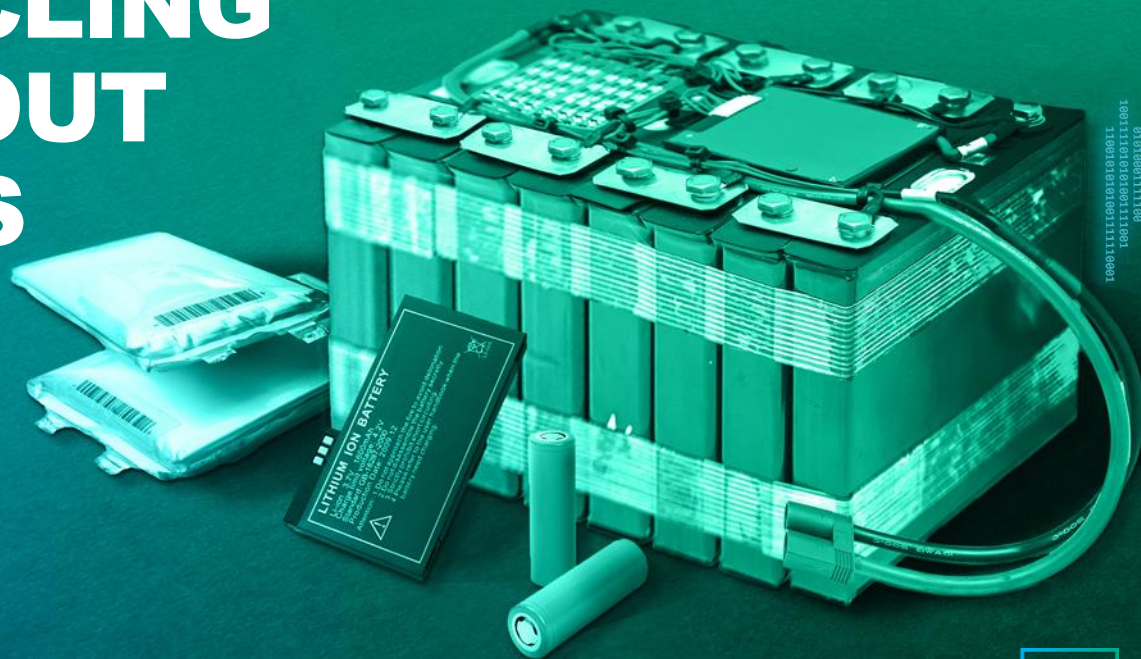


BATTERY RECYCLING WITHOUT LIMITS



Corporate Presentation, LiB Recycling

August 2020

ASX Code: NMT

OTC/Nasdaq Intl: RDRUY

Nm

Neometals

DISCLAIMER

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Investment risk: An investment in securities in Neometals is subject to investment and other known and unknown risks, some of which are beyond the control of Neometals. The Company does not guarantee any particular rate of return or the performance of Neometals. Investors should have regard to the risk factors outlined in this document.

CONTENTS PAGE

Executive Summary



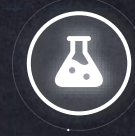
The need for LiB recycling



The Opportunity



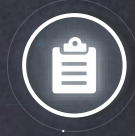
The Neometals' Solution



The Business Case



Supporting Documents



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-

OUR STRATEGY FOR GROWTH

Neometals' uses a different early-partnering model to maximise ROIC

1.

**Identify
and secure
opportunities**

Organically and through acquisition. E.g. battery recycling and Mt Edwards.

2.

**Build
Value**

Risk-conscious exploration, cost/vertical integration, processing focussed R&D and evaluation studies.

3.

**Validate and
realise value**

Partner to reduce Opex and invested capital, develop at scale, reduce risk and accelerate returns.

4.

**Return
value**

Dividends and buy-backs

The common thread across this model is a consistent development strategy, focus on sustainability and the projects intersect across the EV and ESS value chain.

PROJECTS

Nm

Lithium-Ion Battery Recycling Project



Sustainable process aiming to recover +90% of lithium battery contents.

Demo showcase stage, 50:50 JV.

Lithium Refinery Project



Feasibility Stage, MOU 50:50 JV.

Barrambie Titanium and Vanadium Project



Pilot-stage, 100% NMT, MOU for 50:50 Operating JV.

SSAB By-product Vanadium Recovery



50:50 JV evaluation, scoping-stage.

THE NEED FOR LIB RECYCLING



Hazardous



Valuable

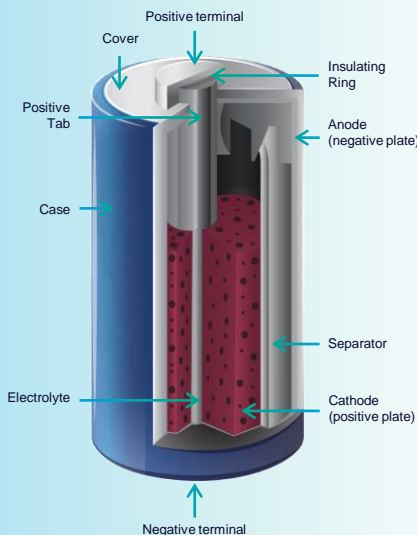


**Carbon
Footprint**

THE GROWING DEMAND FOR LI-ION BATTERIES

- Over the last ten years, Li-ion Batteries (LiBs) have moved from obscurity to wide-spread popularity
- There has been growing consumer appetite for energy-dense consumer electronics, EV's and more – all powered by LiBs
- However, LiB's rise to public prominence has created end of life disposal complications along with the benefits

Schematic of Lithium-ion Battery & Average Composition of Components



Lithium-ion battery component	Composition (% by weight)
Cathode + anode + electrolyte	39.1% +- 1.1%
Plastic case	22.9% +- 0.7%
Steel case	10.5%+- 1.1
Copper foil	8.9% +- 0.3%
Aluminium foil	6.1%+- 0.6%
Polymer foil (cathode-anode separator) + electrolyte	5.2% +- 0.4%
Non-aqueous solvent	4.7% +- 0.2%
Electrical contacts	2.0% +- 0.5%

Source: Chris Hillseth Enterprises - 2014

Source: ASEAN Environment – Sept 2014

RECYCLING IS NOT OPTIONAL

LiBs pose many risks including:



Fire Risk

These risks have led to concerns over the storage, transport, disposal, ethical supply and sustainability of these batteries.



Pollution (GHG)

As a result, many countries have imposed recycling regulations in order to help reduce these risks.



Landfill

EU Battery Directive – ‘producers’ must recycle or acquit the same amount.



Material Shortages

EOL vehicle directive – more than 85% to be reused and recycled.



Circular Economy

Mandatory recycling in California - no landfill dumping.



