PRIMOBIUS RECYCLING JV – OPERATING AND CAPITAL COST ESTIMATES

HIGHLIGHTS

- **Operating and Capital Cost estimates finalised for a Primobius 50tpd (18,250tpa) commercial recycling plant in Germany based on successful pilot plant trials of Neometals' proprietary hydrometallurgical flowsheet;**
- **Operating cost estimate of €1,417 (US$1,560) per tonne of batteries processed;**
- **Capital cost estimate of €150M (US$165M) (inc. 10% contingency) for 50tpd (18,250tpa) recycling operation;**
- **Capital cost increase from 2019 Scoping Study largely attributable to construct-own buildings and infrastructure v. commercial lease, additional equipment to increase recoveries and site relocation to Germany; and**
- **Demonstration Plant trials and Feasibility Study on-schedule for completion in July and December 2021 respectively, with a final investment decision on track for the MarQ of 2022.**

Innovative project development company, Neometals Ltd (ASX: NMT) ("**Neometals**" or "**the Company**"), is pleased to announce that Primobius GmbH ("**Primobius**"), the joint venture company owned 50:50 by Neometals and SMS group GmbH ("**SMS group**"), has finalised operating and capital cost estimates for its first proposed lithium-ion battery ("**LIB**") recycling operation in Germany.

The operating and capital costs have been estimated to an Association for the Advancement of Cost Engineering ("**AACE**") Class 4 accuracy (±25%) for a 50 tonnes per day, commercial-scale LIB recycling plant in Germany based on data from the successful 2020 Canadian pilot plant ("**Pilot**") trials on Neometals' proprietary flowsheet. Strategic Metallurgy Pty Ltd (**"Strategic Metallurgy"**) prepared a mass-energy balance and Primero Group Limited (**"Primero"**) developed the process design criteria, equipment selection and layout. The resultant physical inputs and outputs have been estimated using local German prices.

Strong progress is also being made with Primobius' LIB demonstration plant ("**DP**") with wet commissioning to commence in June 2021. The Company will use data and learnings from the DP trials to complete an AACE Class 3 Engineering Cost ("**ECS**") and Feasibility Study ("**FS**") to build and operate Primobius' first commercial-scale recycling plant. A formal economic study will form part of the FS which is targeted for completion in MarQ2022.

Neometals' Managing Director Chris Reed said:

"We are extremely encouraged with the robust potential economics for Primobius' first proposed commercial plant. Importantly, the operating costs have increased by less than 5% from our 2019 Scoping Study estimates despite the jump from lab to pilot-scale, and the site relocation from Kwinana to Germany. We took the conservative step to include the cost of constructing dedicated industrial buildings until such time as we are able to identify and agree terms to leased premises. Naturally, we expected the capital costs to increase inline with the change in scope and increased estimation accuracy levels.*

The safe production of, amongst other things, cathode-grade nickel and cobalt sulphates from a variety of battery feedstocks, using our patent pending process, augurs well for achieving our ambitions to build Europe's leading sustainable recycling solution."

**For full details refer to Neometals' announcement entitled "Neometals and SMS create Lithium Battery Recycling JV" released on 4th June 2019.*

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Development Scenario

The development scenario contemplated as the basis for Primobius' first commercial scale recycling plant ("**Recycling Plant**") is characterised by:

- Greenfields development starting with a cleared industrial site in Germany.
- Ownership of buildings and infrastructure rather than leasehold.
- Modular plant with a throughput capacity of 18,250tpa.
- Lithium-ion battery feedstock comprising 50:50 LCO and NMC111 cathode batteries, identical to Pilot feed.

Process Flowsheet

Primobius has been developing and evaluating Neometals' proprietary processing method to recycle scrap and spent LIBs to recover cobalt, nickel, lithium, copper, manganese and a range of lower value materials into saleable products.

The Recycling Plant flowsheet, which has been tested at pilot scale, comprises two sections:

1. Battery preparation and shredding to remove metal casings, foils and plastics in the feed preparation facility ("**Feed Preparation Facility**"); and
2. Leaching, recovery and refining to deliver chemical products via the hydrometallurgical processing facility ("**Hydrometallurgical Processing Facility**").

The process flowsheet was developed with the assistance of Primero for the Feed Preparation stage, Strategic Metallurgy for the Hydrometallurgical Processing stage, and successfully tested in a pilot trial in Lakefield, Canada.

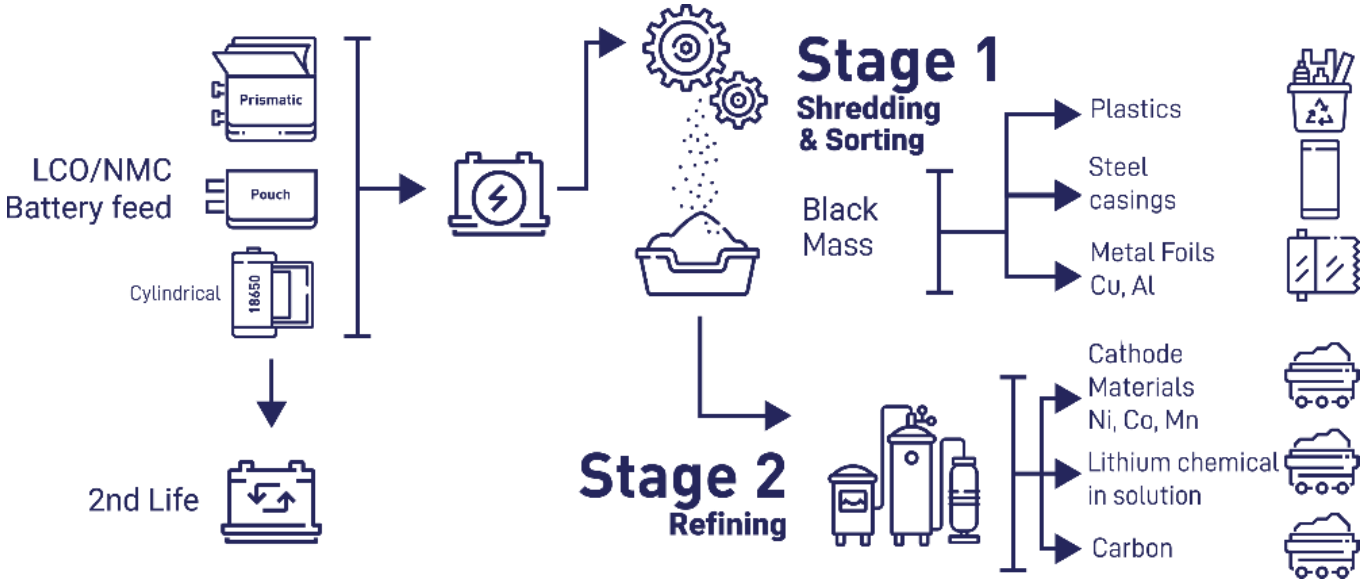

Figure 1 - *High-level flowsheet showing materials generated from Feed Preparation and Hydrometallurgical Processing facilities*

