

Vanadium Recovery Project – Feasibility Study Results and Project Update

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Authorised for release by Christopher Reed,
Managing Director of Neometals

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All figures in this document are in Australian dollars (AUD) unless stated otherwise.

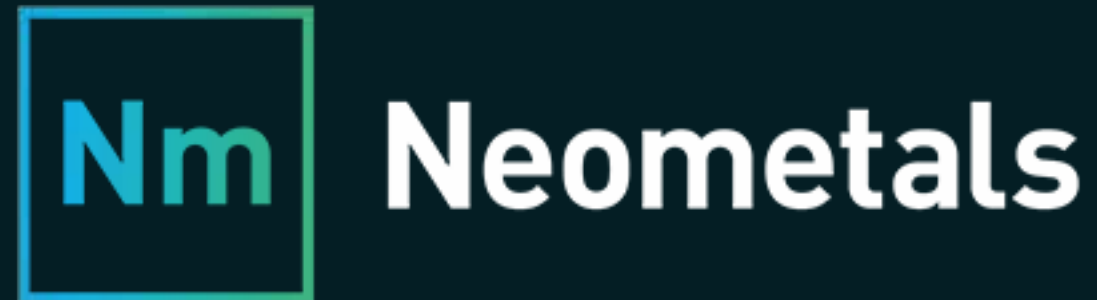
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Executive Summary



Neometals is an emerging, sustainable battery materials producer.



3 business units supporting energy transition in the EV / ESS supply chains:

Li-ion Battery Recycling (Ni/Co)
Vanadium Recovery
Lithium Chemicals



Underpinned by proprietary, green, processing technologies

13 Granted Patents
56 Patents Pending



ESG commitment. Recycling and recovery minimise reliance on mined materials and reduce carbon footprint


















Focus on continuous development and innovative commercialisation with strong partners



Strong, growing team with track-record of value creation, project execution and shareholder return.

Core Battery Materials Business Snapshot

Business Unit	<p>Lithium-ion Battery Recycling </p>	<p>Vanadium Recovery </p>	<p>Lithium Chemicals </p>
Business Unit Partners	<p>50:50 Incorporated JV Primobius</p>	<p>50:50 Incorporated JV</p>	<p>Reed Advanced Materials ("RAM") 70:30 Incorporated JV</p>
Project Development Partners	<p>SMS group</p> <p> Mercedes-Benz</p> <p> </p>	<p>Critical Metals</p> <p>SSAB</p> <p>H2green steel</p>	<p> MINERAL RESOURCES</p> <p>30%</p>
Key Regions of Focus	<p>  </p>	<p> </p>	<p>Co-operation Agreement for 50:50 Incorporated JV with RAM</p> <p> BONDALTI EVOLVING CHEMISTRY</p> <p> </p>
<p>Underpinned by proprietary, sustainable processing technologies that recover battery materials</p>			



Vanadium Recovery

Vanadium Recovery Process Technology
100% Neometals

Vanadium Recovery Project 1 - Finland
50:50 Incorporated JV with Critical Metals Ltd,
Recycling Industries Scandinavia AB (“RISAB”)



Vanadium Market Background

MAIN FINISHED VANADIUM PRODUCTS

Vanadium (V) is a silvery-grey transition metal that has two main finished vanadium products:

Vanadium pentoxide (V₂O₅)



- Vanadium pentoxide can be utilized in steel applications as well as other applications such as non-ferrous alloys, chemicals and vanadium redox flow batteries
- Higher-purity forms of vanadium pentoxide are also supplied, albeit in smaller quantities and typically commands a pricing premium

Ferrovandium (FeV)



- Ferrovandium is an alloy of vanadium and iron, with vanadium content between 35-85%
- Vanadium is added to regular carbon steel mainly as ferrovandium
- Even in small quantities, it can increase tensile strength, increase high-temperature strength and increase a grain refining and dispersion hardening effect in tempering steel

Source: Vanitec

VANADIUM CONSUMPTION



Vanadium redox flow batteries (VRFBs)

- Vanadium pentoxide is used in VRFBs with need for high-purity (>99%) product to improve battery efficiency and lifetime



Steel

- Ferrovandium is a necessary ingredient for carbon steel production
- Used in steel manufacturing in the form of ferrovandium or vanadium-nitrogen alloys to increase strength (high-strength low-alloy steel or full alloy steels)



Aerospace alloy

- Vanadium-aluminium master alloys, which are used in the production of titanium alloys
- Needed especially in aerospace industry



Chemical catalyst

- Catalysts used in medical, glass, and pigments (smaller volume and specialized markets)