REDUCING THE LEVEL OF HAZARDOUS MATERIAL

>15MT Discarded LiB from 2020-30



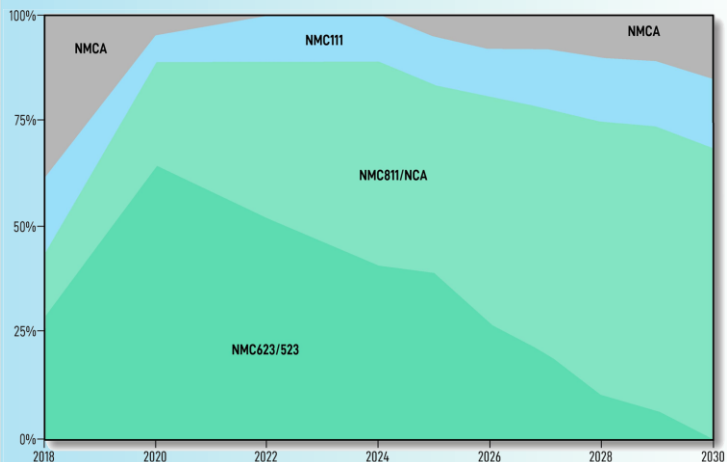
- Expired LiBs are growing in volume.
- Combustible and hazardous content at risk of being dumped into landfill.
- Small % of LiBs are currently being recycled.
- Incumbent recycling technology sees most of the valuable ingredients burnt and released into the atmosphere.



SPENT LIBS ARE VALUABLE

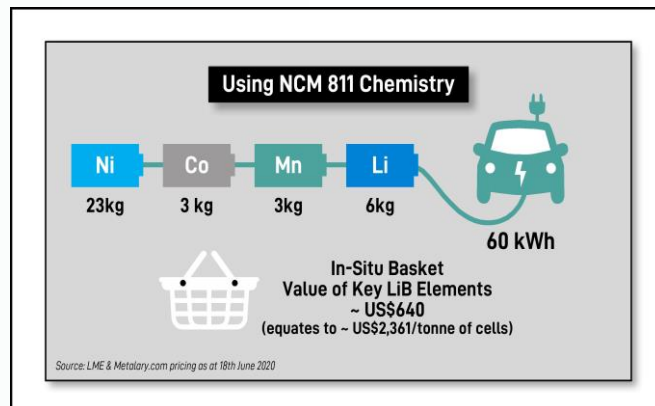
Expired LiBs are made up of valuable raw materials that can be recovered and re-used

EV Battery Cathode Market Share Forecast



Source: Dartan Commodities; Argus

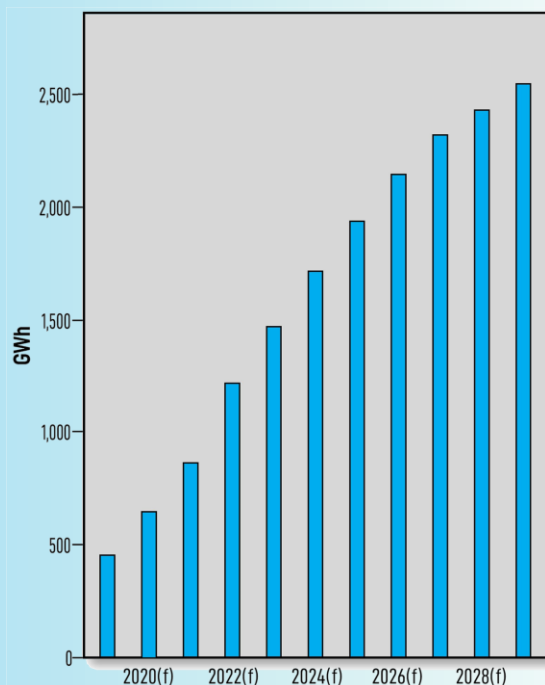
NMC 811 Value



Source: Vale and LME & Metalary.com pricing as at 18th June 2020

RECYCLING IS THE KEY TO SECURING THE SUPPLY CHAIN

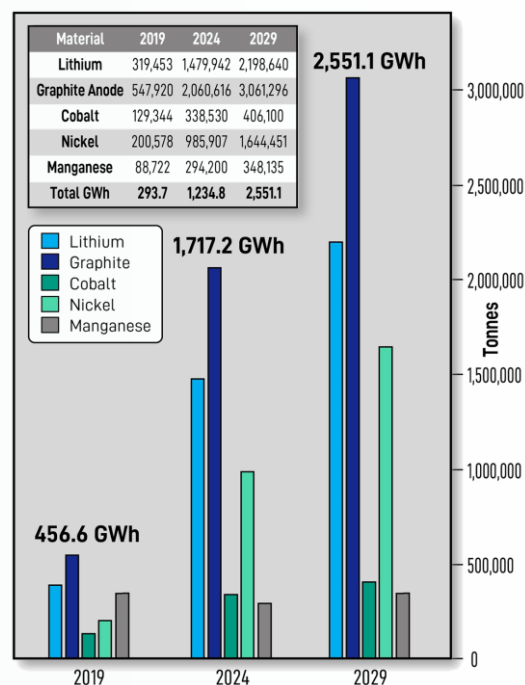
World Lithium ion battery
mega- factory capacity 2020-
2028



Source: Benchmark Minerals Intelligence

Mega factory impact on raw materials

Raw Materials demand vs Global
Lithium Ion cell/mega-factory capacity



The data in this chart does not constitute a forecast, and assumes 100% utilisation rates

RECYCLING IS THE KEY TO SECURING AN ETHICAL SUPPLY

“Recycling plays pivotal role in securing battery supply chains...the region that leads battery technology and secures the supply chain will have outsized geo-economic and development influence.”

Science Magazine Oct 2019

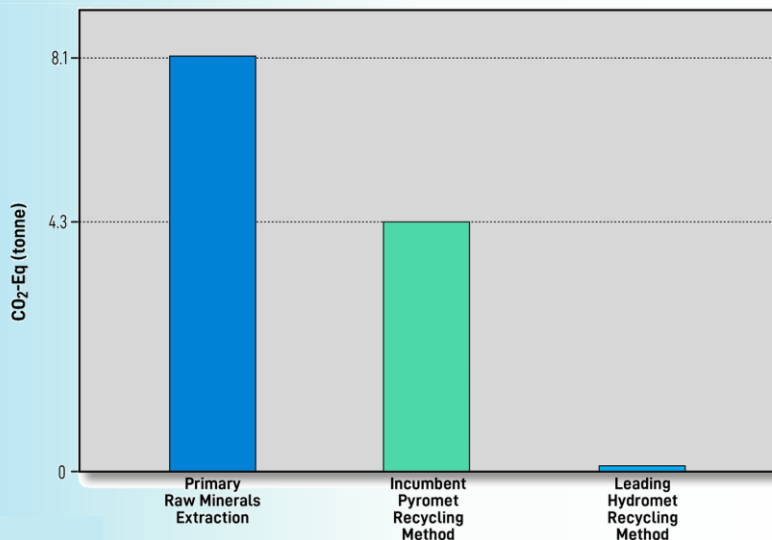


HYDRO-RECOVERY RECYCLING HAS THE LOWEST CARBON FOOTPRINT

- Comparisons between ICE and EV emissions are complex.
- EV recharging with coal powered electrons doesn't provide clear emissions advantage.

To ensure EV lifetime emissions are low, countries can decarbonise electricity and car manufacturers can recycle carbon intensive batteries.