Stage 1 – Feed Preparation

Cylindrical 18650 battery cells were assumed as the format of battery feedstock used for the evaluation. A two-stage shredding process is followed by drying and beneficiation to separate coarse metal and plastic materials from feed for processing in the hydrometallurgical section of the plant. The metal materials are drummed for sale as scrap metal for existing metal recyclers.

Stage 2 - Hydrometallurgical Refining

The feed (referred to as Black Mass in Figure 1 above) is processed in the leach circuit to facilitate the extraction of cobalt, nickel, manganese copper and lithium. The pregnant leach solution ("**PLS**") is separated from the solid leach residue. Further extraction and purification of PLS results in the recovery of cobalt and nickel as high purity sulphates suitable for potential sale directly back into the LIB supply chain. The recovery of lithium as a sulphate will enable its conversion to either lithium hydroxide or lithium carbonate and re-use in batteries. The manganese and copper sulphates are saleable to existing refineries of these metals or for direct industrial use. The solid leach residue contains the graphite anode material which will be dried and drummed for sale. The final product or 'tailing' is a liquid ammonium sulphate solution, which can be concentrated and crystalised for sale into the fertiliser market.

Project Infrastructure

The original design assumed that the entire plant, including plant offices, administration, ablutions and a laboratory was to be located inside a constructed industrial building in a major industrial region/area in Kwinana, Western Australia, a concept being explored prior to the Company solidifying the Primobius JV with SMS. It also included allowance for battery feed and product storage. These estimates were based on a conventional on-site construction methodology, with water, natural gas and electricity assumed to be available at the site boundary. The updated estimate includes the construction of an industrial building in a major industrial chemical park in Germany.

The geographic location for the ultimate commercial-scale plant will be finalised during commercial negotiations. Future studies will evaluate the benefit of separating the locations of the Feed Preparation Facility from the Hydrometallurgical Processing Facility in a "hub and spoke" configuration to minimise logistics and safety risks, optimise capital efficiency and maximise value.

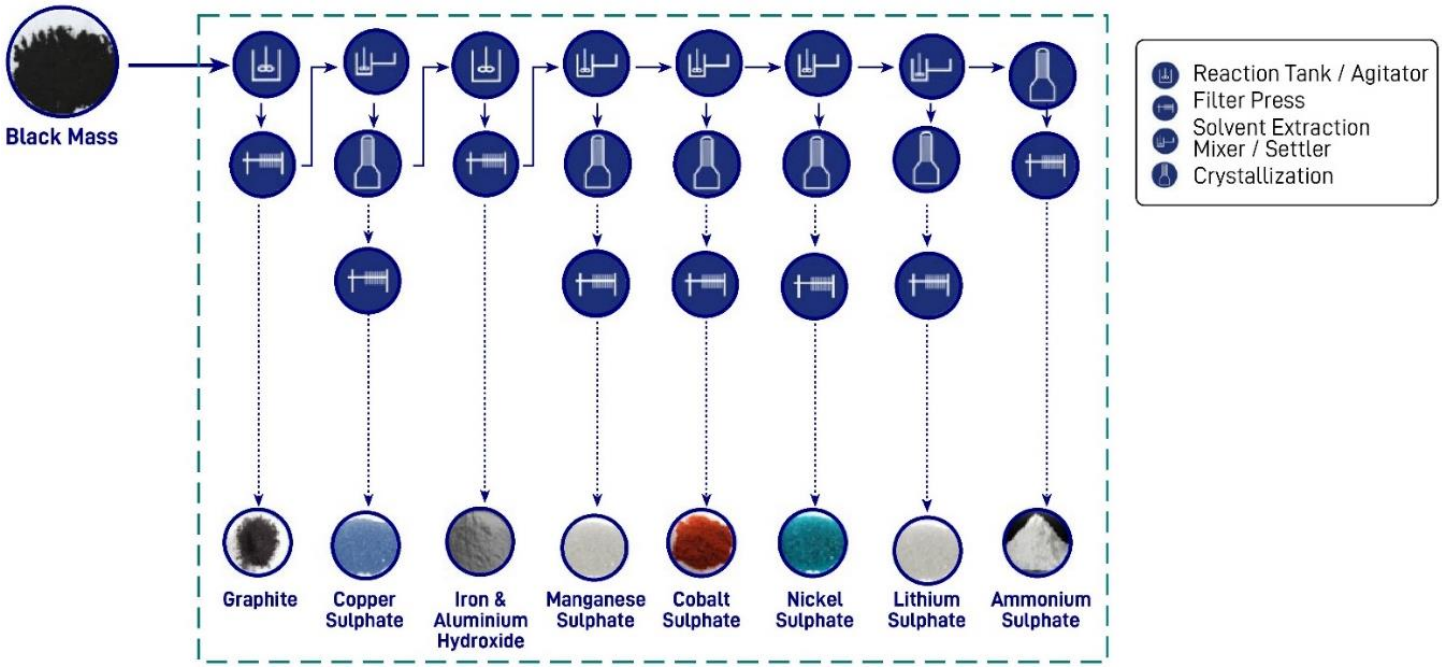

Figure 2 - Proprietary *Hydrometallurgical Refining flowsheet showing the products to be produced in the Demonstration Plant trials*

Operating Cost Estimate

The operating costs for the proposed Recycling Plant have been estimated by Primobius to AACE Class 4 standard, having a nominal accuracy of ±25%. The estimated operating cost is US$1,560 per tonne of LIB's processed, a breakdown is illustrated in Figure 3.