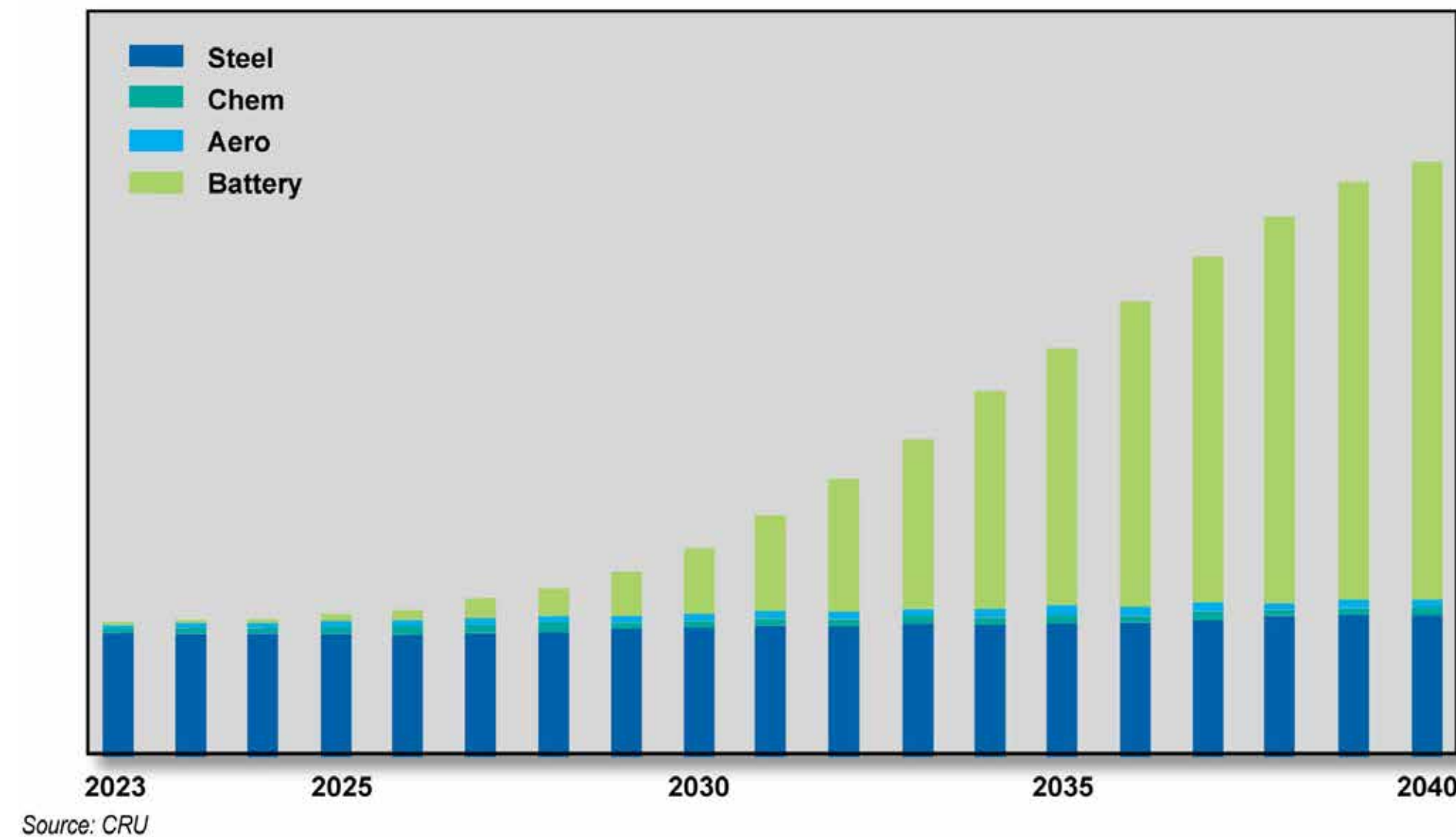


Growth Market Supported by Energy Transition

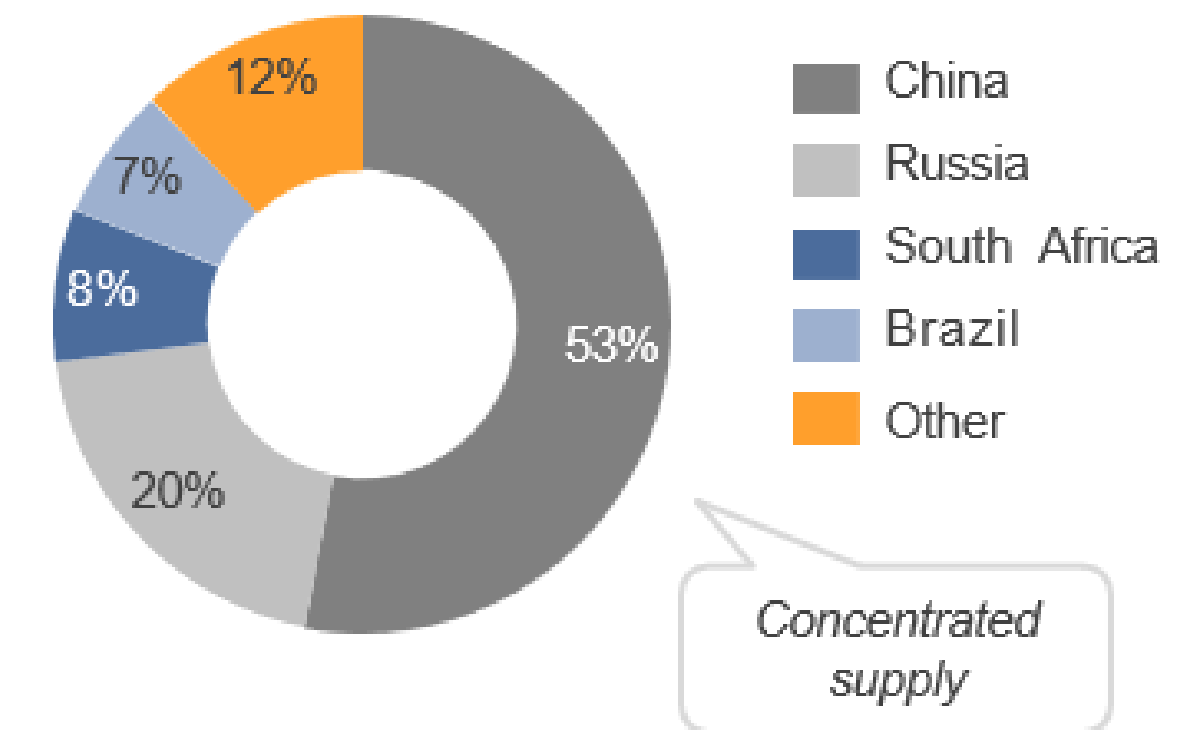
MARKET DYNAMICS

- Vanadium consumption is primarily anchored to steel production with demand from energy storage (vanadium redox flow batteries) becoming dominant use next decade
- Once in operation, RISAB will supply c. 3% of the global vanadium supply (2027) and it will be the only European vanadium producer
- VRP1 aims to be largest producer of high-purity V₂O₅ for the production of electrolyte for VRFBs
- Given the current geopolitical environment and a push to reduce reliance on China, European prices are expected to continue to remain stable¹

VANADIUM DEMAND BY END USE, 2023-2040



CURRENT PRODUCTION BY COUNTRY



Sources: Wood Mackenzie 2022, Vanitec

1) Based on CRU market study as of January 2023



Extracting Vanadium from Industrial By-products

INTRODUCTION TO THE FINNISH VANADIUM RECOVERY PROJECT (“VRP1”)

PLANT LOCATION AND KEY INFORMATION

-  Location: **Tahkoluoto Port, City of Pori, Finland**
-  Average annual revenue: **~200M USD (post-ramp-up)**
-  Capital cost: **~314M USD**
-  Operating cost: **US\$4.19/lb V₂O₅ (lowest quartile)**
-  Construction timeline: **H2 2023 – H2 2025**
-  Slag secured: **10 years 2m tonnes minimum** (stockpiled plus first right to purchase additional volumes from SSAB’s future production)
-  Throughput: up to **300k tonnes p.a.**
-  Annual production: **~9k tonnes V₂O₅**

Selected stakeholders:



COMPANY DESCRIPTION AND BACKGROUND

- § RISAB (“Company”) is established by two green battery materials and technology companies Critical Metals and Neometals.
- § The Company will build and operate a plant which will recover vanadium from steel production side stream and process it into high-purity vanadium that is used e.g. in greener steel and energy storage applications (the “Project” or “VRP1”)
- § Currently the raw material (slag) is secured for 10-year term
- § The final investment decision is subject to finance. RISAB has leading Nordic investment banks managing the equity and debt financing process.

