



**CRITICAL
MINERALS
GROUP**

WHAT IF WE DON'T MINE THE CRITICAL MINERALS?

Presenter:
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ASX:CMG

Important Information



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The information in this presentation relating to Mineral Resources is extracted from the company's ASX announcement titled 'Lindfield Vanadium Project Delivers Improved Mineral Resources Estimate with Grade and Tonnage to World Class Scale' dated 16 May 2023 which is available to view on www.asx.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 announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Production targets and forecast financial information

The information in this presentation that relates to production targets and forecast financial information derived from a production target is extracted from the company's ASX announcement dated 9 November 2023 ("Revised release of Scoping Study results") available to view at www.asx.com.au (**Scoping Study Announcement**). The company confirms that all material assumptions underpinning the production targets and forecast financial information derived from production targets set out in the Scoping Study Announcement continue to apply and have not materially changed.

Scoping Study cautionary statement

The Scoping Study referred to in this presentation is based on the Scoping Study released by the company to ASX in the Scoping Study Announcement.

The company advised that the Scoping Study has been undertaken to consider the development of the Lindfield Vanadium Project. It is a preliminary technical and economic study of the potential viability of the Lindfield Vanadium project. It is based on low-level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further evaluation work and appropriate studies are required before the company will be in a position to estimate any ore reserves or to provide an assurance of an economic development case. There is a low level of geological confidence associated with any Inferred Mineral Resources, and there is no certainty that further exploration work will result in the determination of Measured or further Indicated Mineral Resources or that the Production Schedule or preliminary economic assessment will be realised.

The Scoping Study is based on the material assumptions outlined in the Scoping Study Announcement. These include assumptions about the availability of funding. While the company considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

Important Information



To achieve the range of outcomes indicated in the Scoping Study, additional funding will be required. The company has a supportive shareholder base and has successfully raised capital to progress the project in the past. However, investors should note that there is no certainty that the company will be able to raise the amount of funding required to develop the project when needed. It is also possible that such funding may only be available on terms that may be dilutive or otherwise affect the value of the company's existing shares. It is also possible that the company could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the Lindfield Vanadium project. If it does, this could materially reduce the company's proportionate ownership of the project.

The Scoping Study results contained in this presentation relate solely to the Lindfield Vanadium project and do not include Exploration Targets or Mineral Resources defined elsewhere. The company has concluded it has a reasonable basis for providing the forward-looking statements included in this presentation.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

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This presentation contains 'forward-looking statements' that are based on the company's expectations, estimates and projections as of the date on which the statements were made. These forward-looking statements may include, among other things, statements with respect to prefeasibility and definitive feasibility studies, the company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this presentation are cautioned that such statements are only predictions, and that the company's actual future results or performance may be materially different. Forward-looking statements are 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. The forward-looking statements included in this presentation speak only as of the date of this presentation. Except where required by law or the ASX Listing Rules, the company does not intend to update or revise the forward-looking statements in this presentation in the future.

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Competent Person Statements

The information above that relates to Mineral Resource estimates is based on, and fairly represents, information compiled by Adrian Buck, a Competent Person, who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Adrian Buck is the Principal Geologist – Australia for John T Boyd Company. Adrian Buck has sufficient experience with the style of mineralisation and type of deposit under consideration, and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves'. Adrian Buck consents to the inclusion of the matters based on their information in the form and context in which it appears. The information above that relates to metallurgy and metallurgical test work is based on, and fairly represents, information compiled by Nicola Semler, a Competent Person, who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Nicola Semler is the Metallurgist and Chief Technical Officer – CMG. Nicola Semler has sufficient experience with the style of mineralisation and type of deposit under consideration, and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves'. Nicola Semler consents to the inclusion of the matters based on their information in the form and context in which it appears. The information above that relates to mining engineering and mine planning is based on, and fairly represents, information compiled by Gary Benson. Mr Benson BE is a Mining Engineer with 40 years of experience and is a Fellow of the Australasian Institute of Mining and Metallurgy (FausIMM). Mr Benson has sufficient experience, which is relevant to the style of mineralisation, geology and type of deposit under consideration and to the activity being undertaken to qualify as a competent person under the 2012 edition of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012); Mr Benson is an Associate of Measured, is independent of CMG; and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to the exploration results, exploration targets and mineral resources for the Company's Lindfield Vanadium Project was first reported by the Company in the Company's prospectus dated 25 May 2022 and ASX announcements dated 22 February 2023, 13 March 2023 and 16 May 2023. The Company confirms that it is not aware of any new information or data that materially affects the exploration results, exploration targets and mineral resources, and that all material assumptions and technical parameters underpinning these continue to apply and have not materially changed. Where the Company refers to exploration results or mineral resources in this announcement (referencing previous releases made to the ASX), it confirms that it is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the exploration results or mineral resources estimate in that announcement 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 materially changed from the original announcement.

