Neometals
All the right elements

QUARTERLY ACTIVITIES REPORT
For the quarter ended 31 March 2022

HIGHLIGHTS

CORPORATE

- Cash balance A$65.2 million, receivables and investments of A$46.5 million and no debt; and
- Neometals shares admitted to trading on the AIM market of the London Stock Exchange.

DOWNSTREAM - MATERIALS PROCESSING

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

- Demonstration Plant Stage 2 Refining trials complete and AACE Class 3 Engineering Cost Study for 50tpd integrated (Stage 1 & 2) operation on track for completion by end of June 2022;
- Primobius officially opened its 10tpd commercial Stage 1 plant in Hilchenbach, Germany with federal operating permit obtained post quarter-end and commercial operations scheduled to commence mid-May 2022;
- Mercedes-Benz announced its selection of Primobius as its technology partner, and to provide the design and construction of a 10tpd integrated plant at its production facilities in Kuppenheim, Germany; and
- Front End Engineering (FEED) studies for 50tpd Stage 1 plant for Stelco advanced under a technology license and buy-in option arrangement.

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

- Feasibility Study (AACE Class 3) for SSAB project (VRP1) advanced during the quarter and is on track for completion by end of June 2022;
- VRP1 Finnish plant site secured by project partner under long-term lease agreement with Port of Pori;
- VRP1 by-product evaluation trials result in offtake Letter of Intent from Betolar for potential use in green cement-based building products; and
- Community and Stakeholder Days held in Pori and attended by members of Neometals' and Critical Metals' board and senior management teams.

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

- Engagement of Primero to update previous AACE Class 3 Engineering Cost Study for a 20,000tpa lithium hydroxide operation located at Bondalti's Estarreja chlor-alkali operation in Portugal, on track for completion in the DecQ 2022; and
- Commencement of engineering and procurement activities for the proposed Pilot Plant to prove the process at scale of lithium feedstocks from both brine and hard rock sources.

UPSTREAM – MINERAL EXTRACTION

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

- Completion of gravity concentrate bulk samples from Menzies Pilot Plant and shipment post quarter-end to Jiuxing for commercial smelting trials planned to commence JunQ 2022; and
- AACE Class 4 Pre-feasibility Study advanced and on track for completion in SepQ 2022.

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COMPANY OVERVIEW

Neometals innovatively develops opportunities in minerals and advanced materials essential for a sustainable future. We leverage our proprietary, green process technologies to generate battery materials projects with unparalleled exposure to commodities most impacted by the energy storage megatrend.

We build value, de-risk and develop these long-life projects with strong partners having a strategic focus on increasing margins through integration down the value chain. We have a growing suite of sustainable downstream, recovery and recycling projects, supporting the global transition to more circular supply chains and cleaner energy. Our core projects are:

Downstream Materials Processing:

1. *Lithium-ion Battery Recycling* – commercialising a proprietary process for recovering nickel, cobalt and other valuable materials from spent and scrap lithium-ion batteries through a 50:50 incorporated JV with SMS group called Primobius GmbH. Primobius is targeting commencement of a 10tpd principal German commercial shredding operation during H1 2022. Development decision on larger 50tpd LIB Recycling plants in H2 2022;
2. *Vanadium Recovery* – sole funding evaluation studies for a 50:50 joint venture with Critical Metals Ltd to recover high-purity vanadium pentoxide from processing steelmaking by-products ("**Slag**") from leading Scandinavian steelmaker SSAB. Underpinned by a 10-year Slag supply agreement, Neometals is targeting an investment decision to develop a commercial-scale processing plant in Dec 2022; and
3. *Lithium Chemicals* - commercialising a proprietary process ("**ELi®**") to produce lithium hydroxide from lithium solutions (lithium chloride) using electrolysis to avoid costly and carbon intensive reagents used in traditional chemical conversion. Technology 70:30% owned by Neometals and Mineral Resources Limited. Bondalti Chemicals S.A is co-funding and piloting the process in Portugal as part of potential 50:50 JV in European Union.

Upstream Mineral Extraction:

- *Barrambie Titanium and Vanadium Project* - one of the world's highest-grade hard-rock titanium-vanadium deposits. Working towards a development decision in Dec 2022 with potential operating JV partner IMUMR and potential cornerstone product off-taker, Jiuxing Titanium Materials Co.

Figure 1 – *Location map of Neometals' Core Projects together with partner developments*

DOWNSTREAM – MATERIALS PROCESSING

Lithium Battery Recycling Project
Neometals 50% via Primobius GmbH, a 50:50 incorporated JV with SMS group GmbH (NMT 100% Intellectual Property, SMS earning 50%)

Primobius is commercialising a sustainable proprietary process flowsheet developed originally by Neometals targeting the recovery of battery materials contained in production scrap and end-of-life lithium-ion batteries (**LIBs**) that might otherwise be disposed of in land fill or processed in high-emission pyrometallurgical recovery circuits. The process flowsheet ("**LIB Recycling Technology**") is designed to recover nickel, cobalt, lithium, copper, manganese and carbon into saleable products that can be reused in the battery supply chain. Design principles prioritised maximum safety, environmental sustainability and product recoveries to support the circular economy and decarbonisation.

A pilot trial ("**Pilot**") at SGS Lakefield, Canada in 2019/20 successfully produced cathode-grade nickel and cobalt sulphate products which collectively represent approximately 80% of the value of the basket of products recovered. Demonstration trials in Hilchenbach, Germany have been concluded and data generated is being used as the basis for feasibility assessment at 'feasibility' level of accuracy.

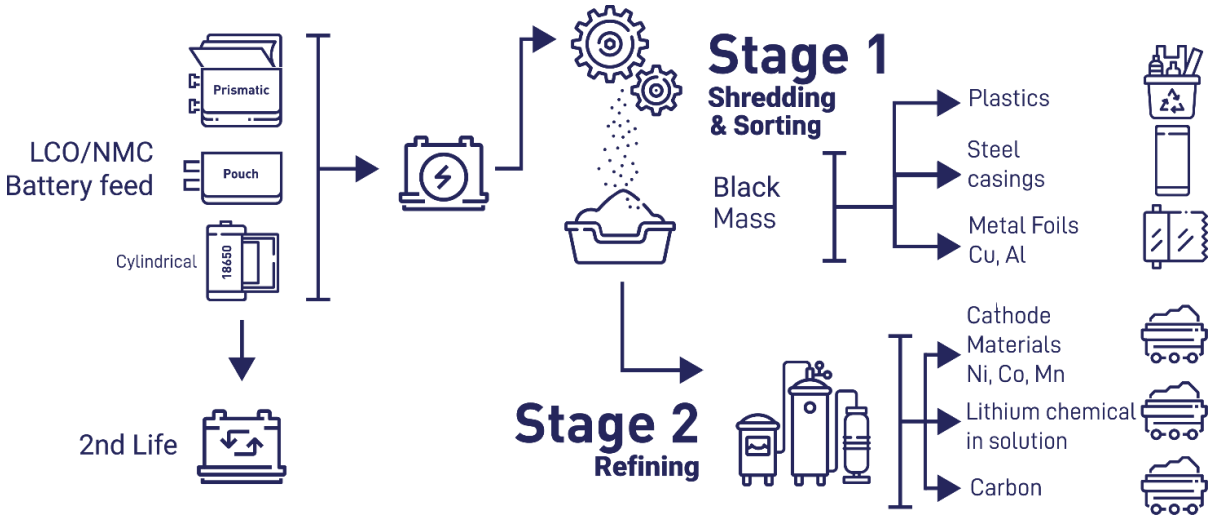

Figure 2 - *High level flowsheet showing the materials generated from 'Shredding and Beneficiation' and 'Refining' stages of the LIB Recycling Technology*

The LIB Recycling Technology, comprises two stages:

1. Shredding and beneficiation to physically separate components and remove metal casings, electrode foils and plastics from the active materials ("**Shredding Circuit**"); and
2. Leaching, purification and precipitation to produce predominantly refined chemical products via the hydrometallurgical processing facility ("**Refining Circuit**").