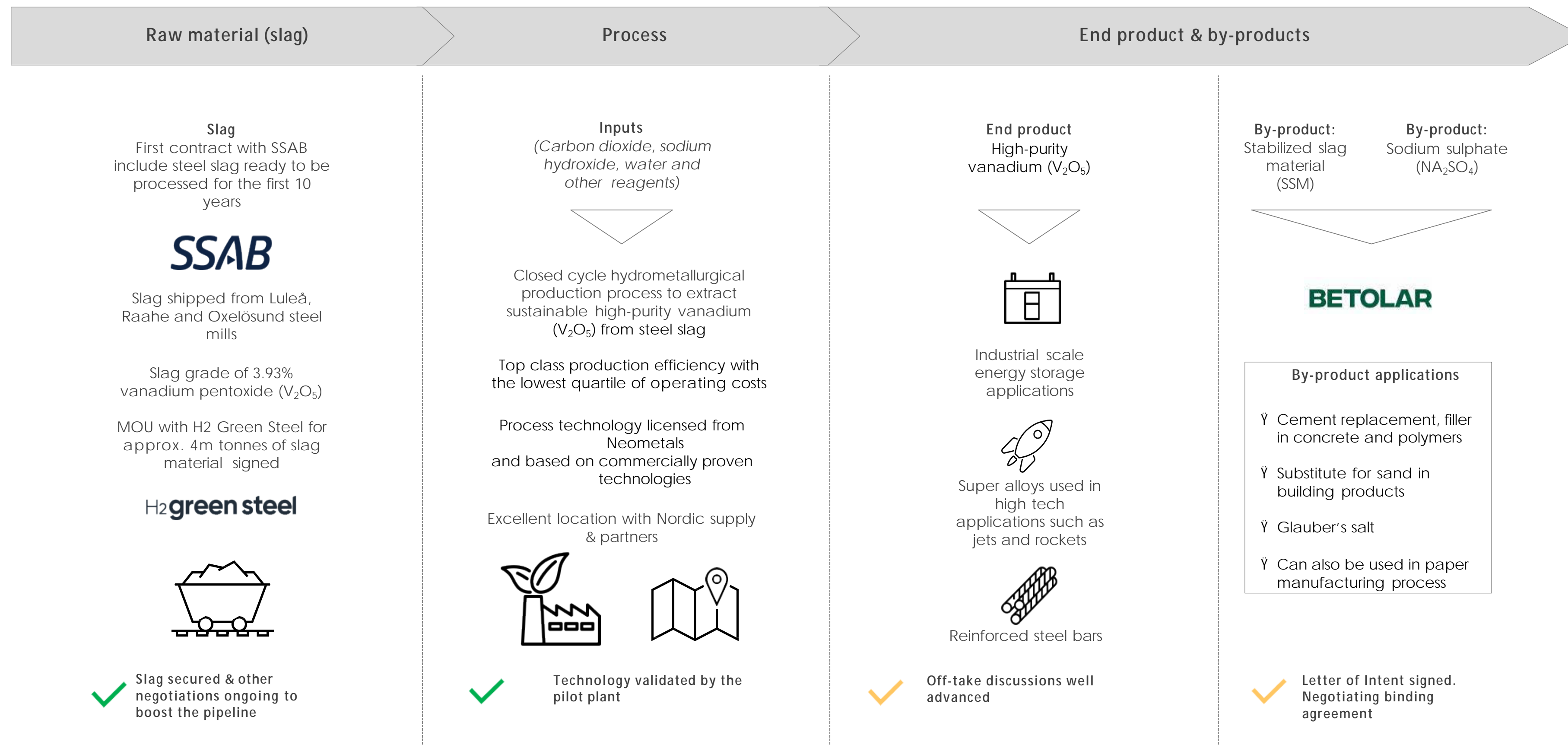


For further information, refer to ASX release dated 8th March 2023 – Vanadium Recovery Project Delivers Strong Feasibility Results



Carbon Negative* Production Process to Extract Vanadium from Steel Slag

CLOSED CYCLE VANADIUM PRODUCTION PROCESS



*For further information, refer to ASX release dated 8th March 2023 – Vanadium Recovery Project Delivers Strong Feasibility Results

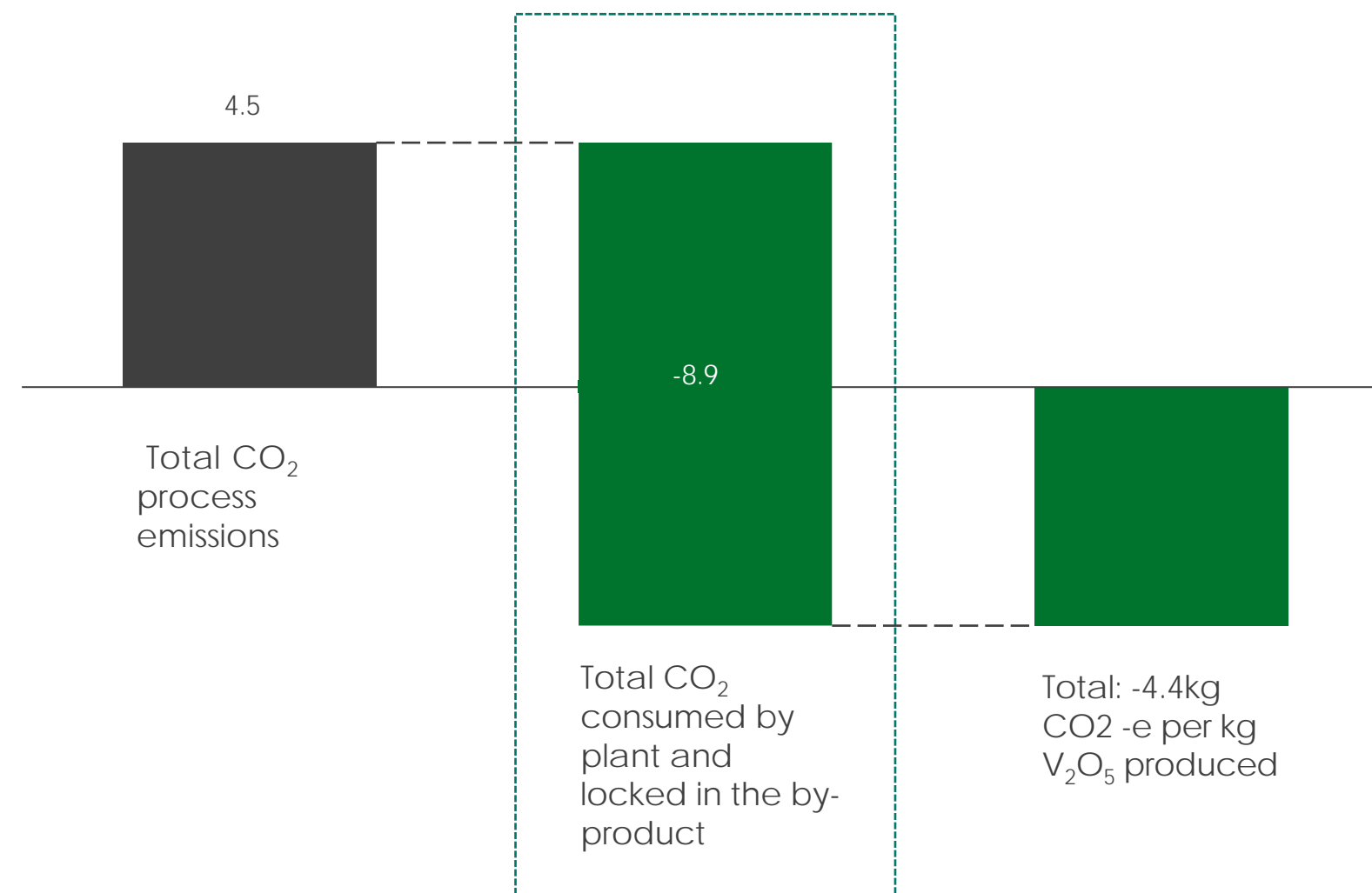


RISAB – Promoting Circular Economics

RISAB will be amongst the largest CO₂ consumers in Finland promoting circular economics