Raw Material CO₂ Savings –
Traditional Mining vs Pyromet and Hydromet
Battery Recycling



Source: Duesenfeld



THE OPPORTUNITY



**Market
Tailwind**



**Low
Carbon**



**Government
Support**

TAILWINDS - THE TREND TOWARDS DE-CARBONISATION IS DRIVING DEMAND FOR LIBS



Demand and adoption of EV and ESS increases as the economics of de-carbonisation becomes more viable

- Paris Agreement target
- EU Green deal – One trillion Euro of investment between 2021-2027 to achieve no net emissions of GHG by 2050
- Trend towards phasing out ICE vehicles nation by nation

This creates mountains of scrap / spent LiBs, impacting the value chain.

1. Increased production of EV's

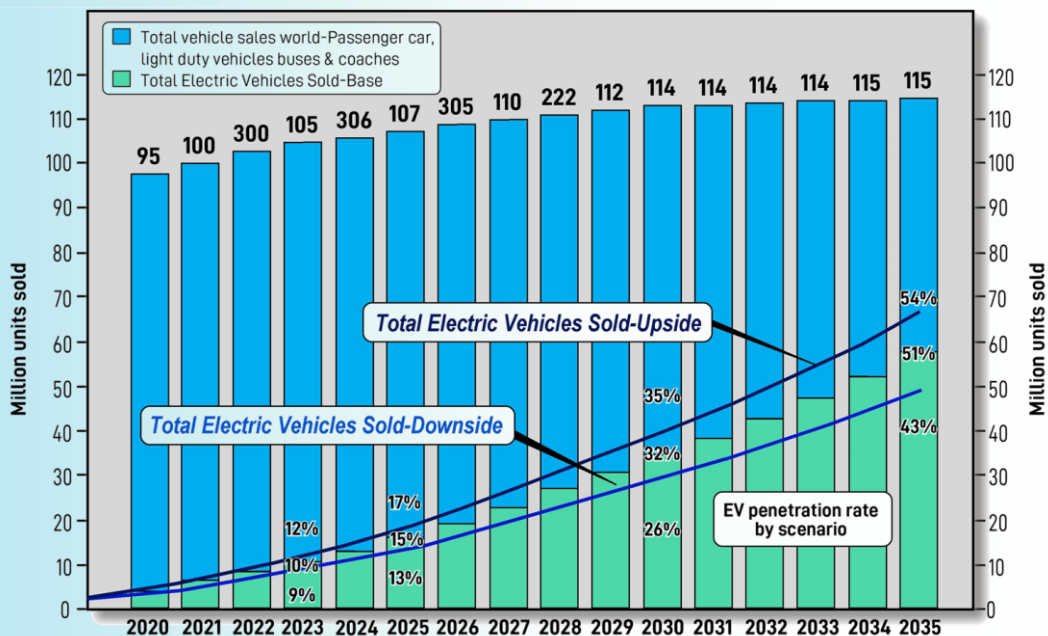
2. Greater LiBs demand

3. Increases in cell production capacity

4. Demand for battery value chain materials

1. EV DEMAND GROWTH FORECAST

Global EV Sales and Penetration Rate Forecast, 2020-35



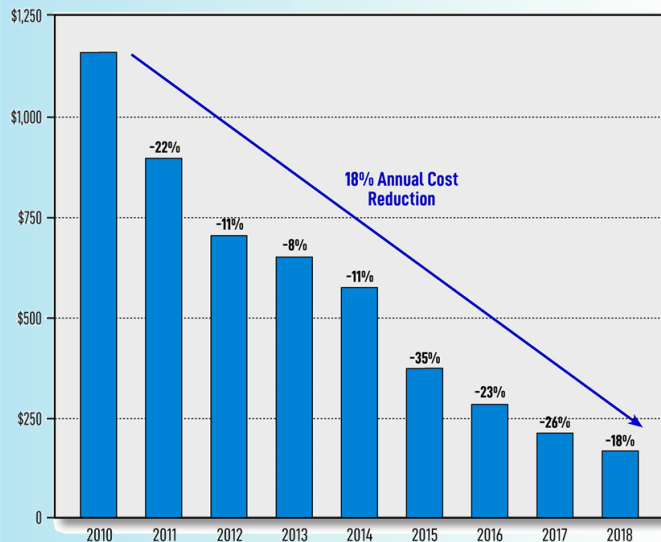
Source: rho motion

1. EV DEMAND GROWTH DRIVERS

The decline in battery production costs means the mass market will begin to drive demand.

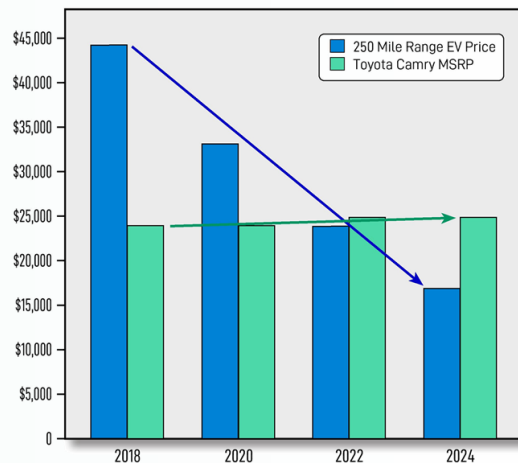
Electric Vehicle Sales Driven by Economics

Li-Ion Battery Costs Down by 85% Since 2010
(Pack Price - Real 2018 \$/kwh)



Source: BloombergNEF

- 1 EVs are superior vehicles - they are smoother, quieter and faster
- 2 EVs reduce greenhouse gas emissions by two-thirds relative to internal combustion vehicles (Wood Mackenzie)
- 3 EVs offer lower "total cost of ownership" ("TCO"); significantly less expensive to fuel and maintain
- 4 EV:ICE purchase price parity is approaching; Tesla has already achieved this with the Model 3



Source: ARK Innovation - Big ideas 2020



1. EV DEMAND GROWTH DRIVERS CONT'D

Europe

Government support is the other main driver of growth

France

- Plans to offer subsidies of up to €12,000
- Reducing EV prices by 40% in cases

Source: europe.autonews.com/automakers/frances-new-13000-ev-incentive-most-generous-europe

Eu

- Proposing a €20B purchasing facility for EVs
- Potential future exemption from VAT for EVs

Source: techau.com.au/eu-may-exempt-electric-vehicles-from-vat-should-Australia-remove-the-gst-and-ict/

England

- Subsidies of up to £3,000 pure EVs, considering increases to £6,000
- £1B investment in new charging points

Source: nissan.co.uk/experience-nissan/electric-vehicle-leadership/subsidies.html; electrek.co/2020/06/08uk-drivers-6k-taxpayer-funded-incentive-electric-cars/

Germany

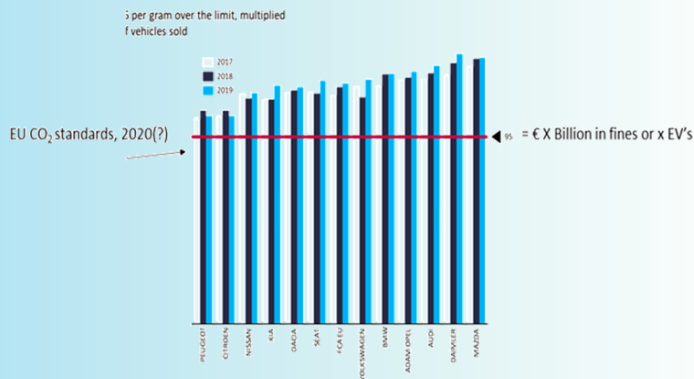
- Subsidies of up to €9,000
- Pure EV vehicle tax exemptions extended to 2050
- €60B in new charging points at every petrol station

Source: electrive.com/2020/06/04/Germany-doubles-ev-subsidies-no-more-diesel-support

1. EUROPEAN EV SUPPLY GROWTH DRIVERS

- Over the coming years, European manufacturers are going to struggle to reduce their CO2 emissions. If they fail, they run the risk of expensive fines.
- Companies such as VW are attempting to reach these emission standards by increasing their demand for EVs.