Primobius GmbH, incorporated JV with SMS

Neometals entered into an incorporated 50:50 joint venture ("**JV**") with SMS group GmbH ("**SMS group**"), called Primobius GmbH ("**Primobius**"). Primobius was incorporated to co-fund and complete final stage evaluation activities and to commercialise the LIB Recycling Technology.

Any positive financial investment decisions to construct commercial plants (≥50tpd), will involve Neometals contributing its share of funding to the JV. SMS will perform the engineering design and cost studies in addition to its share of funding. SMS has the right of first offer to provide engineering, procurement and construction of each recycling plant Primobius undertakes. On a best endeavours basis, procure debt financing for no less than 50% of the capital expenditure (*for full details refer to Neometals ASX announcement entitled "Neometals and SMS create Lithium Battery Recycling JV" released on 3rd August 2020*).

Project Activities

During the quarter, Primobius made strong progress towards technical and commercial validation of its sustainable LIB Recycling Technology.

*Demonstration Plant ("**DP**")*

The DP serves as a showcase for validating earlier pilot plant results and will generate evaluation products for potential customers, partners and off-takers. The fully-integrated continuous DP trials constitute the main evaluation activity required for the JV shareholders to consider an investment decision relating to Primobius' first commercial recycling plant with a throughput capacity at 50tpd (~20ktpa).

The DP is located in a dedicated building leased from SMS group within its engineering competence centre at Hilchenbach. LIB feedstocks for the DP trials have been secured from electric vehicle and energy storage system manufacturers. The Stage 1 Shredding Circuit has been upgraded and is ready for the commencement of commercial operations in May 2022. Stage 2 Refinery Circuit trials are complete and will be utilised for ongoing optimisation test-work and for discrete customer trials to verify Primobius' capability to safely, sustainably and ethically dispose of their hazardous LIBs.

Significant progress was made during the quarter with:

- DP Integrated Shredding and Refining trials successfully completed;
- Announcement of Mercedes' selection of Primobius as its recycling technology partner and intention to cooperate on LIB recycling with a 10tpd integrated plant supplied by Primobius;
- Official opening of Primobius' first commercial LIB recycling plant ("**10tpd Shredding Plant**") in Hilchenbach, Germany;
- Completion of the Stage 1 AACE Class 3 Engineering Cost Study ("**ECS**") using DP data. Advancement of the Stage 2 Refinery component of the 50tpd Integrated Plant;
- Significant progress towards Shredding Circuit "Product Readiness" by SMS. The offering of plant supply contracts via SMS to Stelco will trigger a one-month option period in which to exercise buy in of up to 50% Stelco SPV equity and financial investment decision ("**FID**") on Primobius' first 50tpd (~20,000tpa) recycling plant; and
- Post the quarter end, Neometals announced that Primobius has received its 'BlmSchG' operating permit for its 10tpd Shredding Plant and that first intermediate active material ("**Black Mass**") product produced during the demonstration trials will be delivered to a German metal recycler in April.

Figure 3 – *Primobius Managing Directors Horst Krenn and Michael Tamlin (l-r) officially open the 10tpd Shredding Plant*

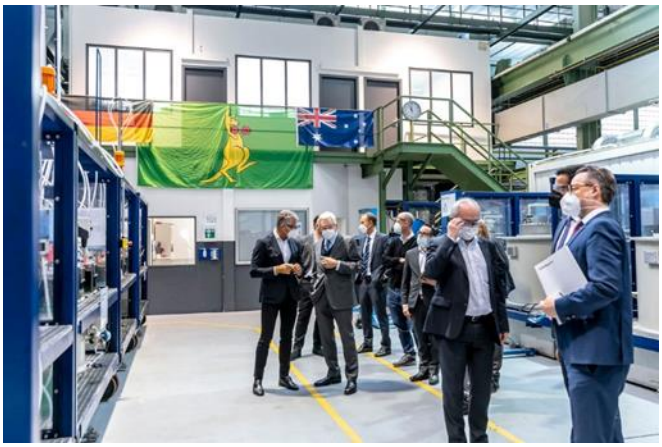

Figure 4 – *Guests at the Primobius Opening Ceremony viewing the Refining Circuit*

Figure 5 – *Primobius Opening Ceremony Presentation*

Figure 6 – *Primobius produced battery materials*

Commercial Activities

Mercedes Cooperation

During the quarter, Mercedes-Benz AG ("**Mercedes-Benz**") made a press release ("**Mercedes Release**") advising that its wholly owned subsidiary LICULAR GmbH ("**LICULAR**") plans to cooperate with Primobius on LIB recycling. As part of its global strategy for recycling automotive battery systems, Mercedes-Benz is establishing a LIB recycling plant at its Kuppenheim operations in Southern Germany. As technology partner, Primobius will be responsible for the design and construction of the proposed recycling plant.

The proposed recycling plant at Kuppenheim marks Mercedes-Benz's first entry into the field of battery recycling. As set out in the Mercedes Release and based on preparatory work carried out by Primobius and LICULAR, Neometals expects the recycling plant will have a nominal capacity of 2,500 tonnes per annum (up to 10 tonnes per day) and will be built in two stages with the first stage (mechanical dismantling) commencing production in 2023.

The formal agreements relating to the cooperation are expected to be signed between Primobius and LICULAR in the June quarter and this process follows negotiations under an earlier informal non-binding memorandum of understanding between the parties.

Lithium battery recycling supports conservation of resources, decarbonisation and supply chain resilience and Primobius is excited to assist Mercedes in its goal to re-use recovered materials for the manufacture of new cells for Mercedes-EQ vehicle models.

PLAY VIDEO: *Mercedes-Benz Battery Recycling* https://www.neometals.com.au/mercedes-benz-video/

Stelco

Stelco is a wholly-owned subsidiary of Stelco Holdings Inc. ("**Stelco**"), a Toronto Stock Exchange-listed steelmaking company headquartered in Hamilton, Ontario. Stelco and Primobius entered into a MoU in 2021 to evaluate future joint LIB recycling operations (*for full details refer to Neometals ASX announcement entitled "Li Battery Recycling - MOU with Stelco for North America" released on 27th May 2021*).

The parties worked together towards outlining a significant North American LIB recycling business plan and have entered into binding formal arrangements that allow Stelco to accelerate its sourcing of feedstock ahead of battery processing operations. Primobius has an option to secure equity ownership of the Stelco battery recycling special purpose vehicle ("**Stelco SPV**").