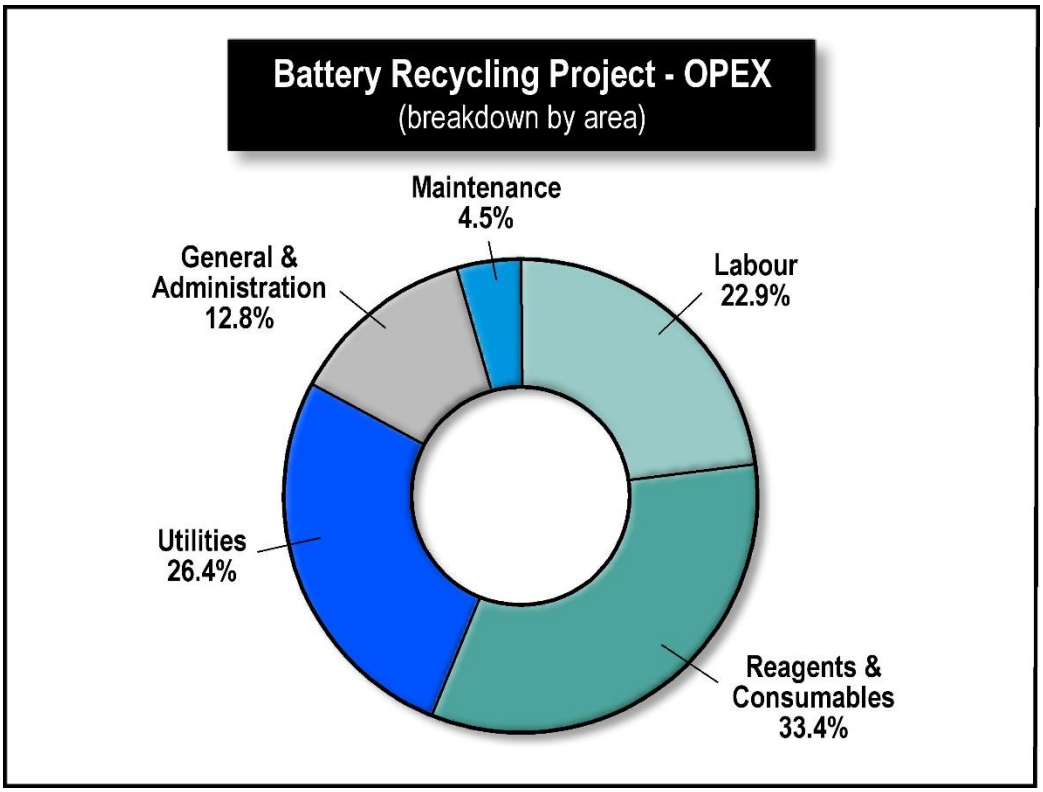

Figure 3 - *Operational cost breakdown by key areas*

Capital Cost Estimate

Processing

Primobius has updated Neometals' design and capital cost estimates for a Kwinana-based Recycling Plant that reflects the cost of procurement and construction in Germany. The German plant design included:

- Larger and more comprehensive building and infrastructure package;
- Enhanced safety and fire protection systems;
- Enhanced beneficiation circuit to increase black mass recovery;
- Additional refining circuits to deliver flexibility in handling wider variations in cobalt and nickel content;
- More intensive product finishing circuits to ensure more certainty over consistent quality products.

Table 1 - *Capital Cost Estimate*

CAPITAL	US$M
DIRECTS	
Infrastructure Civil	9
Land and Buildings	34
Front End	6
Hydromet	24
Utilities	12
Installation	11
Sub-Total Directs	**96**
INDIRECTS	
Engineering, Project Management and Owner's Costs	45
Insurance, Freight, Taxes and Interest	9
Sub-Total Indirects	**54**
CONTINGENCY (10%)	**15**
TOTAL	**165**

Note: total numbers may not sum due to rounding

Economic Analysis

As part of the FS, Primobius will conduct a comprehensive economic analysis post completion of the Demonstration Plant and ECS and report as with the results of the FS. The economic case for consideration of a Final Investment decision to construct Primobius' first plant will ultimately be based on a feedstock blend consistent with future commercial feed supply and/or disposal service agreements. The plant design, and resultant operating and capital cost estimates, are based on the results of the Pilot which used a LIB feed blend of 50% LCO and 50% NMC111, this reflects the predominant end-of-life chemistry in 2020 – see Figure 4. The Demonstration Plant feed blend will be predominantly NMC622 from electric vehicles and stationary storage batteries, reflective of increasing volumes higher nickel content production scrap surpassing the end-of-life batteries of higher cobalt content produced last decade - see Figure 4.

Neometals is confident in the long-term economics of recycling LIB's irrespective of nickel/cobalt ratios of future feedstocks, illustrated in Figure 5. Nickel and cobalt sulphate prices have seen marked increases since the Scoping Study, per the table below:

COMMODITY	SCOPING STUDY	PRICE ($USD)	SOURCE
COBALT SULPHATE	$6,150	$11,051	Fastmarkets sulphate price (Spot)
LITHIUM CHLORIDE	$5,000	$8,440	IHS Markit Trade Data Q1 2021
NICKEL SULPHATE	$3,300	$4,868	Fastmarkets sulphate price (Spot)
COPPER AS SULPHATE	$2,000	$2,000	Neometals' Management
COPPER AS FOIL	N/A	$1,980	Neometals' Management
MANGANESE SULPHATE	N/A	$561	Fastmarkets metals price (Spot) less 50% discount for sulphate form