CARBON FOOTPRINT*

kg CO₂-e per kg CO₂ V₂O₅ produced



The company will be one of the largest consumers of CO₂ in Finland annually and will source its CO₂ from industrial processes

Sources: Internal image based on data from Minviro

1) CO₂ emissions are related to e.g. electricity, steam boiler, transport and consumption of other materials

*For further information, refer to ASX release dated 8th March 2023 – Vanadium Recovery Project Delivers Strong Feasibility Results

CLOSED CYCLE PRODUCTION PROCESS PROMOTING THE CIRCULAR ECONOMY



Steel slag

- Existing slag from steel production facilities reused / recycled



Processing technology

- Low emission and low temperature hydrometallurgical process
- All process water recycled
- Minimal impacts on biodiversity
- Renewable energy utilized



End product

- Applications include e.g., vanadium redox flow batteries and steel strengthening steel applications
- Potential positive scope 3 emissions impact



By-products

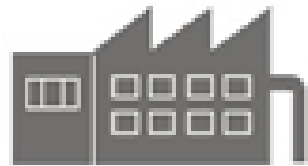
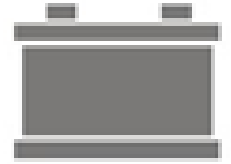



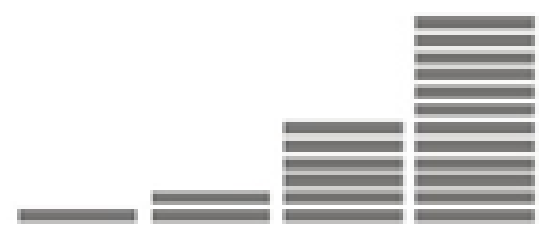

- By-products reuse
- Utilized e.g. in the production of a low-carbon cement



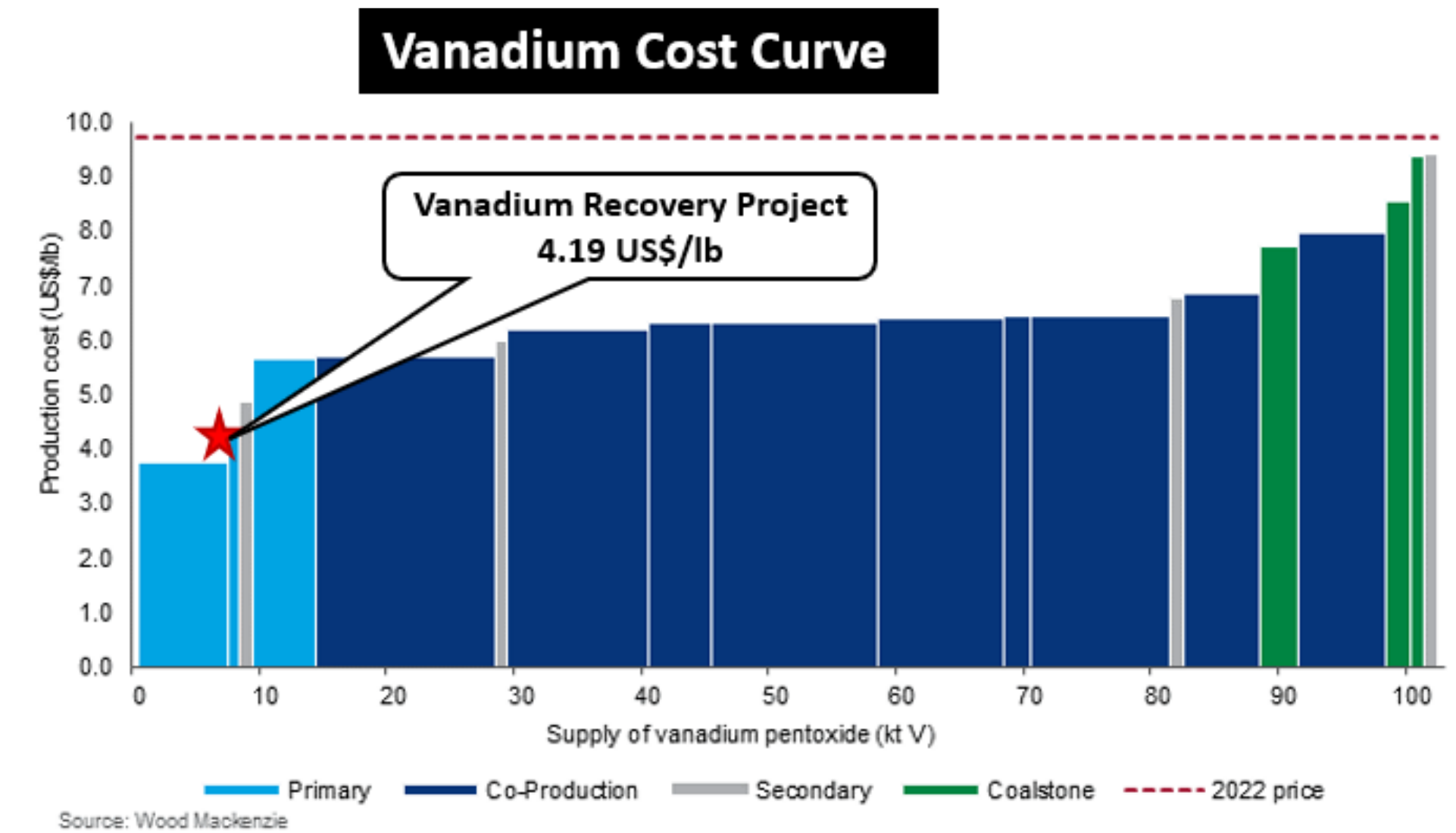
Circular element

Feasibility Study



<p>THROUGHPUT RATE</p>  <p>300,000dtpa</p>	<p>PRODUCTS</p>  <p>19.1M lbs p.a. high purity zero carbon V_2O_5</p>	<p>OPEX (excl. royalty)</p>  <p>US\$4.19/lb</p>	
<p>CAPITAL COSTS</p>  <p>US\$314.4M</p>	<p>NPV₁₀*</p>  <p>US\$323M</p>	<p>IRR*</p>  <p>24.8%</p>	<p>SIMPLE PAYBACK</p>  <p>5.7 years</p>

* Pre tax

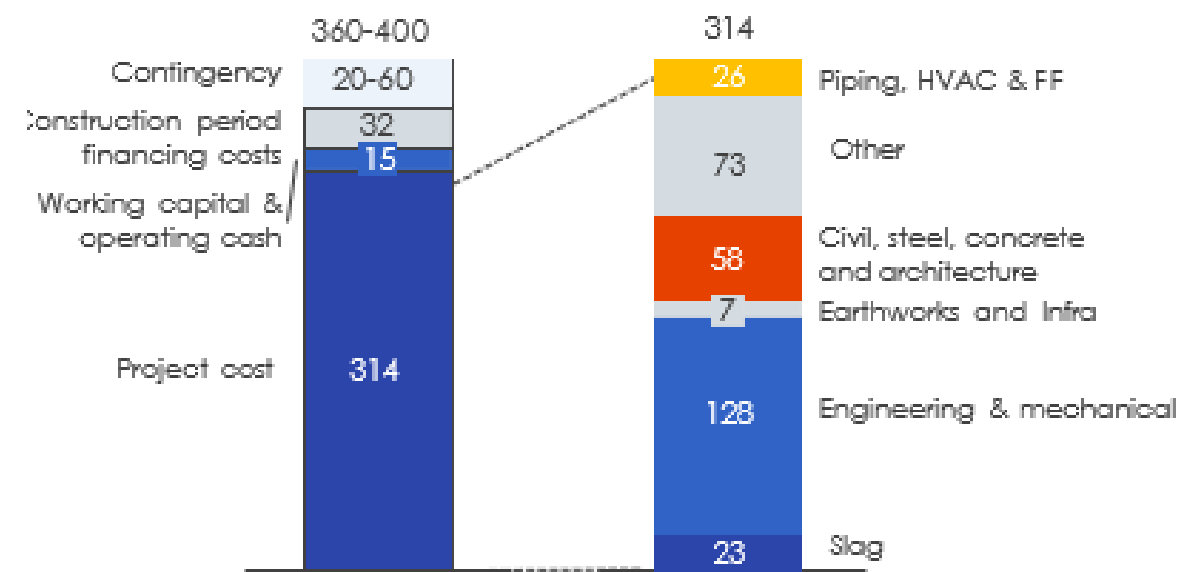


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Funding Structure and Strategy

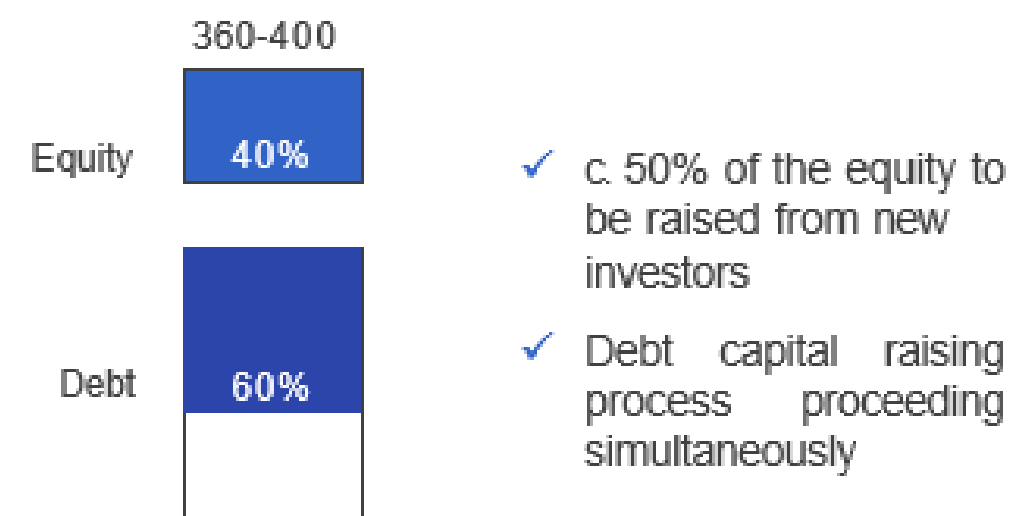
ESTIMATED PROJECT COST (MEUR)