Specifically, Primobius has exclusively licenced its LIB recycling technology to Stelco SPV ("**Licence**") in the field of end-of-life vehicle battery processing in North America to enable Stelco to advance commercial LIB feedstock sourcing agreements and advance its construction and operating permit approvals processes. Under the option agreement ("**Option**"), Primobius can elect to acquire between 25% and 50% equity in the Stelco SPV by contributing its pro-rata share of Stelco SPV's sunk evaluation and development costs as a condition of exercise. If the Option is not exercised by Primobius, the Licence conditions award Stelco the exclusive rights to utilise the Recycling Technology in North America to recycle LIBs removed from end-of-life electric vehicles and Primobius will be entitled to a gross revenue royalty.

The formal agreements contemplate Stelco SPV evaluating a 50tpd (18,250tpa) integrated Shredding ("**Spoke**") and Hydrometallurgical Refinery ("**Hub**") located at its Hamilton Works, Canada. Primobius is capable of supplying to the Stelco SPV, a network of 50tpd Shredding plants across the licenced territories (Canada, USA, Mexico) to feed a larger scale, centralised hydrometallurgical refining Hub as and when required. The Stelco SPV will help meet the need for multiple large recycling facilities to manage significant anticipated volumes from end-of-life electric vehicle batteries originating from the World's fastest growing cell making jurisdiction.

During the quarter, the Stelco SPV has been maturing its feedstock targeting activities with the benefit of the LIB Recycling Technology Licence in hand. Further, as part of the Stelco SPV evaluation activities, front end engineering and design work has culminated in the completion of a FEL1 ("**Front End Loading**") study and commencement of the FEL2 study that will inform the Primobius decision to exercise its Option (FID or financial investment decision) to co-own the Stelco SPV.

Pipeline

With the benefit of successful DP trials, a showcase facility available for site tours, market validation from the 10tpd Shredder Plant being commercially ready and the support shown by Mercedes and Stelco, the already mature Primobius commercial pipeline is gaining significant momentum. Preceding the Hilchenbach opening event, Neometals / SMS management and Directors took the opportunity to hold a strategy day which has shaped the initial Primobius growth plan and commercial rollout.

While the 10tpd Shredder Plant will operate a disposal service generating near-term revenue, the pending outcome of feasibility studies will support the first investment decision on a large-scale plant (50tpd). A notional site in Germany will be used as the basis for its 50tpd Shredding Circuit ECS and the data from the ECS, when combined with the FEL2 results generated by the Stelco SPV, can inform a final investment decision on a North American operation with Stelco. Neometals remains of the view that its initial commercial rollout (North America and Europe) will include near-term plants constructed and operated in joint venture rather than on an as 'principal' basis for Primobius.

	Primobius 10tpd Shredder	10tpd Integrated	STELCO 50tpd Integrated	Primobius 50tpd Integrated	ITOCHU 50tpd Integrated
Plant Type	Shredding	Shredding/Refining	Shredding/Refining	Shredding/Refining	Shredding/Refining
Product/s	Black Mass	Black Mass & BGMS (1)	Black Mass & BGMS (1)	Black Mass & BGMS (1)	Black Mass & BGMS (1)
Status	Production Ready	Front End Engineering FEL 1	Front End Engineering FEL 2 (Shredder)	Class 3 Engineering Cost Study	Demonstration Trials
Location/s	Hilchenbach Germany	Kuppenheim Germany	Hamilton Works Canada	Germany	Japan
Business Model	Principal	Limited Royalty-Free R&D License	License & JV Option	Principal/JV	MOU fo JV

Figure 7 – *Current status of Primobius' confirmed pipeline | (1) BGMS = Battery Grade Metal Sulphates*

Neometals is advancing towards delivery on its near-term target commercial recycling plants with its partners and continues to progress discussions related to future opportunities in its commercial pipeline.

Indicative Commercial Rollout Timeline

To date, Neometals has been disclosing its indicative timeline for 'evaluation' activities culminating in an investment decision. Originally the investment decision assumed a European plant built and operated as principle but Primobius is dictated by its customers who primarily seek joint venture arrangements. Ahead of providing specifics on the near-term commercial growth strategy, Neometals is now in a position to share an indicative timeline that better reflects some of the commercial steps leading to the investment decision (FID). The FID will be based on Class 3 Shredding Circuit ECS results combined with FEL2 data from the Stelco SPV for a decision on a North American operation including multiple spokes and a centralised hub for integrated recycling.

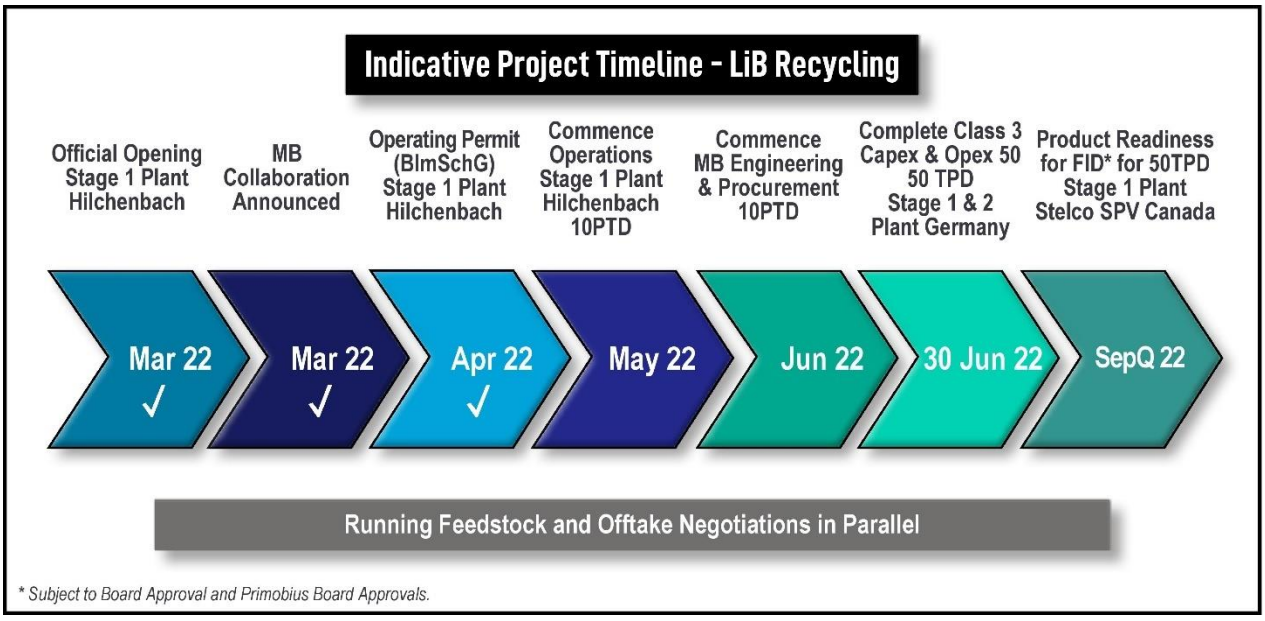

Figure 8 – *LIB Recycling Indicative Timeline*

Vanadium Recovery Project ("VRP")
Earning into 50:50 Joint Venture with Critical Metals Ltd
NMT 100% Intellectual Property