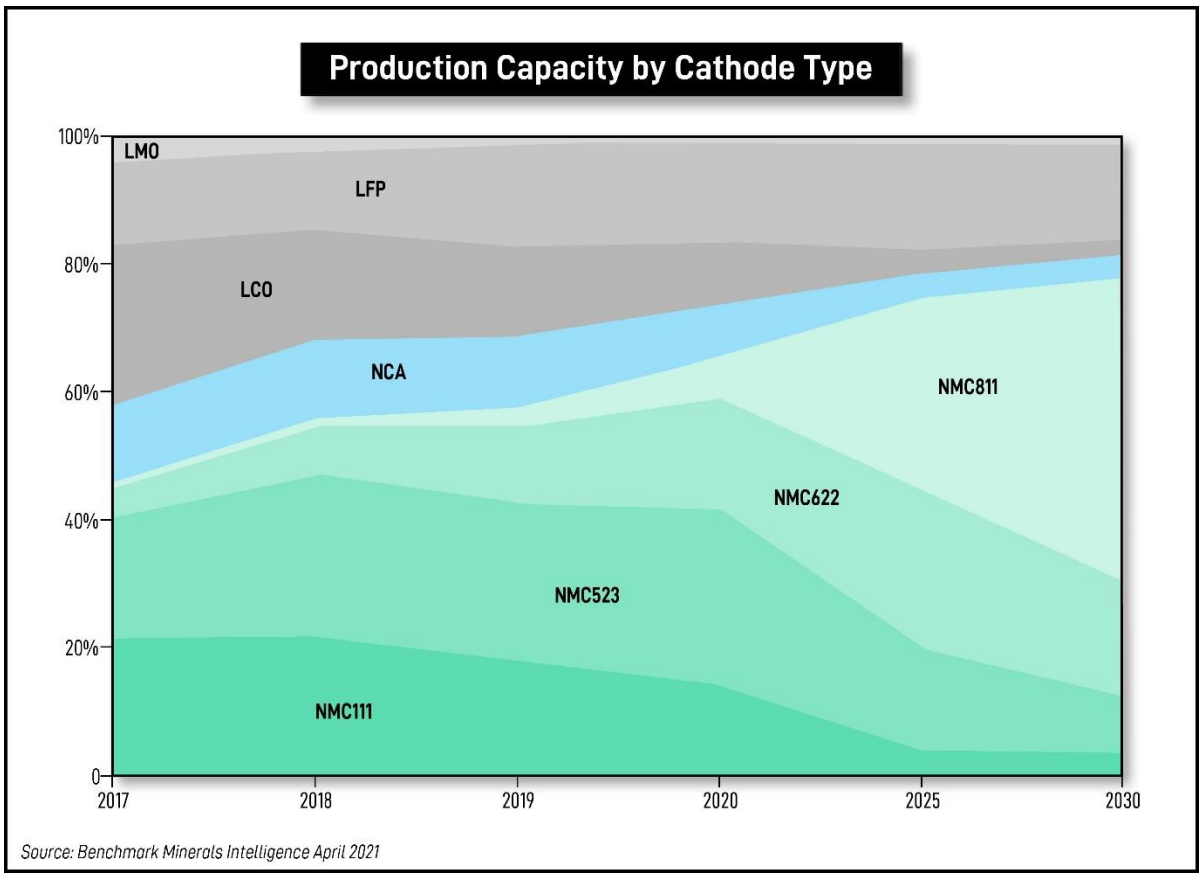

Figure 4 - *Image showing the historic and forecast trends in cathode chemistry by global LIB plant capacity*

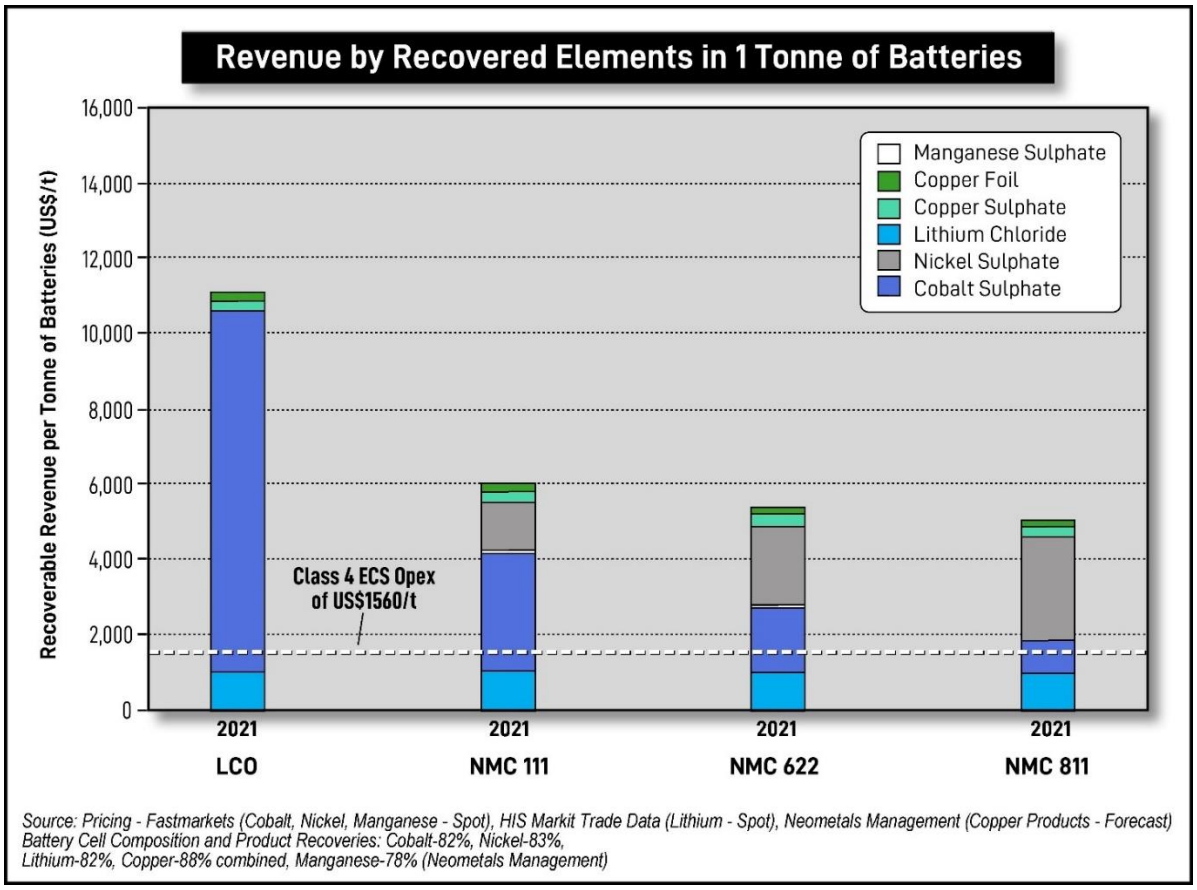

Figure 5 - *Recovered value of products of various cathode chemistries based on Pilot Plant results.*

Market and Marketing

There is a growing need for a universal LIB recycling solution which allows Neometals (via Primobius) to consider participation in several key global markets, Europe being the first target. The consensus amongst analysts is that demand for LIBs will grow strongly due to rapidly expanding markets for electric vehicles, home energy storage systems and consumer electronics. The volume for end-of-life LIBs reaching end-of-life ("**EOL**") is forecast to grow commensurately. In the case of EV batteries, the current estimated life expectancy is approximately 8 years.

