optimal strategy to return Barrambie value to shareholders, to this end Azure Capital were appointed advisor for the project.

MarQ 2023	JunQ 2023	SepQ 2023	DecQ 2023	1H 2024
0				
Commence	Conditional Term	Complete Variability	Vendor selection for	Complete DFS
Variability Test work	Sheet for Offtake of	Studies	Barrambie CMB	
Complete Project	MGC		plant BOOT	Commence civil
		Commence DFS	contract*	works for Barrambie
Strategy/Corporate	Vendor selection for	E		CMB plant**
Structure Review	AACE Class 3 ECS	Formal Offtake		
	section of DFS	Agreement with Jiuxing* for MGC		

<sup>\*</sup>Subject to Board Approval

\*\* Subject to extension of timeline for Ministerial Statement 911 to construct project

Figure 15: Barrambie Indicative Timeline

### CORPORATE

#### **Financial**

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

As at 31 December 2022 Neometals held 879,812,014 ordinary fully paid shares (~26% of the issued capital) in Hannans on an undiluted basis. During the December quarter Hannans raised additional capital and commenced trading after re-compliance obligations were met.

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

Neometals holds 19% of unlisted public company Critical Metals Ltd, a company which now houses the Scandinavian mineral assets previously held by Hannans and is collaborating with Neometals on Scandinavian LIB recycling and vanadium recovery opportunities.

#### Other Investments

The market value of the Company's other investments as at 31 December 2022 totalled \$11.3 million.

#### Finances (unaudited)

Cash and term deposits on hand as of 31 December 2022 totalled A\$42 million, including \$0.2 million in restricted use term deposits supporting contractual obligations. The Company has net receivables and investments totalling approximately \$29.4 million.

Related Party payments for the quarter outlined in the ASX Appendix 5B released contemporaneously at section 6.1 total \$295,000 and are made up of Director fees and superannuation.

#### Issued Capital

The total number of shares on issue a at 31 December 2022 was 552,741,176.

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

#### ENDS

For further information, please contact:

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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="http://www.neometals.com.au">www.neometals.com.au</a>.

17/04/2018 Barrambie – Updated Barrambie Mineral Resource Estimate
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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 form the original market announcements.





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*Refer to Neometals ASX relea title 'Updated Barrambie Miner

	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

	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

High TiO <sub>2</sub> Resource	(14% TiO <sub>2</sub> cut-off) <sup>2</sup>	
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	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

ease dated 17 April 2018 eral Resource Estimate'

Based on Cut-off grades of ≥10% TiO<sub>2</sub> or ≥0.2% V<sub>2</sub>O<sub>5</sub>
 The high-grade titanium and vanadium figures are a sub-set of the total Mineral Resource. These figures are not additive and are reporting the same block model volume but using different cut-off grades.



## **APPENDIX 1: TENEMENT INTERESTS**

As at 31 December 2022, 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	E20/1030	100%	Pending
Barrambie	E20/1037	100%	Pending
Barrambie	L57/0030	100%	Live
Barrambie	L57/0064	100%	Pending
Barrambie	L57/0065	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	100%	Live



### Changes in interests in mining tenements

Interests in mining tenements acquired or increased

Project Name	Licence Name	Acquired or Increased
N/A	N/A	N/A

#### Interests in mining tenements relinquished, reduced or lapsed

Project Name	Licence Name	Acquired or Increased
N/A	N/A	N/A

#### About Neometals Ltd

Neometals is an emerging, sustainable battery materials producer. The Company has developed a suite of green battery materials processing technologies that reduce reliance on traditional mining and processing and support circular economic principles.

Neometals' three core battery materials businesses, listed below, are commercialising these 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, in partnership with Stelco in Canada is expected to reach investment decision in JunQ 2023;
- 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, underpinned by a 10-year Slag supply agreement with leading Scandinavian steelmaker SSAB. Decision to form 50:50 JV with Critical Metals expected MarQ 2023 with project investment decision expected June 2023. 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 patented ELi® electrolysis process owned by RAM (70% NMT, 30% Mineral Resources Ltd). Co-funding pilot plant and evaluation studies on a 25,000tpa operation in Estarreja with Portugal's largest chemical producer, Bondalti Chemicals S.A.