Neometals is exploring opportunities to apply its sustainable proprietary vanadium recovery processing flowsheet ("**VRP Technology**") on stockpiles of vanadium bearing steel manufacturing by-product. Neometals is currently pursuing two distinct partnership opportunities in Scandinavia and has ambitions to build a pipeline of suitable feedstock sources to increase future production:

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

The VRP offers a compelling business case which is underpinned by:

- Access to very high-grade vanadium feedstocks without upstream mining costs/risk;
- Potentially robust economics (VRP1 AACE Class 4 (pre-feasibility) study ("**PFS**") outcomes highlighted a first quartile position on the cost curve (*for full details refer to ASX announcement entitled "Vanadium Recovery Project – Outstanding PFS Results" released on 4th May 2021*);
- Processing flowsheet utilises conventional equipment at atmospheric pressure mild temperatures and non-exotic materials of construction; and
- Likely very low or net zero greenhouse gas footprint given:
    a. the absence of mining and a processing route requiring the use and potential capture CO_2; and
    b. potentially saleable carbonate by-product which sequesters CO_2;

Figure 9 - *Map showing potential Vanadium Recovery Plants (Pori (SSAB Feed) and Boden (H2GS Feed)) and SSAB Slag stockpiles*

The two current opportunities are detailed below:

VRP 1 (SSAB)

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 to fund and manage the evaluation activities, up to consideration of an investment decision. A positive investment decision will lead to a 50:50 incorporated JV with Critical.

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 (*for full details refer to Neometals ASX announcement entitled "High-Grade Vanadium Recycling Agreement" released on 6th April 2020*). Slag is a by-product of SSAB's steel making operations. The Slag Supply Agreement is for 2 million tonnes of Slag and provides a secure basis for the evaluation of an operation capable of processing 200,000 tonnes of Slag per annum without the need to build a mine and concentrator like existing primary producers.

Critical is responsible for advancing government and environmental approvals for VRP1 and managing the SSAB and H2GS relationships.

VRP 2 (H2GS)

In Q3 2021, Neometals announced that Critical (via its wholly owned subsidiary, Recycling Industries Scandinavia AB ("**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.

H2GS is a limited liability Swedish company planning a fully integrated and automated green steel manufacturing plant to be located at Boden in Northern Sweden (located 35km from Luleå). This opportunity compliments the existing VRP1 agreement between Neometals and Critical for planned vanadium production in Finland to recycle Slag generated by SSAB. The H2GS MoU is a significant opportunity as it represents another potential source of valuable feed and highlights the growth profile for application of the sustainable Neometals VRP Technology.

Figure 10 - *Aerial schematic showing location for the proposed VRP processing plant at Tahkoluoto port, Pori, Finland*

Project Development Progress

Evaluation Studies

Being the most advanced opportunity, evaluation studies are currently focussed on VRP1. Together with Nordic engineering group Sweco Industry Oy ("**Sweco**"), Neometals is on track with its AACE Class 3 Feasibility Study with expected accuracy of +/- 15% ("**FS"**).

During the quarter, Sweco progressed project design towards first pass capital cost estimation. The majority of vendor quotations were received and scoping of the necessary vendor test-work commenced. The discussions with suppliers regarding the next stages of design and successful consolidation of the overall plant design are in progress.

Critical (through a subsidiary) executed the VRP1 site lease agreement with the Port of Pori. The lease covers a 20 hectare 'build-ready' industrially zoned site adjacent to a deep water, year-round, port with rail, CO_2 and renewable power access. The FS will be based on a Pori processing site and the study remains on track for June 2022 completion.

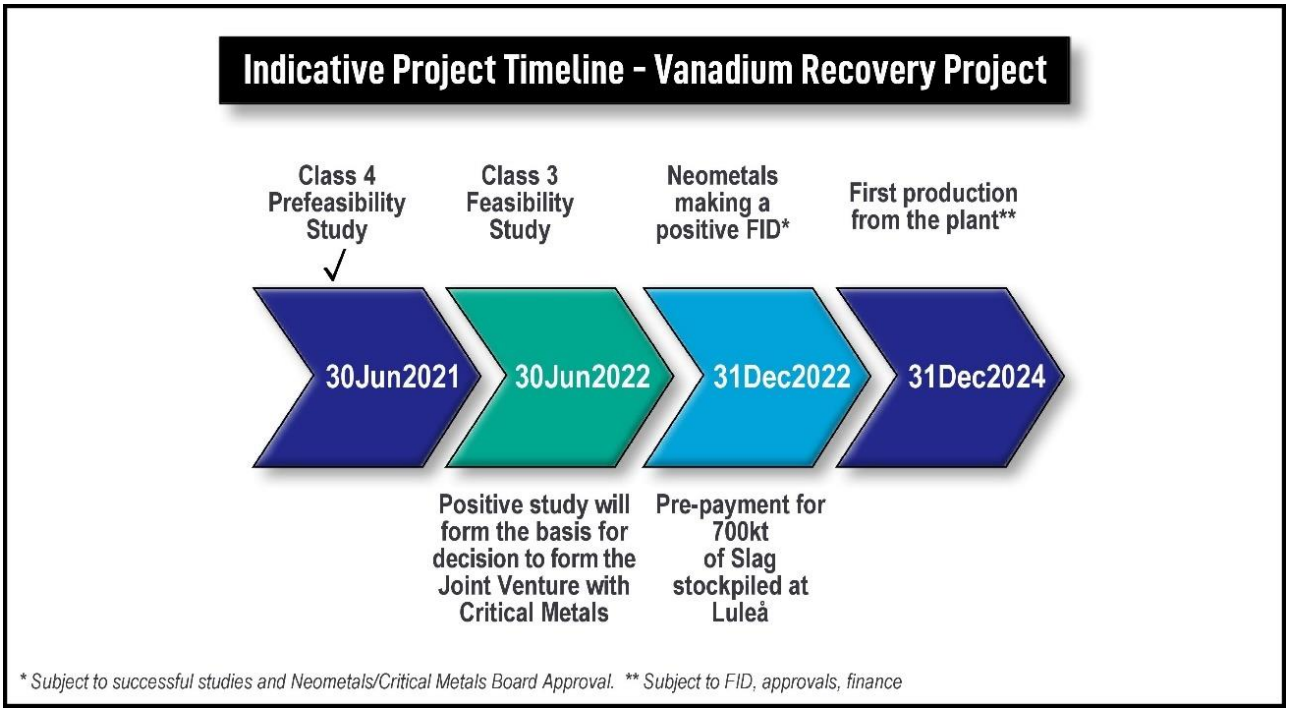

Figure 11 - *VRP Indicative Timeline*

Commercial

Much like Neometals' other processing innovations, the VRP Technology has the ability to spawn multiple projects. At present VRP1 with SSAB is the flagship opportunity followed by VRP2 with H2GS. The Company continues however to pursue other Slag sources that could be amenable to processing using the VRP Technology.

Offtake Partners

The key payable from application of the VRP Technology is V_2O_5 followed, in order of importance, by a leach residue resembling limestone (Stabilised Slag Material ("**SSM**")) and sodium sulphate ("**Na_2SO_4**"). The market for both V_2O_5 and Na_2SO_4 are well established with the former being supply constrained, particularly in Europe. While prospective for building product application, the market for SSM is more nuanced. Neometals was encouraged by the development during the quarter which saw Critical's subsidiary sign a non-binding letter of intent ("**LOI**") with Finnish public limited company Betolar plc **("Betolar")**, to investigate the use of SSM in the production of cement-free concrete.