*Additional buffer for extra contingency, working capital needs and general corporate matters

- Total estimated construction cost of the plant 360-400 MEUR includes initial working capital and cash buffer reserves
- Capital cost estimate from Sweco feasibility study (AAE Class 3 Study) for 300k tpa facility
- AAE Class 3 Engineering Cost Study by Sweco was review by independent expert, Behre Dolbear Australia

ESTIMATED PROJECT COST (MEUR)



1) 1.12 USD/EUR fx rate assumed

- Target to fund 60% of total project cost with debt
- Target to fund 40% of total project cost with equity
- Neometals and Critical Metals maintain the right to finance their current ownership share of the Company

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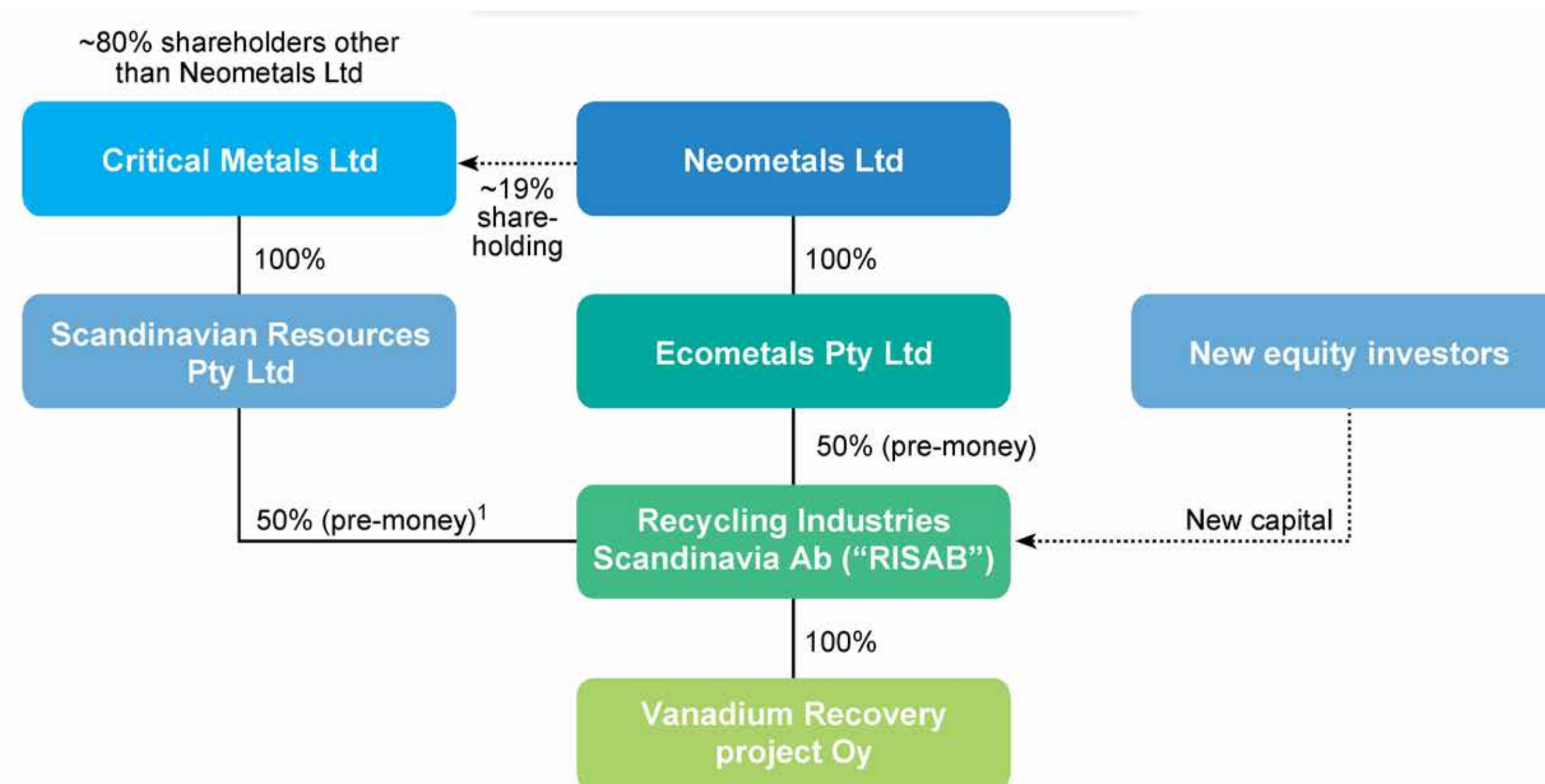
FY23 Workflow



NEXT STEPS

- Work with equipment vendors and engineering firms to continue advancing project engineering
- Procure vanadium product and calcium carbonate by-product offtake agreements
- Procure new equity investors into RISAB and credit approved term sheets for debt financing to enable consideration of financial investment decision by 30 June 2023

VRP CORPORATE STRUCTURE



¹. Assumes Critical contributes A\$3M on or before 31 March 2023



Indicative Timeline – Vanadium Recovery

KEY MILESTONES

- 

Lease agreement with the city of Pori

Signed lease agreement with the city of Pori for the VRP plant to be situated in Tahkolouoto
- 