Why we need the critical minerals

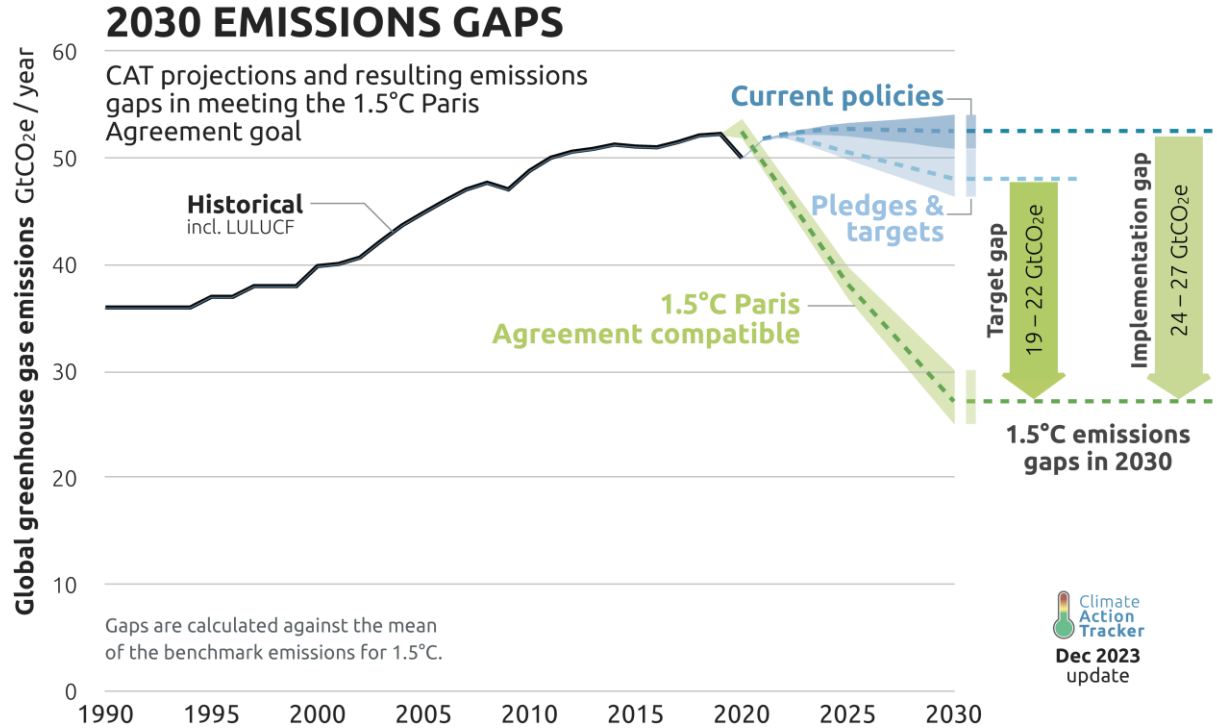
Target

NDC targets (as of December 2023) are likely below 2.7°C and have a 99.5% chance of *exceeding* 1.5°C

Policy

Current policy will lead to a warming of 2.7°C in our combined estimate in 2100 but will also continue to rise after that date.