Betolar has been testing SSM for approximately 9 months already with positive results and is aiming to secure a long-term SSM supply agreement. Betolar does not produce concrete itself, but using its Geoprime® solution, it believes concrete manufacturers could replace more than 10% of the cement used in Finland. This development further reinforces the opportunity for the VRP Technology to support the circular economy.

CO_2 capture and sequestration

Neometals' technology relies upon CO_2 as a reagent in the process. Neometals is currently evaluating a number of options for CO_2 supply and is also developing opportunities to qualify its SSM as a carbon removal media. The VRP Technology seeks to utilise CO_2 captured from emission generators proximal to the VRP sites. As such, CO_2 is essentially neutralised via sequestration in the SSM and re-used in industrial applications. As a potential market participant in the voluntary carbon trading market, Neometals will investigate the steps required to register a methodology in order to generate valuable approved carbon offsets.

As part of the above process, Neometals and Critical are making good progress with potential CO_2 and CO_2 storage providers in Pori.

Permitting and Approvals

Permitting activities are being managed by Critical and its local team of consultants. The initial 'Environmental Impact Assessment' application was made to the Finnish regulators in late November 2021. Feedback received has been overwhelmingly positive. Management was pleased that items identified by the authorities typical to most permitting projects and no unexpected issues were flagged.

Finnish Site Visit

The combined Neometals / Critical executive team and the Neometals Chairman conducted a successful city and site visit to Pori Finland in late March. Activities included a community consultation day followed by a local stakeholder engagement day. Importantly it became clear that the VRP1 is a project of local and national significance and that substantial community goodwill exists. Encouragingly, the City of Pori has shown consistent proactive support for the project.

Figure 12 - *VRP Project Teams from Sweden, Finland and Australia presenting to stakeholders*
Photo: Critical Metals/Tomi Glad

Figure 13 – *Group meeting at Proposed Plant Site, Tahkoluoto Port Photo: Critical Metals/Tomi Glad*

Figure 14 – *Signing of lease with the Port of Pori | Photo: Critical Metals/Tomi Glad*

Figure 15 – *Betolar's Head of Europe - Janne Rauramo explaining use of SSM in their Geoprime® Cement | Photo: Critical Metals/Tomi Glad*

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

Neometals, through a 70% owned subsidiary, has developed a proprietary process to produce lithium hydroxide from lithium chloride solutions using electrolysis to avoid costly and carbon intensive reagents used by incumbents (ELi® Processing Technology ("**ELi®**")). The subsidiary, called Reed Advanced Materials Pty Ltd ("**RAM**"), is 30% owned by leading mining services provider Mineral Resources Limited (ASX: MIN) ("**MIN**" – via its wholly owned subsidiary Process Minerals International).

RAM developed the ELi® process from concept through to semi-pilot scale testing during the past 8 years with a view to having a competitive and reliable low carbon footprint method of large-scale lithium hydroxide and carbonate production to decarbonise lithium supply to the LIB supply chain. Sourcing lithium chemical units with a reduced CO_2 footprint is a high priority for the electric vehicle industry. ELi® has the potential to provide a sustainable long-term cost advantage for lithium chemical production with a reduced carbon footprint. The process has been tested on synthetic and actual lithium sources, both hard rock and brine. A number of sources from South American continental brines have generated promising technical results with strong potential economics highlighted in cost studies.

ELi® development aims include:

- Building sustainable long-term cost advantage for lithium hydroxide and lithium hydroxide production;
- Adapting conventional chlor-alkali process to produce high-purity lithium hydroxide as primary product with flexibility to produce high purity lithium carbonate at low additional cost;
- Reducing carbon footprint from processing at source with renewable electricity;
- Minimising use (and transport) of high manufacturing carbon footprint reagents; and
- Commercialise in Portugal in cooperation with Bondalti, and elsewhere as principal or with other partners, and generate revenue from either toll processing of lithium raw materials, sale of lithium chemicals and securing royalties from technology licensing arrangements

Background

ELi® is a process for purifying an aqueous lithium chloride solution to produce lithium hydroxide in conventional chlor-alkali (electrolysis) cells. ELi® uses commercially available chlor-alkali and purification process equipment and has been tested for reliability in 100 and 200hr duration continuous mini-pilot scale trials. The process has been tested on synthetic and actual lithium sources, both hard rock and brine. A pre-feasibility study was completed in 2012 and a feasibility study for the application of the ELi® technology in a Malaysian plant was completed in 2016 (*for further details see Neometals announcement titled "Positive Lithium Downstream Processing Feasibility Results" dated 11th July 2016*). Under the assumptions for both studies, the ELi® project was shown to be technically feasible and economically viable. The project and intellectual property surrounding it have been maintained and for a period ELi® required an industrial partner to build pilot facilities and test the process under real world conditions.

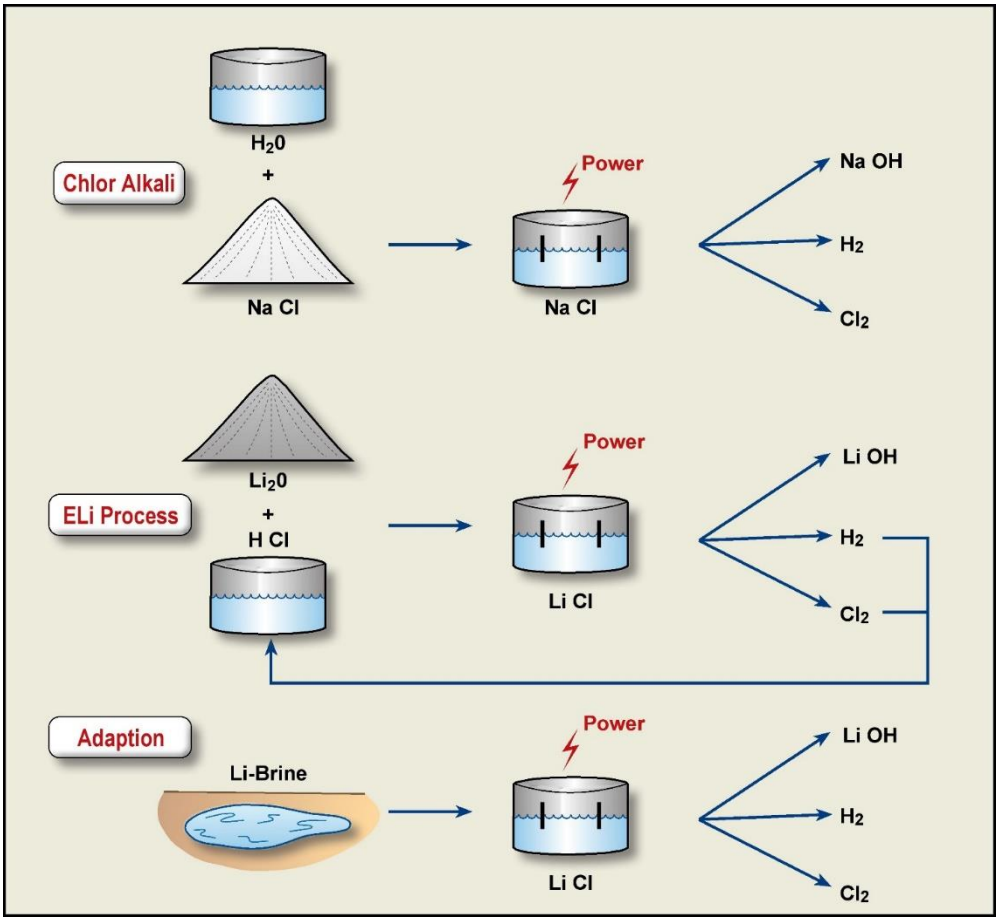

Figure 16 - *Schematic showing the similarities between Traditional Chlor-Alkali (Sodium Salt) electrolysis and ELi®'s Lithium Salt electrolysis and the ELi®'s adaption to directly convert salar lithium feedstocks into lithium hydroxide.*

Cooperation Agreement with Bondalti

In the December quarter, RAM entered into a binding Co-operation Agreement ("**Co-operation**") with Portugal's largest chemical producer Bondalti Chemicals, S.A. ("**Bondalti**").