Selected OEM fleet average CO₂ emissions, 2017-2019



Note: includes estimates, to date not all OEMs have reported 2019 data

Menu Search Bloomberg Sign In

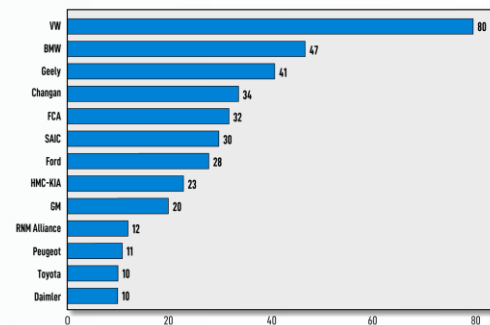
Hyperdrive

Europe's Tough Emissions Rules Come With \$39 Billion Threat

By [Chester Dawson](#) and [Oliver Sachau](#)

June 26, 2019, 12:00 PM GMT+8 Updated on June 27, 2019, 3:01 AM GMT+8

Number of EV's Launched by 2025

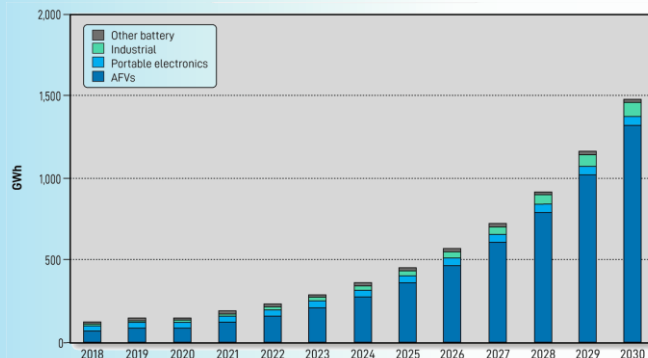


Source: BloombergAEF

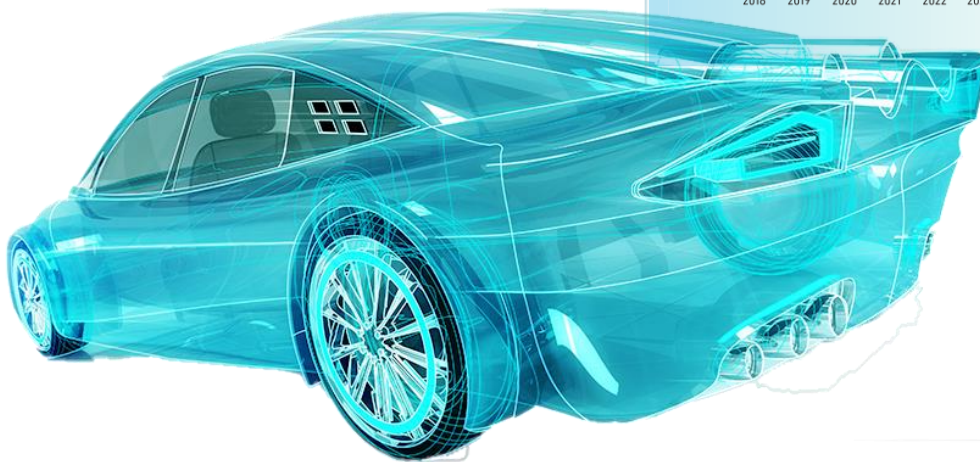
2. LIB DEMAND GROWTH FORECAST

Demand of EV and ESS means higher demand for batteries

Lithium-Ion Total Demand (GWh)