Lithium-ion Battery Market

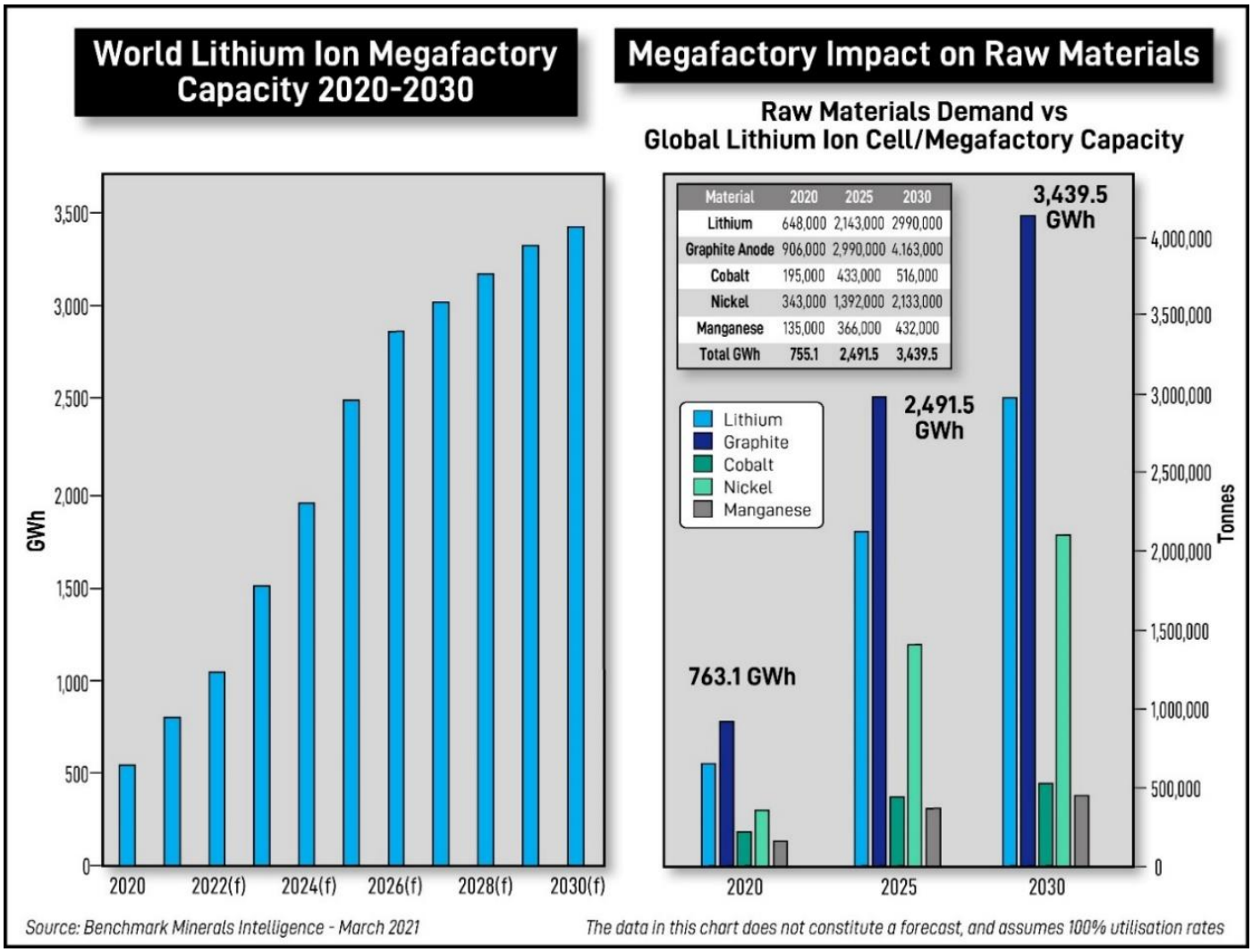

Figure 6 - *Image showing proposed capacity LIB megafactories and raw material demand out to 2030*

Governmental policies are also being implemented that require the battery makers and automakers to take responsibility for the EOL collection and management of consumer and EV batteries. In Europe, the Extended Producer Responsibility (EPR) requires battery producers, or third parties acting on their behalf, to bear the cost of collecting, storing, treating, and recycling waste batteries. Similarly, the End-of-Life Vehicles (ELV) Directive targets batteries as part of an EOL vehicle, whereby automakers are required to take responsibility for the collection and EOL management of scrap vehicles and their components. Targets are being set in respect of the efficiency with which batteries are recycled.