Operational and environmental permit

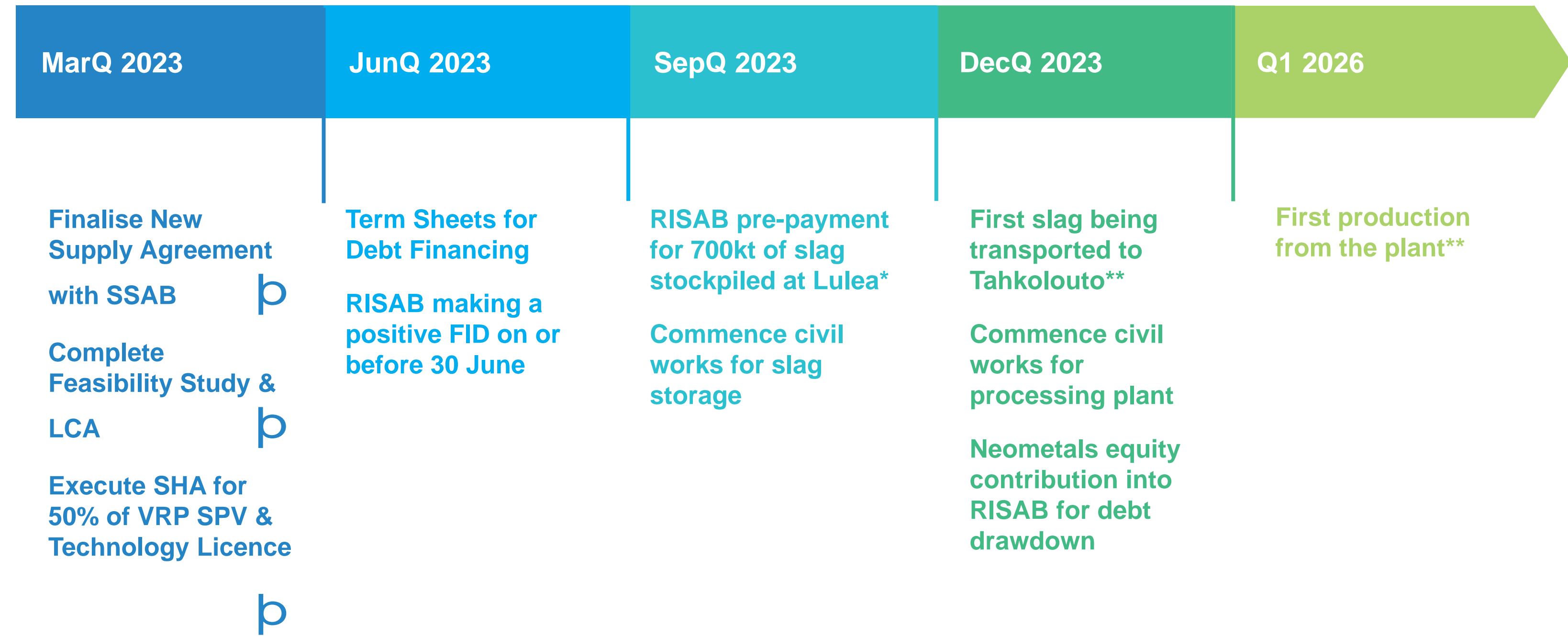
Permit to start operations from the Regional State Administrative Agency received
- 

Feasibility study on vanadium applications

Third party study confirming that produced vanadium pentoxide is suitable for vanadium flow redox battery technology and production
- 

Contracts with SSAB and Letter of Intent with Betolar

Signed Letter of Intent for by-product and binding Slag Supply Agreement



* Pre-payment to be paid within 72 hours after the Buyer's Positive Investment Decision

** Subject to FID, approvals and finance



Key People – Experienced Team Onboard

Johanna Lamminen
CEO



- § Highly experienced business leader and board professional
- § Experience includes CEO of Gasum, CEO and CFO of Danske Bank Finland, CFO and deputy CEO of Evli and board member of Pohjolan Voima and ETLA
- § Doctor of Science in industrial management



Darren Townsend
COO



- § Mining Engineer with 25+ years development, mining and corporate experience including managing ASX and TSX listed companies
- § Chief Development Officer, Neometals, a minerals and advanced materials company



Damian Hicks
Business Development



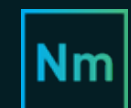
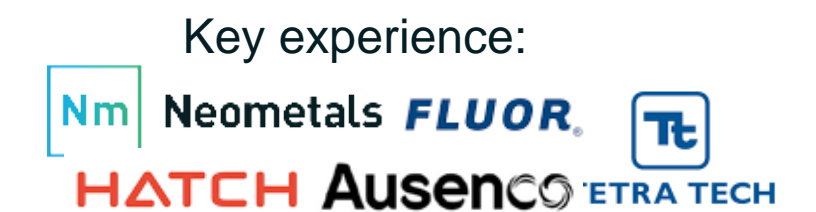
- § Strong background in the circular economy, resource extraction, use, reuse, and recycling
- § Executive Director of Critical Metals, Kiruna Iron, ASX listed Hannans Ltd and Chairman of advisory firm Corporate Board Services



Irena Ivanova
GM – Project Development



- § Chemical Engineer with extensive expertise in process design, technology implementation, project and engineering management and team development
- § General Manager – Evaluation Studies, Neometals, a minerals and advanced materials company





Investment Case – Highlights

SUPPLY CONSTRAINED CRITICAL BATTERY MINERALS WITHOUT MINING RISK



Thank you.