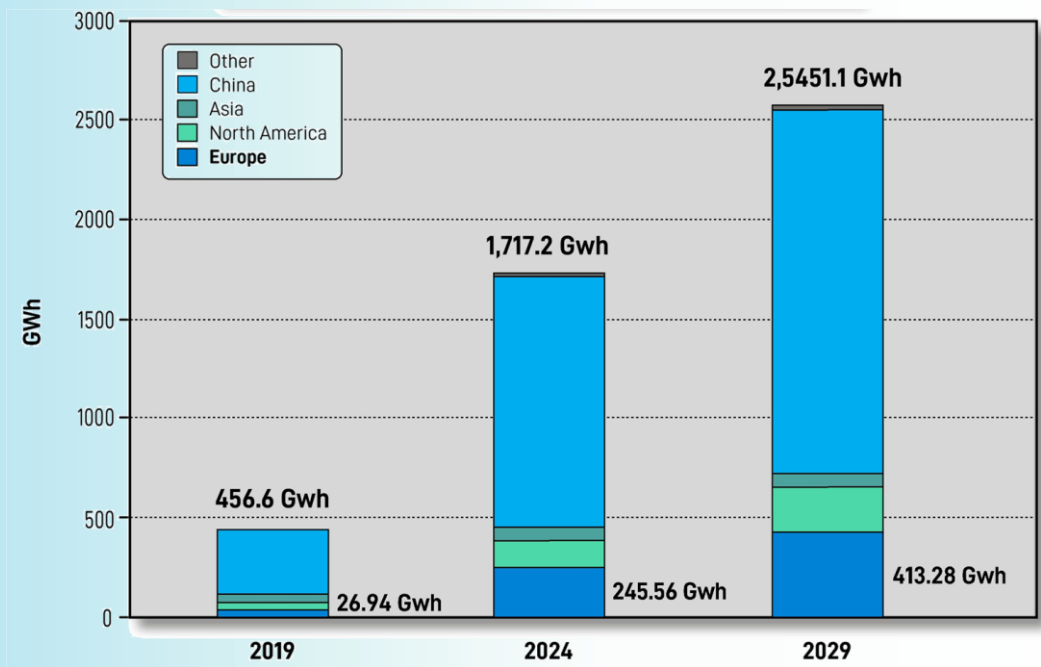
Source: Argus



3. LIB SUPPLY SOURCES

Global

Megafactory Capacity Forecast by Region

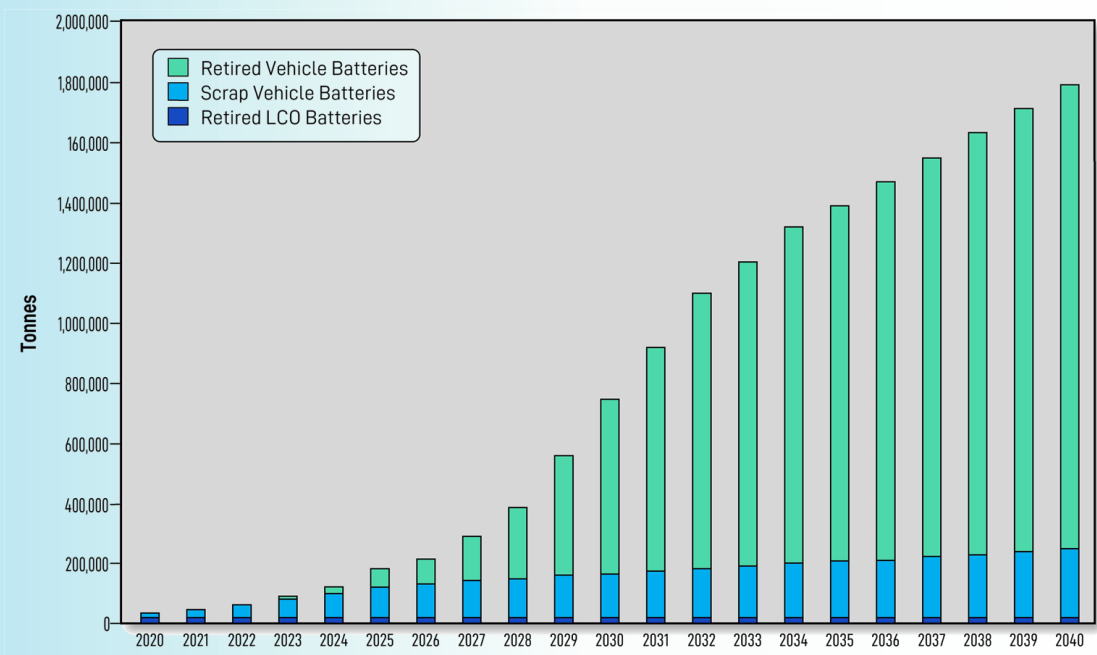


Source: Benchmark Mineral Intelligence



MORE PRODUCTION = MORE SCRAP AND END OF LIFE LIB'S

European Lithium Ion Battery Recycling Feed

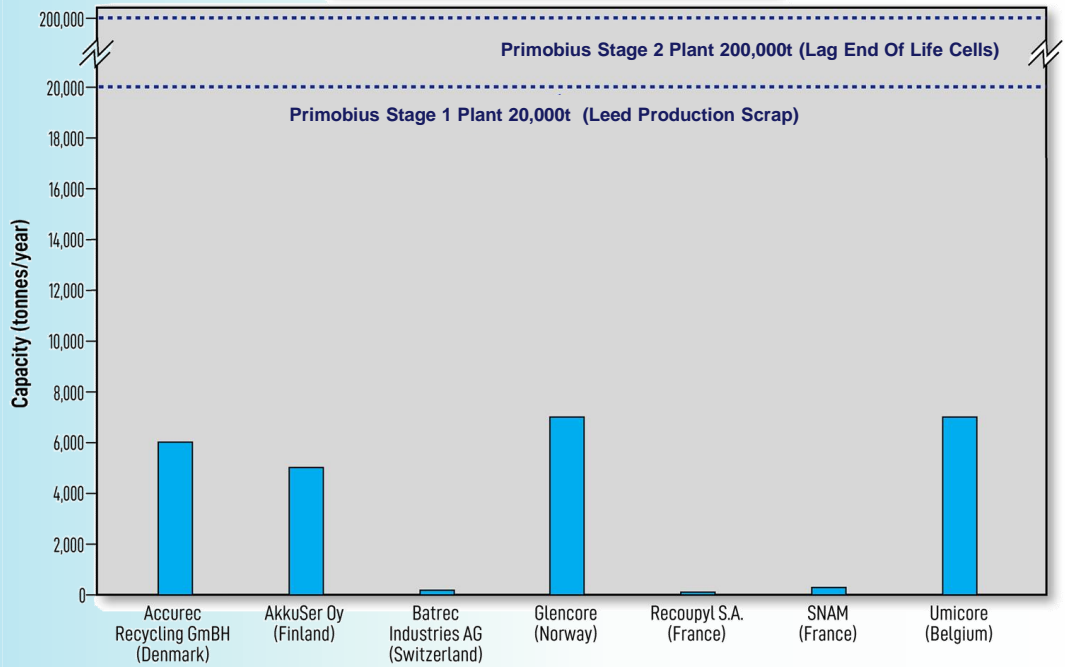


Source: Benchmark Minerals Intelligence (Battery Cell Capacity) and Neometals Management (Utilisation rate 75%, Scrap Rate 10% and Cell Weight 45g/Wh)



WHO WILL PROCESS THEM?