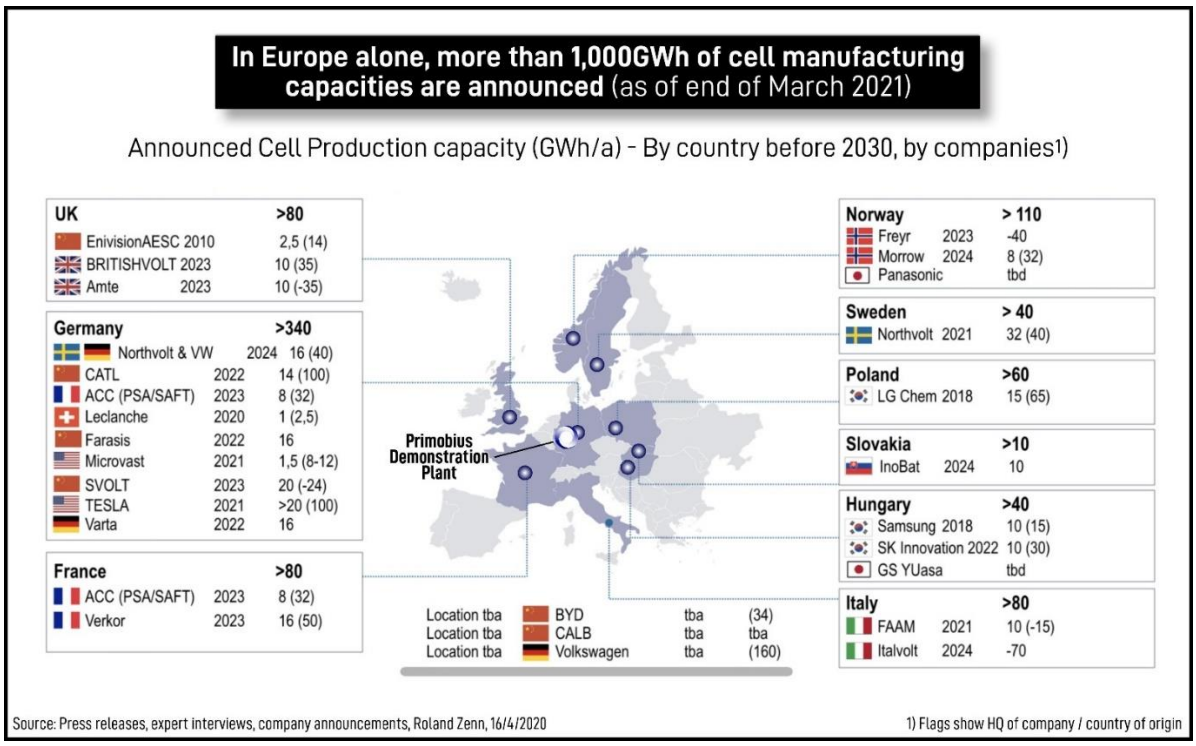

Figure 7 - *Image showing location and capacity of LIB megafactories to be operational in Europe by 2030*

Circular Energy Storage (2021), in 2030 the total amount of lithium-ion batteries that will go to reuse and recycling will be 315 GWh or 1,619,000 tonnes with most available for recycling. Ultimately, end-of-life batteries will become the largest stream as EV reach their useful life. In the interim, waste and scrap from battery production, typically 10% of the planned cell production capacity, will be the feedstock source. Figure 8 below illustrated the project volumes of potential LiB feedstocks in Europe, the end-of-life cells have an identical ramp-up curve to that of production scrap except lagged 8 years to account for the typical EV battery life/warranty period.

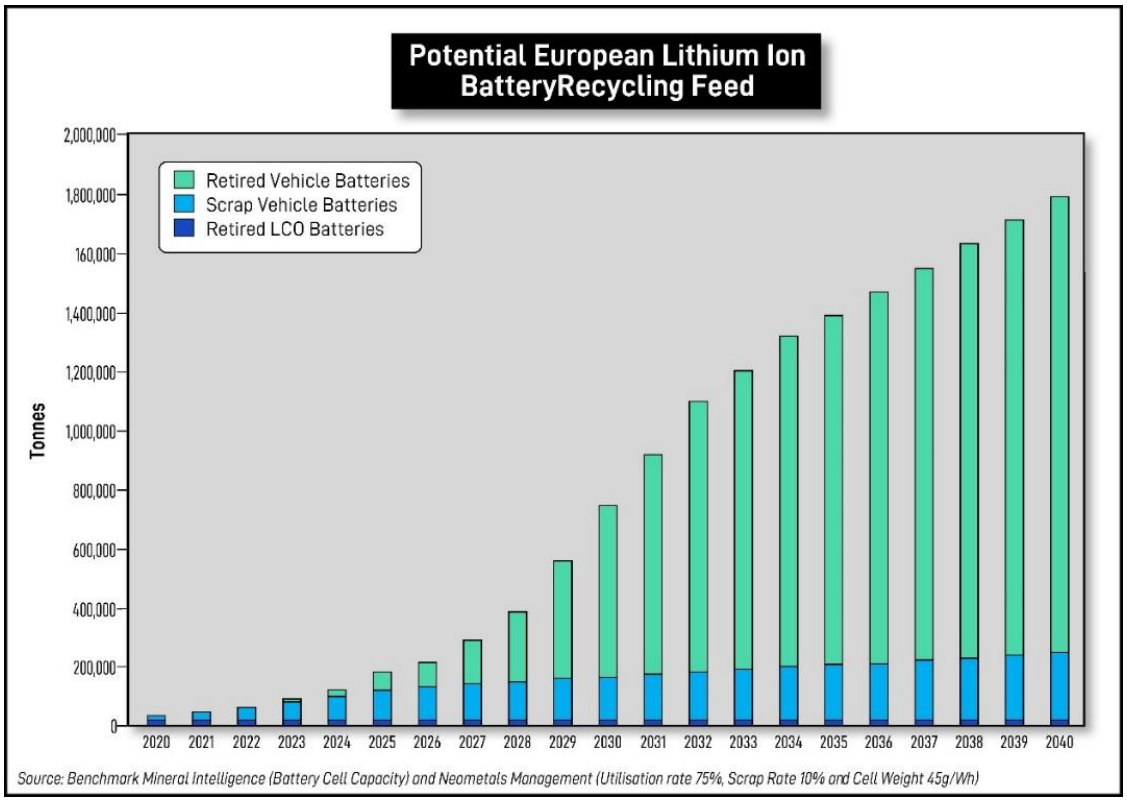

Figure 8 - *Graph showing the current and projected potential feedstock volumes for recycling*

Primobius' Marketing Strategy

The Primobius marketing strategy is borne of the following key business strategies supporting the development of the LIB recycling business:

- Securing reliable sources of supply for end-of-life LIBs, especially those containing high nickel and cobalt values;
- Implementing low-cost, low-energy, low-carbon footprint processing technology in regions supported by established and/or developing LIB supply chains;
- Achieving high recovery rates for lithium-ion battery components and the production of high-purity nickel, cobalt and lithium products suitable for lithium-ion battery applications; and
- Negotiating long-term offtake arrangements for recycled products with key players in the LIB supply chain, including reciprocal lithium-ion battery and/or scrap supply arrangements where appropriate.