Why we need the critical minerals



Source: Global temperature warming by Climate Action Tracker Dec 2023

Global Population is growing

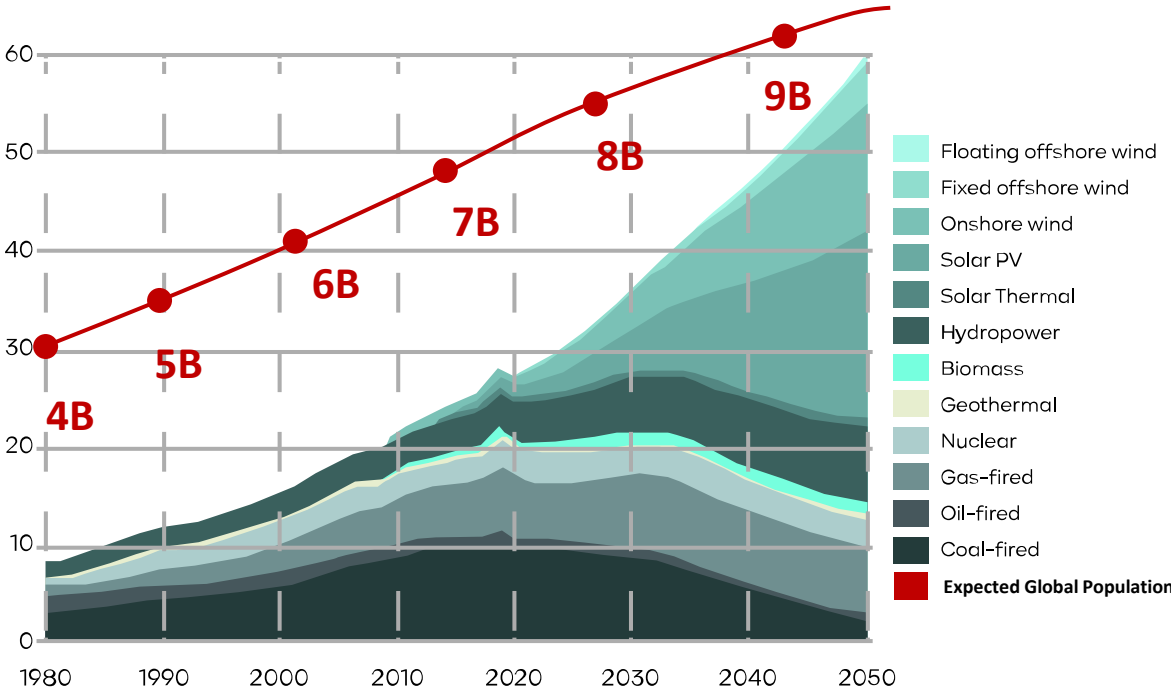


Figure 5 World Electricity generation by power station type PWh/yr

Renewable intermittent unstable energy that needs Battery storage to stabilise

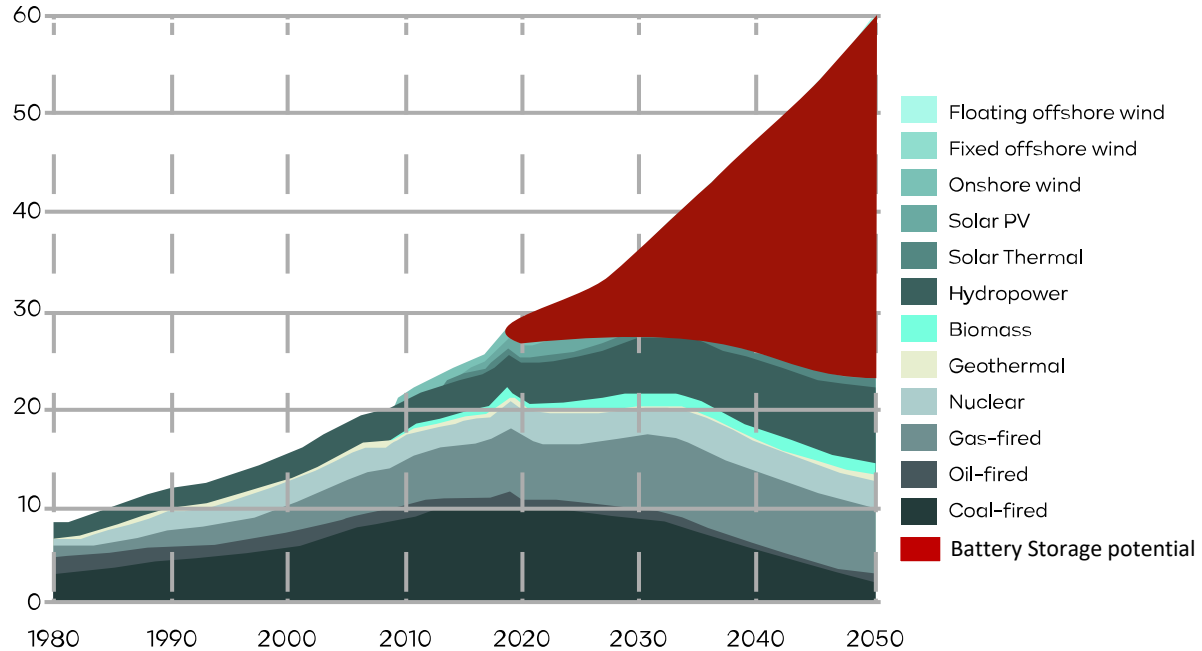


Figure 5 World Electricity generation
by power station type PWh/yr

Types of energy storage and their advantages/limitations

**Pumped
Hydroelectric**

Flywheels

Battery

Compressed Air

Thermal Energy

Hydrogen

ADVANTAGES/LIMITATIONS

- Location
- Local infrastructure
- Climate (extreme heat or cold)
- Duration (seconds vs hours, instantaneous vs long delays)
- Cost
- Capacity
- Safety
- Resources required to construct and maintain (mining, supply chain, etc)
- Lifecycle/recyclability

Battery Technologies

Proven at Grid scale

Lithium Batteries (3-4 hours)

Various chemistries

Vanadium Redox Flow Batteries
(12+ hours)