Major European EV Battery Recycling Facility Capacities



Source: Benchmark Minerals Intelligence

OUR UNIQUE SOLUTION



Safe

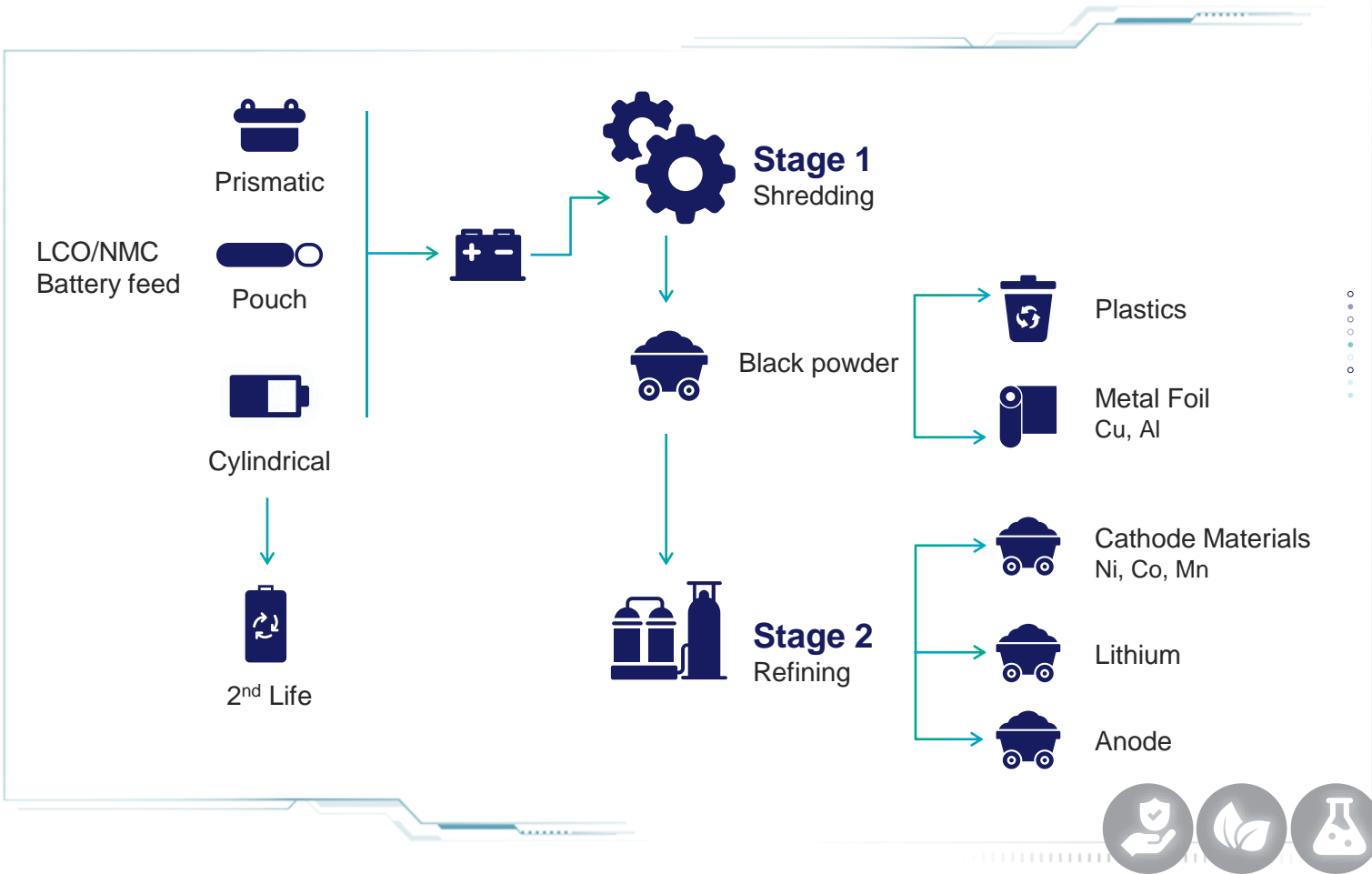


Eco-friendly



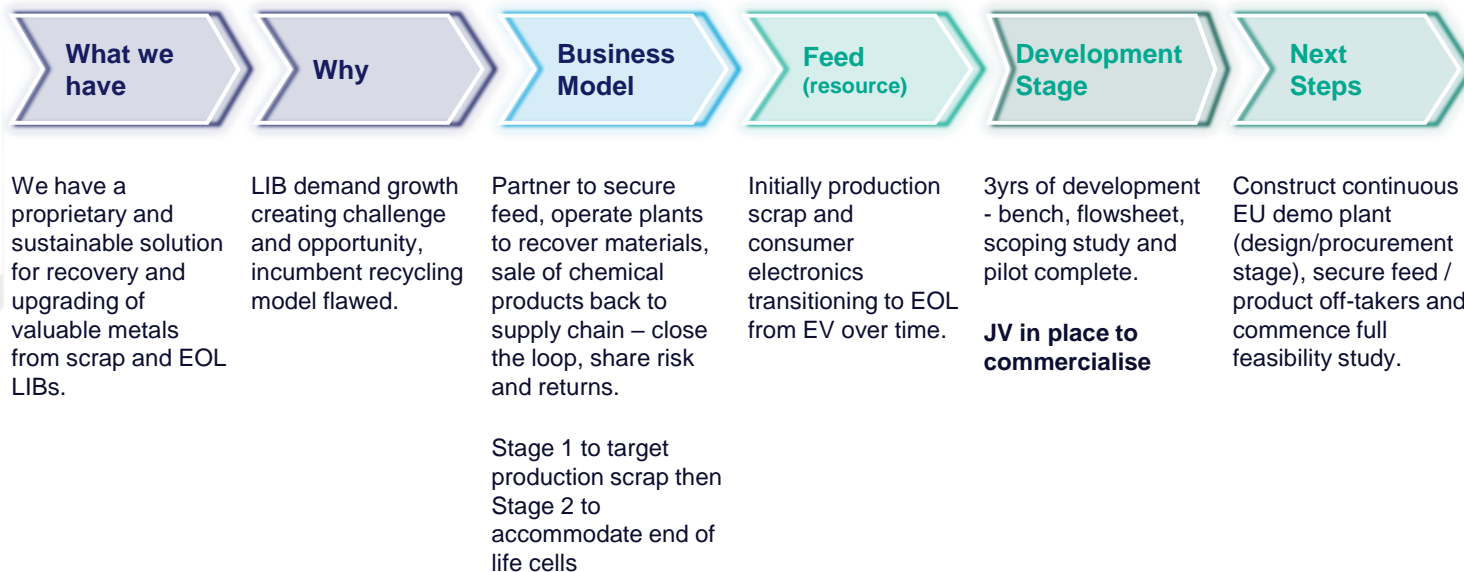
Pure

OUR UNIQUE SUSTAINABLE RECYCLING TECHNOLOGY



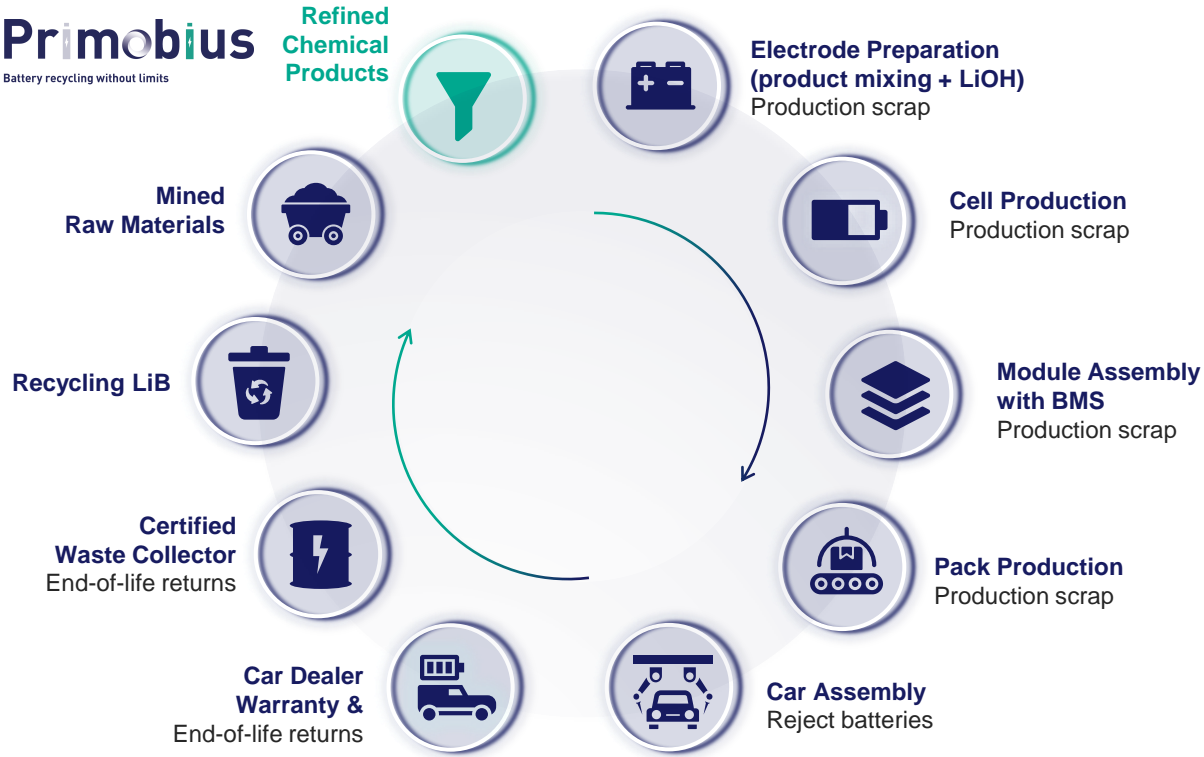
OUR PROCESS

Responsibly recovered materials to complement traditional mining.