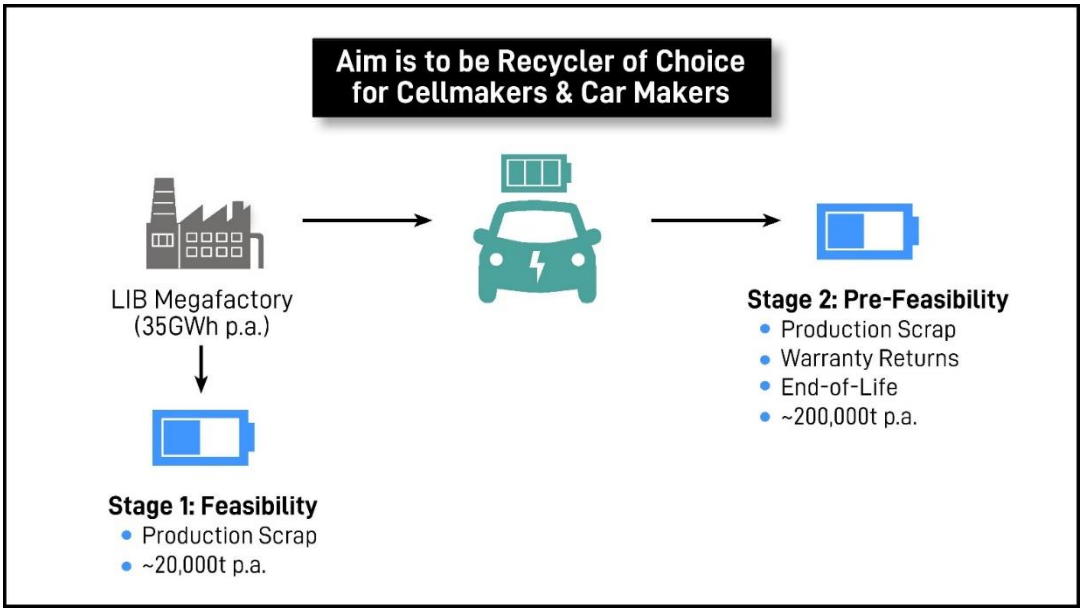

Figure 9 - *High-level schematic of Primobius' development strategy.*

Flexible Business and Partnership Models

Primobius is developing three key business models for deployment of its operations. These models address the differing needs of the main sectors associated with battery production and its applications. Importantly, this flexible business model is designed to allow partners, in some instances, to share in project economics which underpins feed supply with parties who need to close their value chain loop by taking receipt of the cathode chemicals recovered. In addition, this flexibility offers a degree of margin insulation.

Primobius' flexible business models are illustrated in Figure 10 and listed below:

- Supply of arm's length disposal service to producers of cell scrap, returns, EOL, stewardship schemes, aggregators;
- Development of joint ventures with cell/carmakers to share risk/reward to secure access to future volumes under long-term agreements; and
- Licensing technology to provide high-margin, low-risk royalties streams across the basket of products recovered.

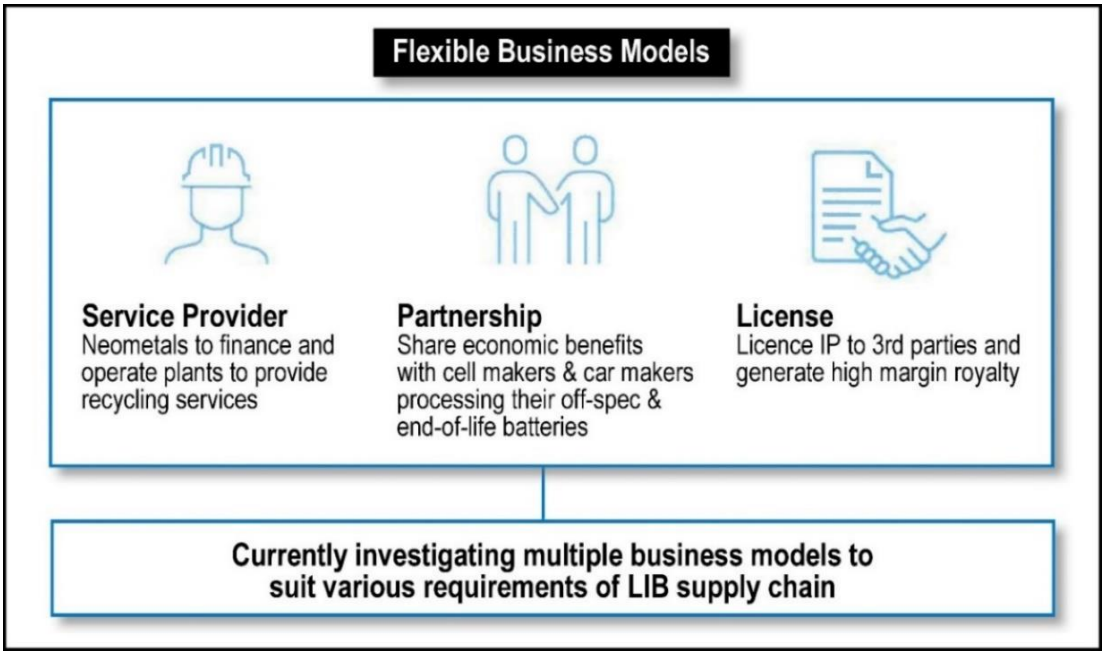

Figure 10 - *Flexible Business Models*

Primobius has fielded numerous requests from third parties to participate in the DP trial, with a view to entering into a range of potential long-term co-operations. The memorandum of understanding with Itochu Corporation (*For full details refer to Neometals' announcement entitled "Primobius JV enters MOU with Itochu Corporation" released on 5th March 2021)* is an example where an owner of spent LIBs (stationary energy storage in this case) is donating feed to the DP and evaluating products generated with a view to reusing recovered cathode materials. Given that the volume of DP feed, secured under similar circumstances to Itochu, significantly exceeds DP requirements, Primobius has narrowed its focus to the nearest term opportunities. Primobius has mutually agreed with InoBat j.s.a to terminate the separate cooperation memorandum of understanding between the parties (*for background information on the cooperation refer to Neometals' announcement entitled "Primobius JV enters into recycling MOU with European Battery Producer"dated 3rd November 2020).*