Under development/trial

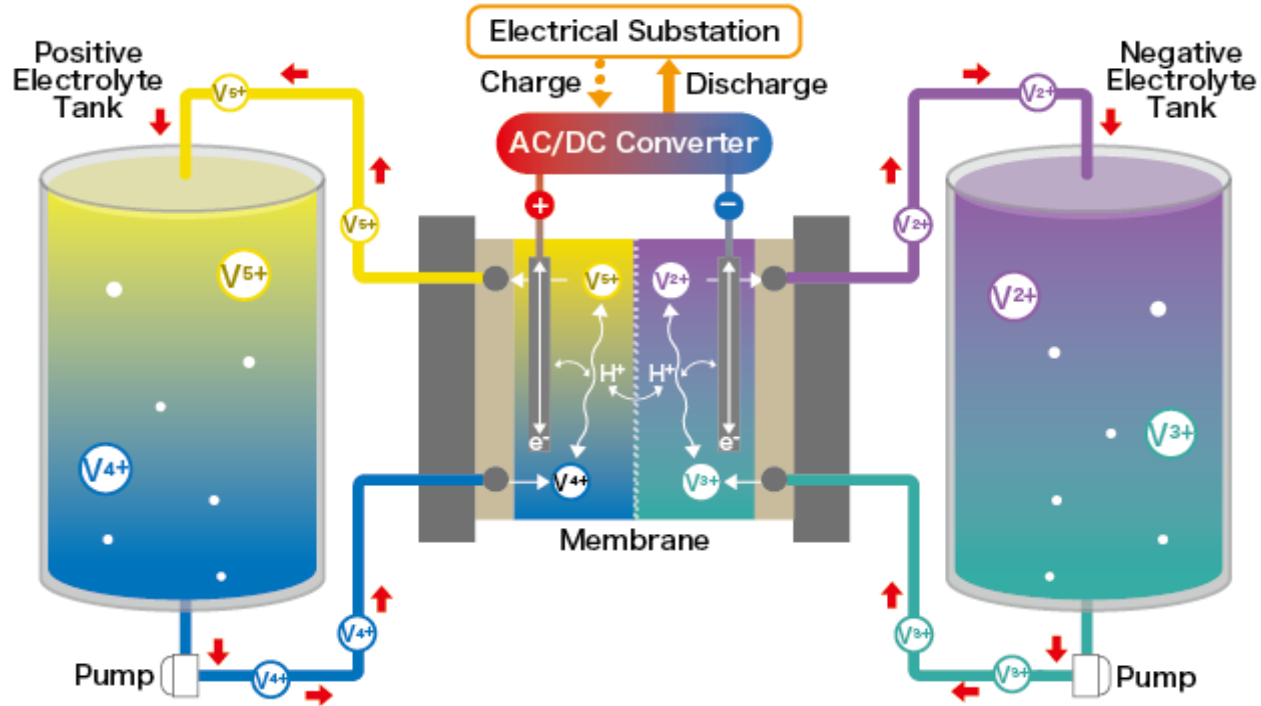
Iron flow batteries

Zinc air batteries

Other zinc-based batteries

Sodium batteries + others

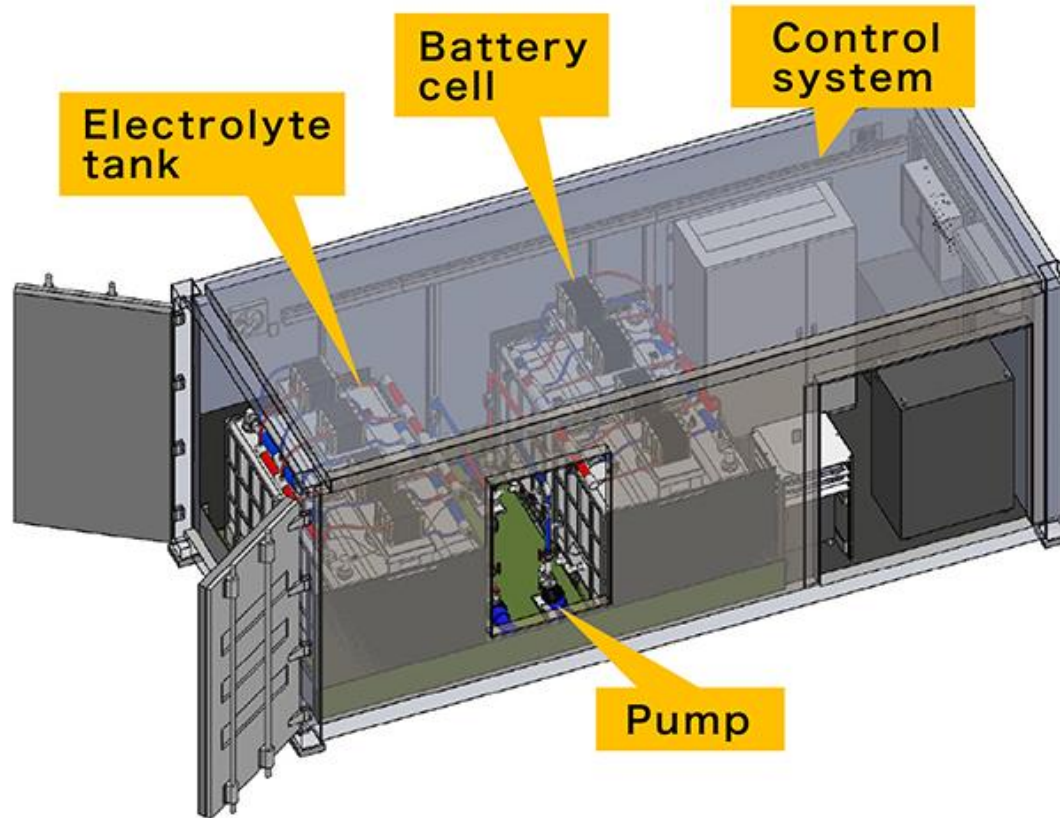
Vanadium Batteries (VRFBs)