PRIMOBIUS IN THE VALUE CHAIN

Type Value Chain for Automotive LiBs



OUR COMPETITIVE ADVANTAGE (USP)



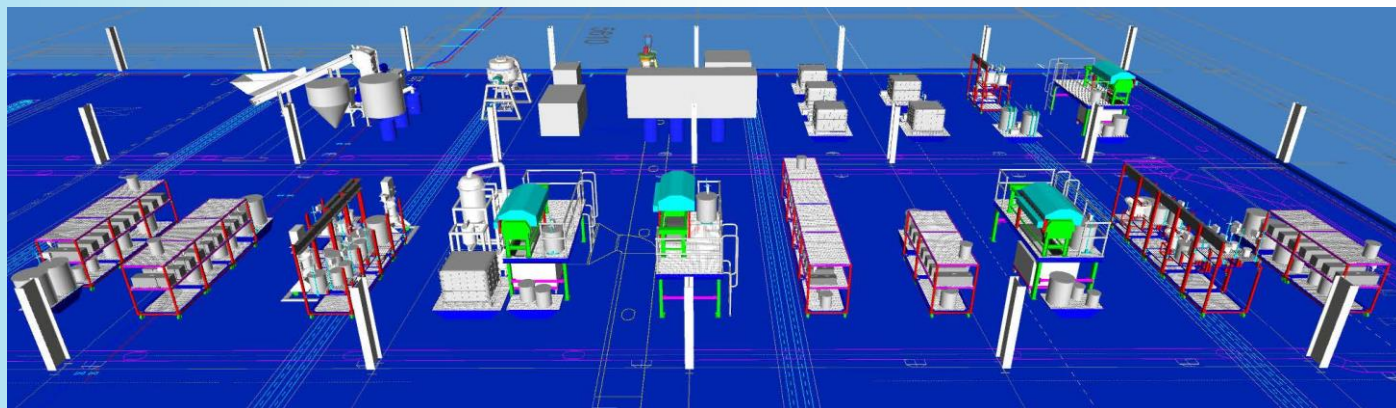
- Our exclusive eco friendly flowsheet enables a true closed loop, low CO₂ and reduced LCA GHG emissions.
- Safe destruction without needing to discharge cells.



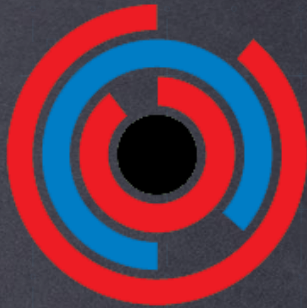
- A flexible approach means that shredding and refining don't have to be co-located.
- Hub and spoke model reduces transport complications with hazardous waste.



- High purity chemical products suitable for use in cathode, displaces need to sell mixed metals to refiners.
- The system is not reliant on payment for collection of spent cells.



OUR JOINT VENTURE WITH SMS GROUP



SMS  **group**

Primobius

Battery recycling without limits

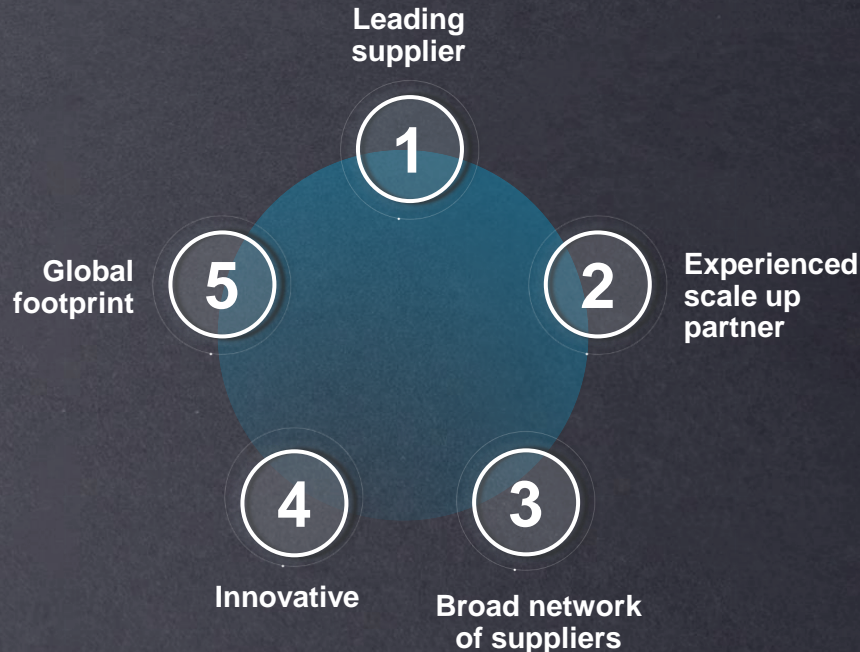
Exclusivity with SMS to form 50:50* JV

- Incorporation of European JV Co (Primobius) to commercialise NMT R&D
- Our joint venture will construct a showcase demonstration plant in Germany and complete feasibility study
- Evaluating both 20ktpa and 200ktpa plants
- SMS will build, operate and arrange debt financing on behalf of JV
- NMT to contribute piloted technology
- Global commercial roll out capitalising on the SMS global footprint (14,500 employees at 95 sites)

**for 50:50 debt:equity on a best endeavours basis*



PARTNERING WITH SMS GROUP



1. Leading supplier of metallurgical equipment and services

Long lasting history of about 150 years as leading supplier of metallurgical equipment and plants

2. Experienced scale up partner

SMS group has a continuous strategy to develop new business models enabling e.g. sustainable value chains and is an experienced scale up partner for new growth projects

3. Broad network of suppliers

SMS group has a broad network of suppliers around the world

4. Innovative

Continuous R&D work and innovation to be the leading partner. With latest innovations for e.g. environmental technologies, digitalization and technical service

5. Global footprint

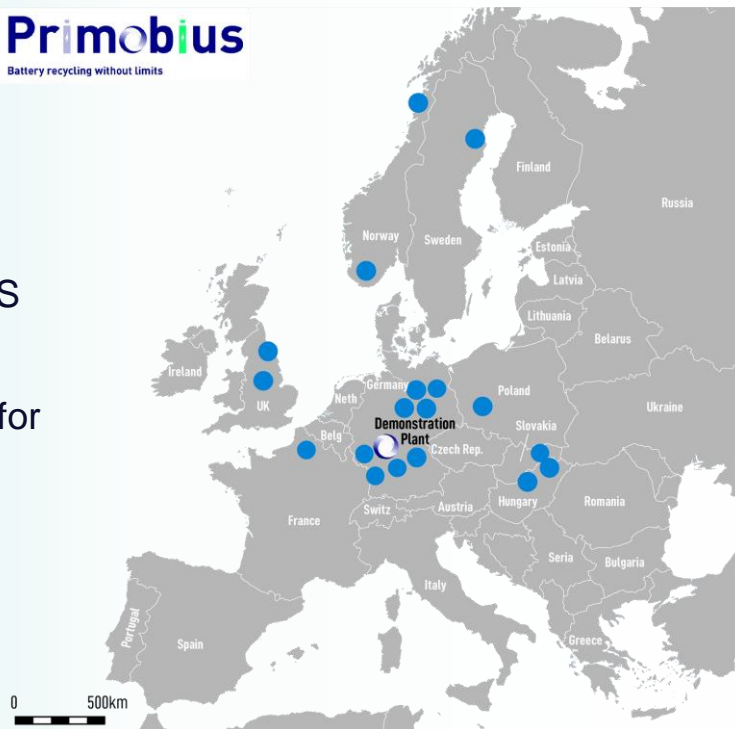
SMS group has 95 sites around the world employing around 14,000 people