Next Steps

The near-terms steps include the following activities:

- Complete DP trials at SMS' manufacturing centre at Hilchenbach, Germany using feed provided by potential recycling service clients (cell, battery and car makers);
- Supplying product marketing samples to end users and potential offtake partners under the multiple product evaluation agreements for key products;
- Complete the FS;
- Advance discussions with potential debt and equity financiers and other European project stakeholders with a focus on sustainable recovery of critical metals to support resilient domestic supply chains from non-mining sources;
- Complete location study and secure commercial terms for chosen site;
- Secure site and government approvals to commence construction of Primobius' first commercial plant; and
- Primobius to accelerate activities contemplated under the MOU with Itochu Japan.

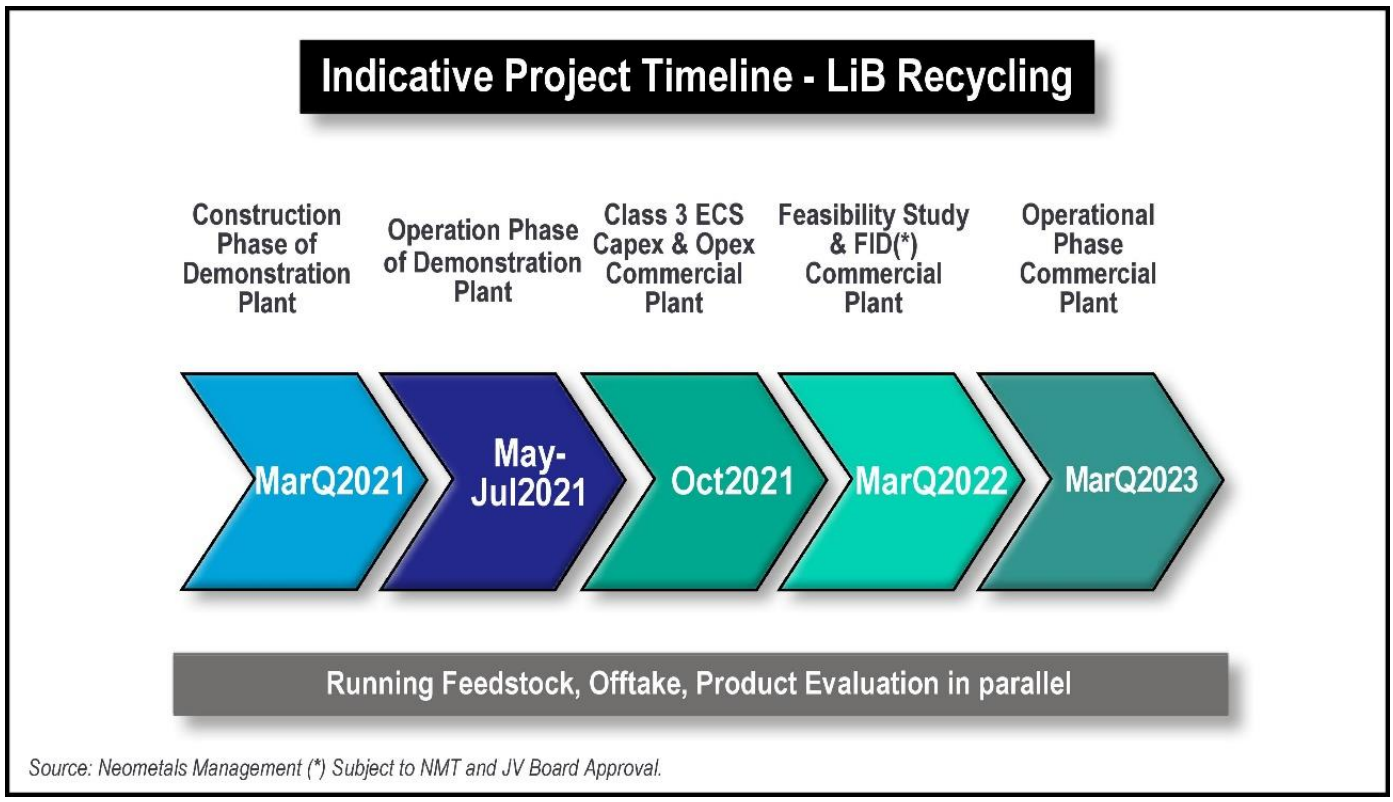

Figure 11 - *Indicative Project Timeline*

Forward-looking Statements

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

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

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Advice

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

ENDS

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About Neometals Ltd

Neometals innovatively develops opportunities in minerals and advanced materials essential for a sustainable future. With a focus on the energy storage megatrend, the strategy focuses on de-risking and developing long life projects with strong partners and integrating down the value chain to increase margins and return value to shareholders.

Neometals has four core projects with large partners that support the global transition to clean energy and span the battery value chain:

Recycling and Resource Recovery:

- Lithium-ion Battery Recycling – a proprietary process for recovering nickel, cobalt and other valuable materials from spent and scrap lithium batteries. Completing construction of demonstration scale plant with 50:50 JV partner SMS group. Targeting a development decision in Mar Q 2022; and
- Vanadium Recovery – sole funding evaluation studies to form a 50:50 joint venture with Critical Metals Ltd to recover high-purity vanadium pentoxide from processing 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 200,000tpa processing plant in DecQ 2022.

Downstream Advanced Materials:

- Lithium Refinery Project – evaluating the development of India's first lithium refinery to supply the battery cathode industry with potential 50:50 JV partner Manikaran Power, underpinned by a binding life-of-mine annual offtake option for 57,000 tonnes per annum of Mt Marion 6% spodumene concentrate, working towards a final investment decision in FY23.

Upstream Industrial Minerals:

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