Structure of Vanadium redox flow battery

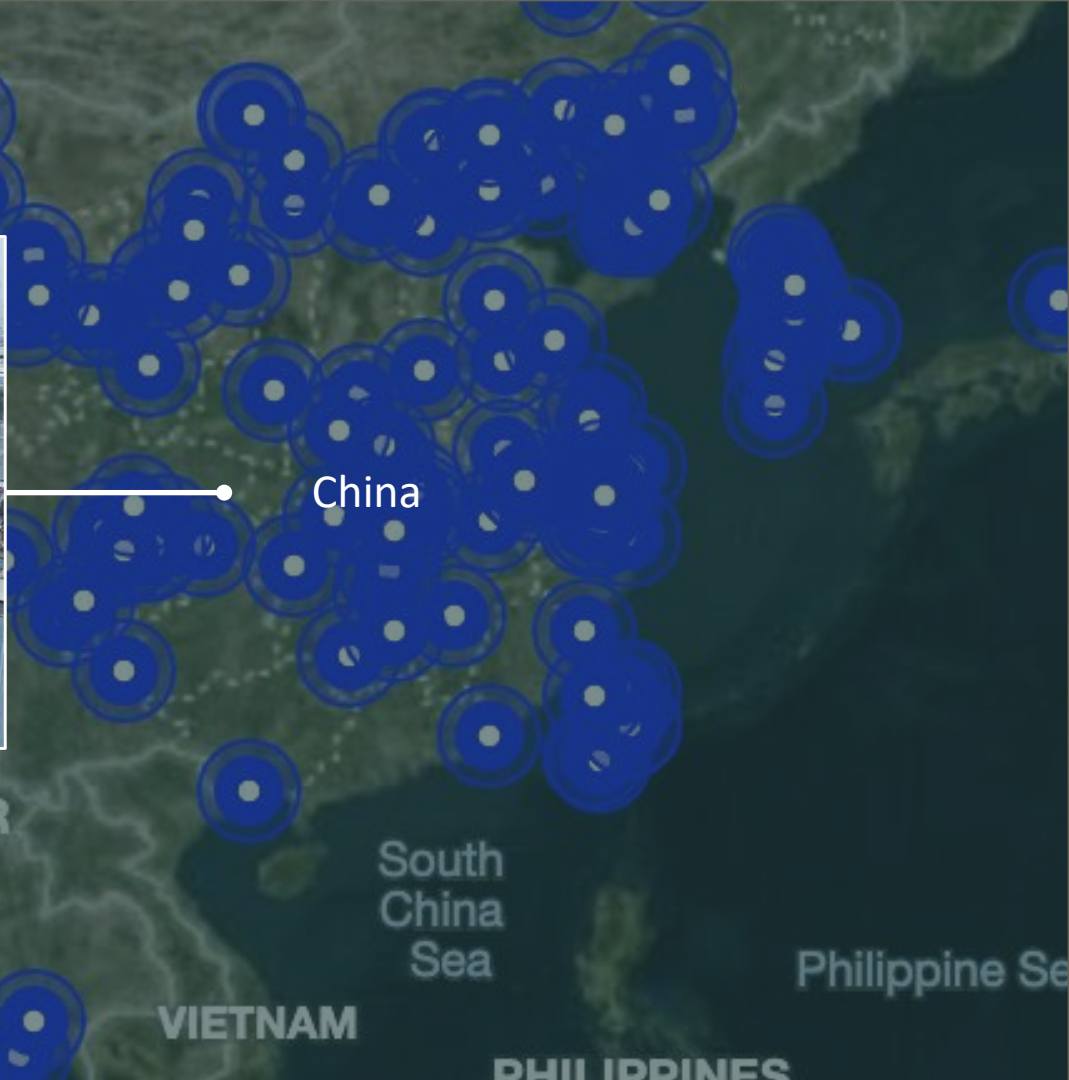
※The figure shows the flow during charging process.

Vanadium Batteries (VRFBs)