EUROPEAN SHOWCASE OF HUB & SPOKE MODEL

- Feed preparation & refining of vehicle & cell maker scrap at SMS facility in Germany
- Provide battery grade chemicals for evaluation by potential off-takers

Primobius
Battery recycling without limits



DEMONSTRATION PLANT (DP)



SMS and NMT to design, SMS to build and operate on permitted site in Germany



MOUs are typical prelude to potential offtake arrangements



DP to process batches of spent cells from OEM's and deliver cathode intermediates as part of staged evaluation leading to offtake arrangements



Continuous demo at 1,000 scale sufficient to test hydrometallurgical stage 2



Output from DP to be allocated to selected customers in battery supply chain for qualification



Fully-integrated version of pilot flowsheet, commercial scale comminution circuit (~20,000tpa feed) contributed to JV by NMT



Opportunities to secure EU green incentives and funding



SMS MANUFACTURING CENTRE

Engineering and production under one roof

- SMS production shop covers a total of 40,000 m² and ranks among the most modern anywhere in the world
- Engineering and production under one roof to ensure efficient order processing
- Production of core metallurgical and rolling mill components ranging from sophisticated welded structures to mechanically manufactured parts
- DP trial in dedicated building with 1,000m² floor area for feed storage and all circuits
- SMS TECademy facility for customer training
- LernWERK as a blueprint for apprenticeships



OUR INDICATIVE TIMELINE

Indicative Project Timeline – LiB Recycling



Commenced
Procurement phase
for demonstration
plant

Complete
Construction of
demonstration plant

Complete
Demonstration
Plant Trial

Complete
Class 3 ECS
Capex & Opex

Complete
Feasibility study and
FID*

Commence
Commercial scale
integrated operations

JUNQ20

DEC 20

MAR 21

SEPQ21

MARQ22

~12 months

Running Feedstock, Offtake, Product Evaluation in parallel

(*) Subject to NMT and JV Board Approval



INVESTORS



**Business
Case**



**Value
Proposition**



Growth

Primobius

Battery recycling without limits



Our Joint Venture is an outcome of Neometals' extensive due diligence on our substantive R&D program



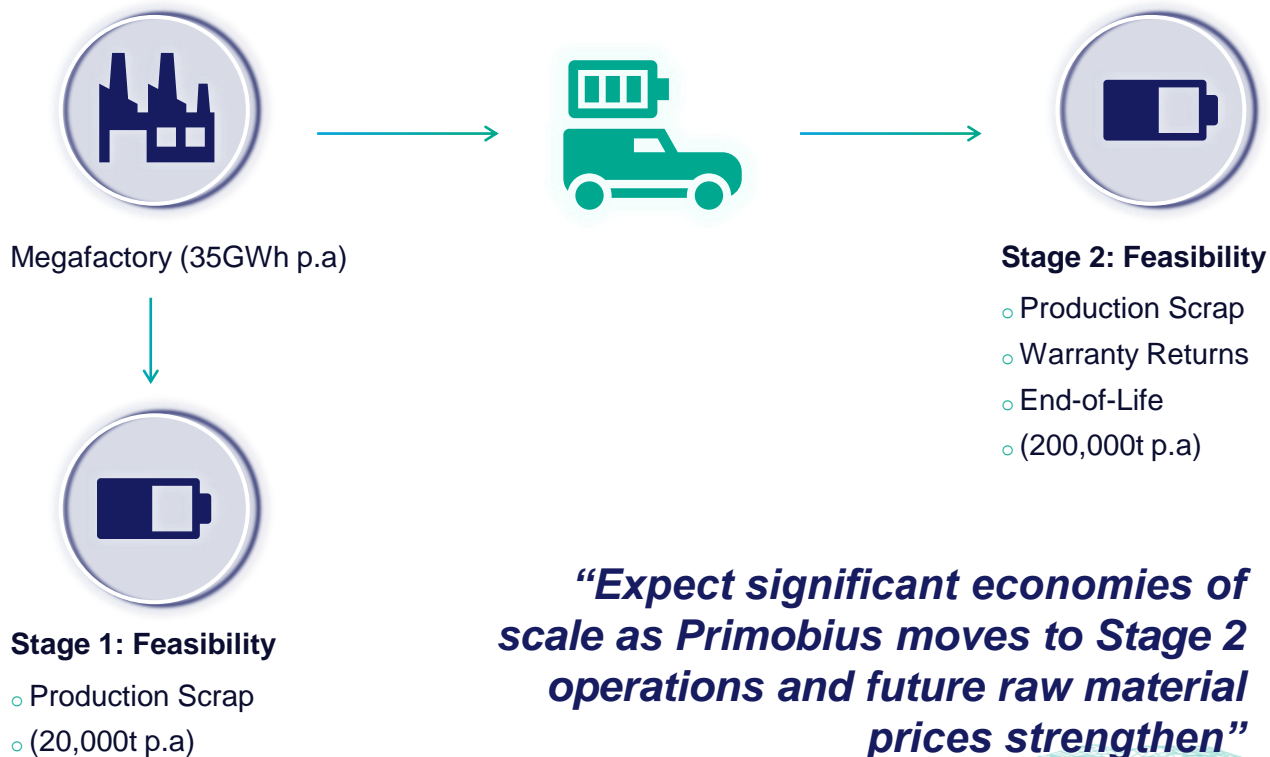
It is a validation of our:

1. Business model
2. Technical viability, and
3. Size of opportunity



Primobius provides a clear and credible path to commercialization and cashflow

AIM IS TO BE RECYCLER OF CHOICE FOR CARMAKERS AND CELL MAKERS



“Expect significant economies of scale as Primobius moves to Stage 2 operations and future raw material prices strengthen”

VALUE PROPOSITION

Scoping Study 20KTPA



Recycling plant feed rate

50tpd 18,263tpa



EV & Consumer battery feed

Products

Inc. high purity
Co, Ni, Cu, Li



Opex

US <\$7/lb*

Contained cobalt
excluding co-products



Capital Costs

US\$66M*

A\$92M



Payback

<2 years



Pre tax NPV₁₂

IRR 72%

US\$220M*

A\$308M

*1 USD: 1.4 AUD at US\$6.15/kg Cobalt Sulphate (~20% cobalt contained in CoSO₄). US\$5/kg Lithium Sulphate. US \$3.30/kg Nickel Sulphate. US\$2/kg Copper Sulphate

Please refer to ASX announcement 4 June 2019 titled "Battery Recycling – Scoping Study Results" which is available at www.neometals.com.au

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.



CONCLUDING HIGHLIGHTS



Sound business case - industry validation and path to cash-flow via Primobius.



JV partners with global footprint and R&D commercialization experience.



Strong value proposition - robust project economics.



Enormous industry and macro tailwinds – EV/ESS megatrend driving growth.



Recycling generates materials without mining risk (urban recovery).



Strategic source of green / ethical non-mine cathode intermediate.



Alignment with global drive to reduce greenhouse emissions and contribute to circular / closed loop economies.



Neometals has the balance sheet to underwrite project participation.