The Co-operation contemplates the co-funding of certain 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 chlor-alkali operations in Estarreja, Portugal. The evaluation activities will include the construction and operation of a pilot plant in Portugal and completion of an AACE Class 2 Front End Engineering and Design Study ("**FEED Study**"). Completion is targeted for DecQ 2023 at a shared cost of approximately US$4 million. Under the Co-operation, RAM and Bondalti have established a Steering Committee with equal representation from both parties to oversee the conduct of the evaluation activities and establishes a framework of terms for JVCo formation.

The proposed Refinery will be the first commercial operation to use RAM's ELi® Process, which has successfully produced battery-quality lithium hydroxide from operating spodumene and brine operations. This Co-operation is a significant step towards ELi® commercialisation with an industry-leading partner that operates similar equipment for producing sodium hydroxide at industrial scale. The technology, which radically reduces the requirement for (and transport of) reagents represents the opportunity for a step change in environmental sustainability, operating and capital costs for both spodumene and brine lithium projects. ELi® feedstock flexibility enables domestic production of lithium chemicals from the conversion of both European hard rock and imported brine concentrates ensuring an ethical and resilient local lithium supply chain for the EV battery industry.

Activities Undertaken During the Quarter

During the quarter, the Neometals and Bondalti cooperation began in earnest. Specific activities included:

- Agreeing a phased plan to:
  - Run bench-scale purification and electrolysis tests using synthetic (Galan-spec) brine to confirm process parameters; and
  - Run larger scale purification and electrolysis piloting at Bondalti using brine and hard rock concentrate.
- Commercial dialogues with a potential producers of lithium concentrates to investigate mutual study work towards offtake or toll treating of future lithium chloride intermediate into lithium chemicals;
- The Class 3 and Class 2 Feasibility Study schedule was prepared and agreed with Bondalti. Agreement that the Class 2 Study will be undertaken in parallel with the larger scale pilot plant;
- Class 3 Feasibility Study commenced by Primero including feed supply option study, vendor requests for proposal, diligence on Bondalti site and port options, updates to 'SysCAD' modelling and process design;
- Neometals management site visit to Bondalti including meetings with stakeholders and potential feed suppliers; and
- As part of the stakeholder engagement exercise, Bondalti also had the privilege of receiving the Ambassador of Australia in Portugal (Claire Rochecouste) in Estarreja.

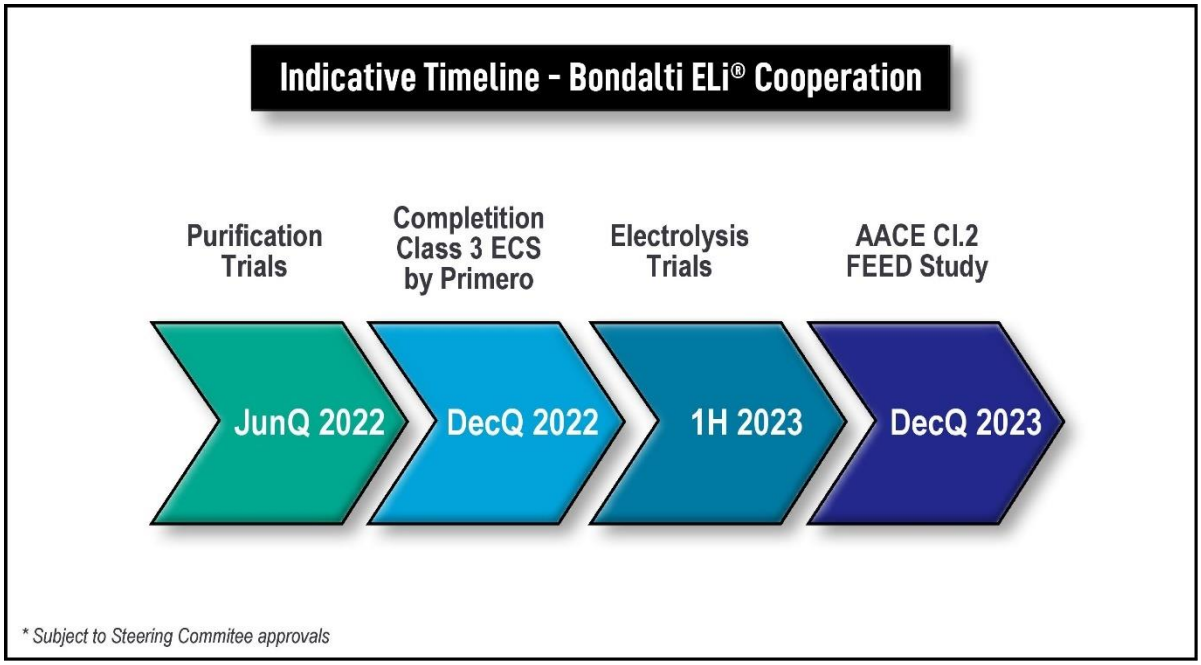

Figure 17 – *Bondalti Lithium Chemicals Indicative Timeline*

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 (**for full details refer to ASX announcement entitled "Updated Barrambie Mineral Resource Estimate" released on 17 April 2018 and Table 1 below*).

Table 1 – Barrambie Mineral Resource Estimate, April 2018

Global Resource as at 17 April 2018[1]

	Tonnes (M)	TiO_2 (%)	V_2O_5 (%)
Indicated	187.1	9.61	0.46
Inferred	93.0	8.31	0.40
Total	280.1	9.18	0.44

High Grade V_2O_5 Resource (at 0.5% V_2O_5 cut-off)[2]

	Tonnes (M)	TiO_2 (%)	V_2O_5 (%)
Indicated	49.0	16.93	0.82
Inferred	15.9	16.81	0.81
Total	64.9	16.90	0.82

High TiO_2 Resource (14% TiO_2 cut-off)[2]

	Tonnes (M)	TiO_2 (%)	V_2O_5 (%)
Indicated	39.3	21.18	0.65
Inferred	14.3	21.15	0.58
Total	53.6	21.17	0.63

Refer to Neometals ASX release dated 17 April 2018 titled "Updated Mineral Resource Estimate"

[1] Based on Cut-off grades of ≥0% TiO_2 or ≥2% V_2O_5
[2] 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

Barrambie is located approximately 80km north-west of Sandstone in Western Australia and the Mineral Resource is secured under a granted mining lease. Neometals has a granted mining proposal to extract approximately 1.2Mtpa of ore and has Ministerial Approval to construct a 3.2Mtpa processing plant.