Current actual, under construction and announced VRFB installations





China

MYANMAR

South
China
Sea

Philippine Sea

VIETNAM

PHILIPPINES

ANGOLA
ZAMBIA
ZIMBABWE
NAMIBIA
MADAGASCAR
SOUTH AFRICA

Indian Ocean





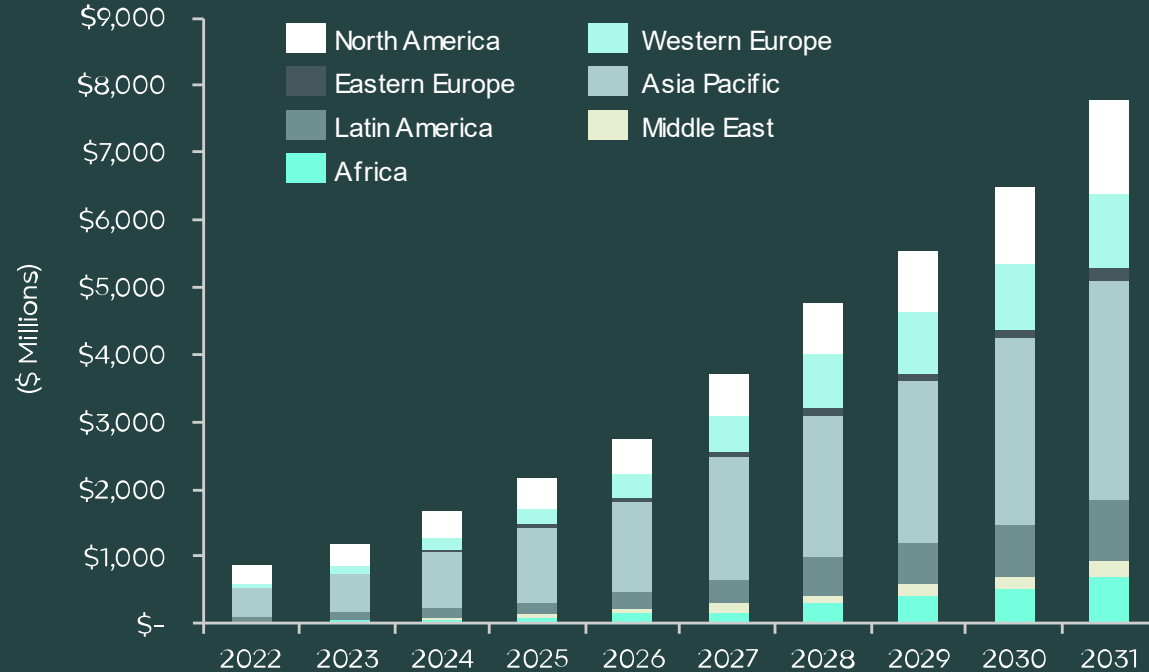
Australia



Tasman Sea

NEW ZEALAND

Annual Installed VRFB Utility-Scale and Commercial and Industrial Deployment Revenue by Region



(Source: Guidehouse Insights)

Vanadium Batteries – Proven technology powering cities

Why are they favoured?

Safe and non-flammable

Vanadium electrolyte is 100% recyclable and reusable

30 year plus lifespan with complete discharge and minimal deterioration

Scale-able with unlimited capacity

Medium to long term storage 3-10 hours with rapid response (milliseconds)

Embodied carbon in life cycle



62MWh

Vanadium
Battery

8,600

West End
Homes

**~250,000
tonnes**
Vanadium
pentoxide ore

620 tonnes
 V_2O_5

**~6,800
tonnes**
electrolyte

Brisbane



ESG Vision



Aiming to meet the growing demand for minerals to achieve a **Carbon Neutral Future.**



Global Vanadium Reserves

Est. Global Vanadium Metal
Reserves

63m
tons

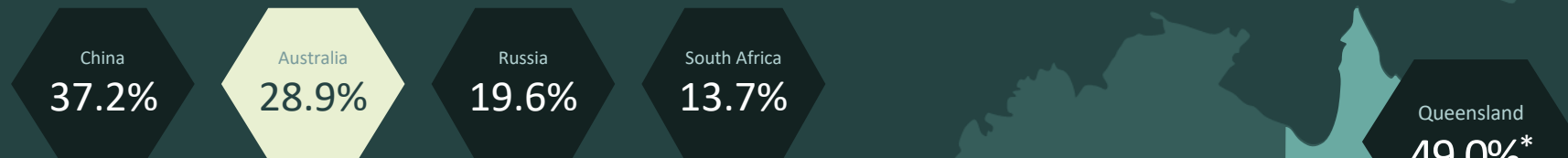
Russia
19.6%

China
37.2%

South Africa
13.7%


Australia
28.9%

Local Vanadium Deposits



- With 28.9% of total global Vanadium contained in Australia, Queensland holds 49.0%* of the total Australian deposit
- Queensland has a vast and economic source of vanadium and a new secure, safe and accessible supply chains to provide vanadium electrolyte for vanadium batteries.

Potential producers in Australia – Collaboration



Western Australia