In October 2019, Neometals entered a memorandum of understanding with Chinese research organisation, IMUMR, to jointly evaluate the development of Barrambie ("**IMUMR MoU**"). Notwithstanding that the IMUMR MoU outlines a potential pathway towards a 50:50 operating joint venture to bring Barrambie into production (*for full details refer to ASX announcement entitled "MoU for JV to develop Barrambie" released on 4th October 2019*), it should be noted that IMUMR has a Chinese national mandate that includes development of upstream supply chains for industries of strategic relevance to China. Specifically, IMUMR will have the right, subject to Neometals approval, to assign its interests under the MoU to a commercial Chinese chemical processing partner.

In addition to the relationship with IMUMR, Neometals also has a memorandum of understanding with Jiuxing Titanium Materials (Liaonging) Co. Ltd ("**Jiuxing MoU**") ("**Jiuxing**") (*for full details refer to ASX announcement entitled "Barrambie - MOU for Cornerstone Concentrate Offtake" released on 16th April 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* contemplates a path to a formal offtake agreement where Neometals supplies a mixed gravity concentrate or separate ilmenite and iron vanadium concentrate from Barrambie to Jiuxing. Specifically, the MoU outlines a product evaluation regime and contains the key commercial terms for a formal offtake agreement (i.e. pricing, volumes, price floor etc.), subject to product evaluation. Following satisfactory completion of testing and technical due diligence, the Jiuxing MoU contemplates the parties negotiating and entering into a binding formal offtake agreement for the supply of 800,000 dtpa of mixed gravity concentrate 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. If executed, it will potentially be the industry's largest individual offtake agreement.

The current business plan contemplates conventional open-cut mining, comminution and gravity concentration on site at Barrambie with a mixed titanium/vanadium/iron concentrate product being shipped to China for further processing. Irrespective of whether Neometals supplies its offtake partners with a mixed gravity concentrate or separate ilmenite and iron vanadium concentrates from Barrambie, the purchasers will likely target contained ilmenite in a smelting process to produce a chloride-grade titanium slag as well as an iron vanadium product. Titanium slag is an intermediate product used to feed the fast-growing demands of the Chinese chloride pigment market as it switches towards this more environmentally sustainable product which requires high quality titanium feedstocks. The vanadium-rich iron (magnetite) concentrate is targeted for blending by steelmakers to obtain vanadium and iron units.

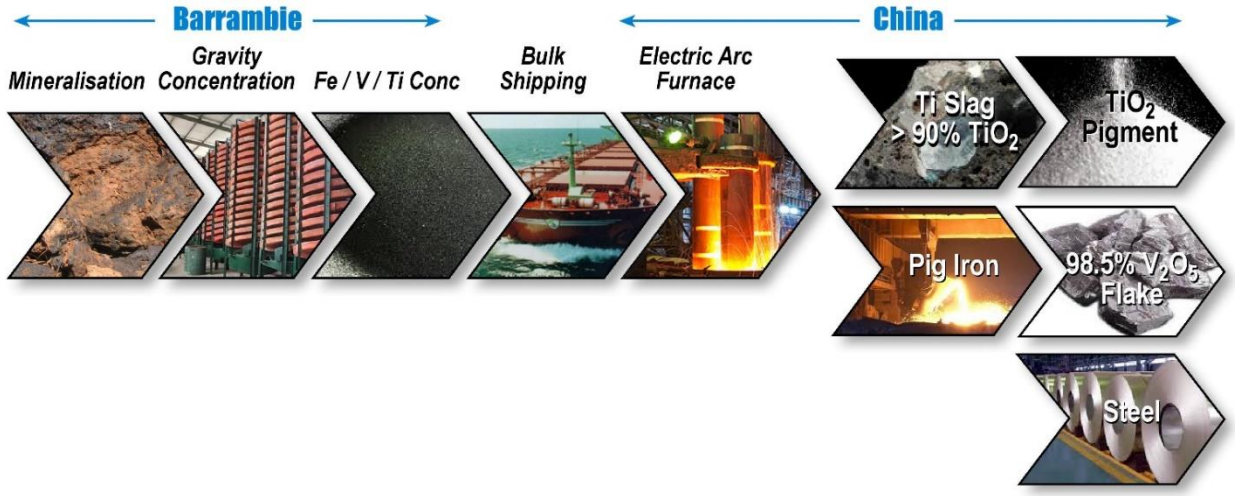

Figure 18 – *Image showing potential for downstream processing of a Barrambie mixed gravity concentrate by smelting into separate ilmenite (titanium) and vanadium rich magnetite (iron) products*

**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. This Jiuxing MoU is effective for 24 months*

Project Development Activities

Pilot Trial and Offtake

Historical pilot trials outcomes established that a simple Barrambie gravity concentrate can likely be roasted and separated into two 'upgraded' high-quality saleable products (ilmenite and iron/vanadium concentrates). This processing path supports Neometals' goal to develop Barrambie as a capital-light concentrate operation.

During the quarter, key Neometals completed preparation of a bulk sample for Jiuxing smelting trials. Neometals constructed a pilot beneficiation plant at the former Menzies State Battery to prepare and has despatched approximately 50t of gravity concentrates to China pursuant to the Jiuxing MoU. This first shipment from this bulk sample was shipped just post the quarter end. Jiuxing will run validation trials on 50 tonnes of material using its commercial titanium smelter as a final stage of offtake due diligence. The remaining concentrates will be used to advance evaluation by other potential third-party off-takers.

Neometals has faced some timeline delays on sample preparation due to availability of equipment, service provision and need for regrinding. Consequently, the sample despatch date has slipped from original targets but the program is now on track and to the Company's knowledge there are no impediments to the Jiuxing smelting trials. Importantly, product samples from the trials will confirm specification and pricing terms agreed in the Jiuxing MOU and in turn revenue assumptions in the PFS financial model.

Figure 19 – *Feed and Product bags for the bulk sample at Menzies Pilot Plant*

Figure 20– *Overview of the Beneficiation Plant*

Figure 21–*Mixed Gravity Concentrate being transported to Perth from Menzies Pilot Plant and in sea container*

The Neometals Barrambie contractor engagement process continued during the quarter with leading service providers conducting due diligence to deliver proposals for the provision of a complete mine-to-port solution under a 'build-own-operate' style arrangement. Contractors have been engaged and are delivering a AACE Class 4 Engineering Cost Study ("**ECS**") that will precede the Barrambie Pre-feasibility Study ("**PFS**").

The Barrambie PFS exercise will form a large component of the due diligence required by the successful 'build-own-operate' partner. This development model was used successfully by Neometals and its partners to advance the Mt Marion Lithium Project in 2015, which is now the world's second largest producer of spodumene (hard-rock lithium) concentrates (Neometals sold its final equity position in the project in 2019 and its offtake right in 2021).

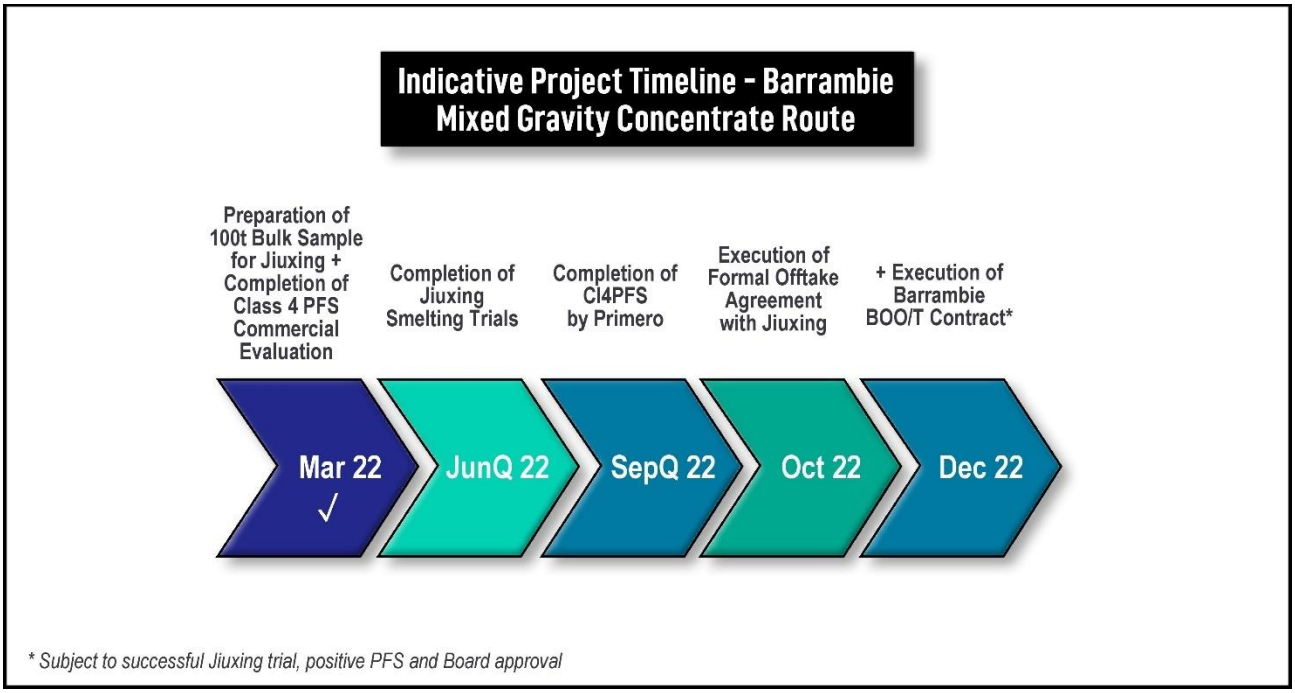

Figure 22 – *Barrambie Indicative Timeline*

CORPORATE

Commercial / Corporate

Neometals has made significant development strides in the March quarter.

Of particular note was the ability to daylight the commercial relationship between Primobius and Mercedes-Benz, the Company's admission to trading on the AIM market of the London Stock Exchange and also the official opening of its first revenue generating battery recycling operation.

These milestones highlight the Company's successful advance towards development decisions at a time when solutions supporting the energy transition are critical to investors, governments and industry. Moreover, Neometals recycling and recovery projects are offering supply constrained critical raw materials against a backdrop where industry is searching for supply chain resilience. Neometals intends to generate those materials in a responsible and sustainable way, bypassing the need to extract virgin materials from the ground.

During the quarter, Neometals management and the Company's chair visited key sites and stakeholders in Europe that have until recently been difficult to access due to Covid travel constraints. Being in a position to raise Neometals awareness and listen in a face-to-face environment was invaluable. The current raw materials and geopolitical situation globally, but particularly in Europe, highlights that vanadium and titanium, together with the better recognised battery materials, are facing significant supply headwinds. There has been significant media attention on lithium and nickel sourcing but with approximately 17% and 60% of the World's vanadium supply coming from Russia and China respectively, Europe in particular needs supply diversification. Likewise, sanctions on Russian supplied titanium for aerospace alloy production means industry is on the lookout for other large-scale sources. To this end, Neometals is well placed with significant tailwinds supporting its development on all four of its key projects.

Despite a high inflation macro-economic environment coupled with geopolitical uncertainty, Neometals continues to navigate against volatility and risk. The Company is not immune from supply chain disruptions, however, having pre-commercial operations with predominantly large well established 'local' partners has provided strong insulation. Similarly, labour shortages in Australia don't have as much bearing on what will be predominantly overseas operations. Inflation does have an impact on the business, but the Company sees the impact being offset by outperformance of its targeted product suite with many commodities trading at multi year highs. Neometals' product basket includes the most sought-after battery related materials with most targeted for production on or about the lowest point of the cost curve.

Financial

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

As at 31 March 2022 Neometals held 845,086,264 ordinary fully paid shares (~32.4% of the issued capital) in Hannans on an undiluted basis. At 31 March 2022, Hannans' shares closed at 3.6c implying a value of $30.4 million.

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

During the quarter, Neometals also announced an investment in a battery anode development company with future need for sustainable European vanadium supply. Specifically, Neometals invested US $500,000 in a financing round for private US based battery start-up, Tyfast Energy Corp ("**Tyfast**"). Tyfast, a spin-out from the University of California San Diego, is focussed on developing a long life, fast-charging lithium battery that utilises a proprietary vanadium-based anode technology. The investment is by way of a convertible note providing Neometals with the ability to obtain a minority equity stake in Tyfast.

Tyfast raised a total of US$1M in the financing round with proceeds to be utilised to scale up commercialisation activities for the Company's breakthrough battery technology that uses vanadium to make its proprietary anode. Tyfast has flagged that future sources of high purity and ethically sourced vanadium will soon be critical path and sees Neometals as a future raw material source for the Company's expansion into Europe.

The market value of the Company's other investments as at 31 March 2022 totalled $10.2 million.

Finances (unaudited)

Cash and term deposits on hand as of 31 March 2022 totalled A$65.2 million, including $4.2 million in restricted use term deposits supporting performance bonds and other contractual obligations. The Company has net receivables and investments totalling approximately $46.5 million.

Related Party payments for the quarter outlined in the ASX Appendix 5B released contemporaneously at section 6.1 total $229,750 and are made up of Director fees and superannuation.

Issued Capital

The total number of shares on issue at 31 March 2022 was 548,376,396.

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 www.neometals.com.au

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 form the original market announcements.

APPENDIX 1: TENEMENT INTERESTS

As at 31 March 2022, the Company has an interest in the following projects and tenements in Western Australia.

Project Name	Licence Name	Beneficial Interest	Status
Barrambie	E57/769	100%	Live
Barrambie	E57/770	100%	Live
Barrambie	E57/1041	100%	Live
Barrambie	L57/30	100%	Live
Barrambie	L20/55	100%	Live
Barrambie	M57/173	100%	Live
Barrambie	L20/80	100%	Pending
Barrambie	L20/81	100%	Pending
Barrambie	E57/1220	100%	Pending
Jilbadji	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
Barrambie	E57/1220	Application

Interests in mining tenements relinquished, reduced or lapsed

Project Name	Licence Name	Relinquished, Reduced or Lapsed
n/a	n/a	n/a