Australian Vanadium Limited
Tivan Limited
Neometals
Flinders Mines Limited

Queensland

Critical Minerals Group Ltd
Vecco Group
Multicom Resources
QEM Limited
Richmond Vanadium Technology
Velox Energy Materials

The need to Innovate – Social Licence/Infrastructure

Social license

McKinlay Shire Council – large land area, small population. Essentially agriculture and seasonal tourism to date

Unique outback character and charm; Important to engage and partner with our community

Lot of potential development coming; collaboration will be key

Indigenous engagement

No active Native Title claims currently intersecting the project, still intend to engage

Coexistence

How do we go beyond simply “making good”

Achieve coexistence of our land uses *and* coexistence of our respective growth

Water

Water security is key

Identify potential free flowing bores first, work with landholders on best options for us all.

Rome wasn't built in a day

The problems we face are not new

A local example is the Bowen Basin; how do we get there faster but still sustainably with minimal negative impact?

New critical minerals, such as vanadium in Julia Creek and Richmond, have the power to achieve similar great things, if actively supported with similar public and private investment

The need to Innovate – Financing and Partnerships

Numerous government grants which are great for support but don't get a mine/plant built.

Many of the critical minerals are not large scale, large production options

Supply chain relationships – in and out

Offtake partnerships and downstream value-adding

How do we finance the critical minerals development?

The need to Innovate – R&D

Number of new mines needed and associated new emission sources

Need to continue to improve technologies used in mining/processing to reduce emissions

Are our universities and CRCs focussing on the right things?

Need to look at more partnerships between individual proponents and R&D providers – more JVs or multi-partner agreements

Not just about the mine site

- Efficiencies in power generation and delivery
- Efficiencies in water treatment, storage and recycling
- Efficiencies in the supply chain

Support the development of improved and new battery chemistries

Lindfield Vanadium Project in numbers

4 Million Tonnes

The Project has the practical and financial attributes to potentially develop a successful 4 million tonne per annum ROM vanadium mine.

\$400m Capital Cost

Estimated direct capital costs (excluding indirect costs, EPCM, owners' costs and contingency).

\$510m NPV

Assuming USD\$9.50 / lb 98.5% V₂O₅, USD\$57.5 / kg 99% MoO₃, FX of \$0.68 and Royalty Rate 2.5%).

17% IRR

Potential after-tax IRR of approximately 17%, from the vanadium pentoxide and molybdenum trioxide products streams.

Long Mine Life

With the opportunity to expand LOM with potential upside in Resource subject to further evaluation.

Additional HPA

Has also been confirmed as a potential product providing future upside for the project subject to further evaluation and modelling.

See ASX Release – “Resource Upgrade” –16 May 2023

See ASX Release – “Revised Release of Scoping Study Results” - 9 November 2023

Lindfield Vanadium Project in numbers

Vanadium and High-Purity Alumina (HPA)

Project underpinned by a large resource in a simple, flat-lying orebody that outcrops at surface.

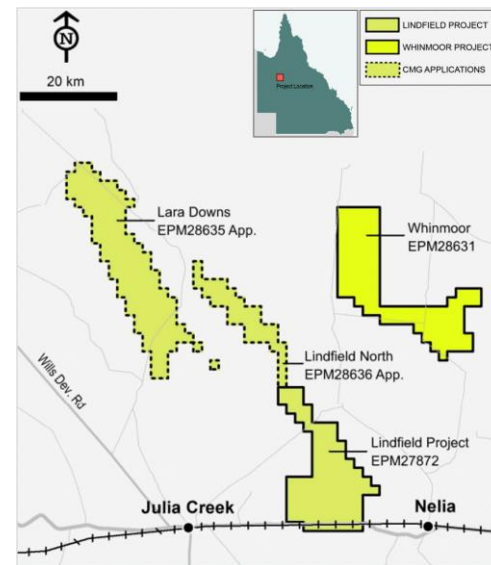
Mineral Resource Estimate (MRE) - 363 Mt @ 0.43% V_2O_5 and 4.8% Al_2O_3 . Includes 254 Mt @ 0.44% Resource and 128 Mt @ 0.48% V_2O_5 in the oxidised zone.¹

Vanadium and High Purity Alumina (HPA) Products - Aluminium Oxide (Al_2O_3) is included in the MRE, with HPA as a potential project of the mineral processing stream.

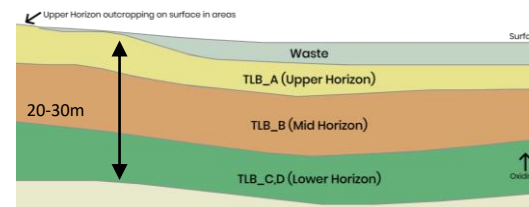
Excellent Geological Characteristics - Advantages in beneficiation allow for higher V_2O_5 concentration upgrade through flotation and leaching separation.

Straightforward and Low-Cost Mining - Vanadium and HPA are found in the oxidised zone, with low strip ratios and suiting lower cost open-cut mining operations – a significant OPEX advantage over mining hard rock orebodies.

Limited Contaminants for batteries – resulting in improved and lower cost process refinement.



Large tenement package (~295 km²) located in Queensland's North West Mineral Province



1 - Refer ASX Release – “Resource Upgrade” – 16 May 2023

Jan 2024

Jan 2025

Jan 2026

Jan 2027

Jan 2028



Feasibility studies

Design and construct

Operations

Approvals – State and Federal

Funding for Lindfield Development

Vanadium
Electrolyte
Feasibility

Funding –
Government
Grant, Other

Design and
Construct
Electrolyte
Manufacturing
Facility (EMF)

Operate
EMF

Funding
Expansion

Expansion
Electrolyte
Facility

Get in touch



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