

CORPORATE PRESENTATION

Richmond Vanadium Technology Limited (ASX:RVT) is pleased to provide the attached presentation which will be delivered at FerroAlloyNet's 17th International Vanadium Products Forum being held in China 25 – 27 March 2024. FerroAlloyNet was founded in 2003 specializing in providing information on the steel, ferroalloy, mineral and metal fields, data reports and hosts various industry conferences.

English and Chinese versions of the presentation are provided, with both versions to be available at the Forum.

This international forum brings together the world's largest players in the vanadium mining, processing, electrolyte and vanadium redox flow battery manufacturing at a time of increasing adoption of this superior energy storage technology.

This announcement has been authorised by the Board of Directors of RVT.

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Ben Creagh

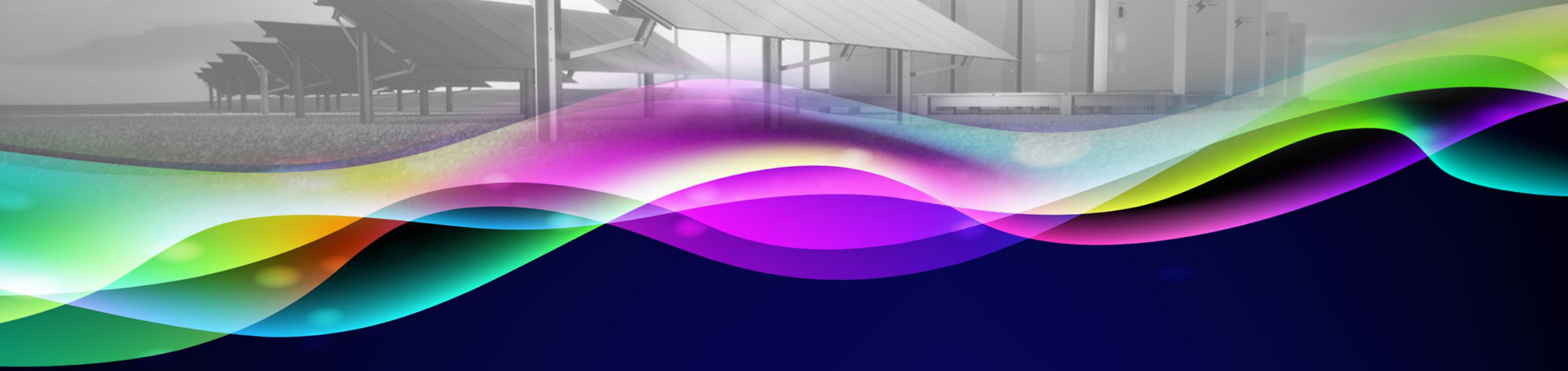
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NEW VANADIUM RESOURCE EMERGING FROM AUSTRALIA



ASX : RVT

FERRO.ALLOY.NET FORUM PRESENTATION



MARCH 2024

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IMPORTANT NOTICE AND DISCLAIMER

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COMPETENT PERSON STATEMENT

Where the Company refers to the results of the Prefeasibility study, the Mineral Resource Estimate and the Ore Reserve Estimate as outlined in this presentation and as disclosed in the Independent Technical Assessment Report in the Company's Prospectus dated 14 October 2022 and Supplementary Prospectus dated 21 October 2022 and released to the ASX on 9 December 2022, it confirms that it is not aware of any new information or data that materially affects the information included in that Report and that all material assumptions, including the forecast financial information, and technical parameters continue to apply and have not materially changed.

Information on historical exploration results and Mineral Resources and Ore Reserves presented in this presentation, together with JORC Table 1 information, is contained in the Company's Prospectus dated 14 October 2022 and Supplementary Prospectus dated 21 October 2022 and released to the ASX on 9 December 2022.



A BETTER WORLD FOR OUR CHILDREN

We are all human and want to leave a better world for our children.
Human-induced climate change is an unprecedented challenge and a global problem like no other.
If we want to **decarbonise** the world, we have to work together.

In 2020, President Xi Jinping unveiled China's commitment to peak carbon emissions by 2030 and attain carbon neutrality by 2060. China is investing more in clean energy than any other country in the world. As of June 2023, renewable energy has taken over coal to become China's largest installed power generation capacity¹.



THE BATTERY STORAGE REVOLUTION

The world cannot achieve its energy transition targets without utility scale, long duration battery storage. This has been demonstrated by growing installations of gigawatt hour battery energy storage systems.

The adoption of lithium-ion battery storage systems has dominated the market. This has been the battery system of choice because of industry acceptance and up-front capital cost.

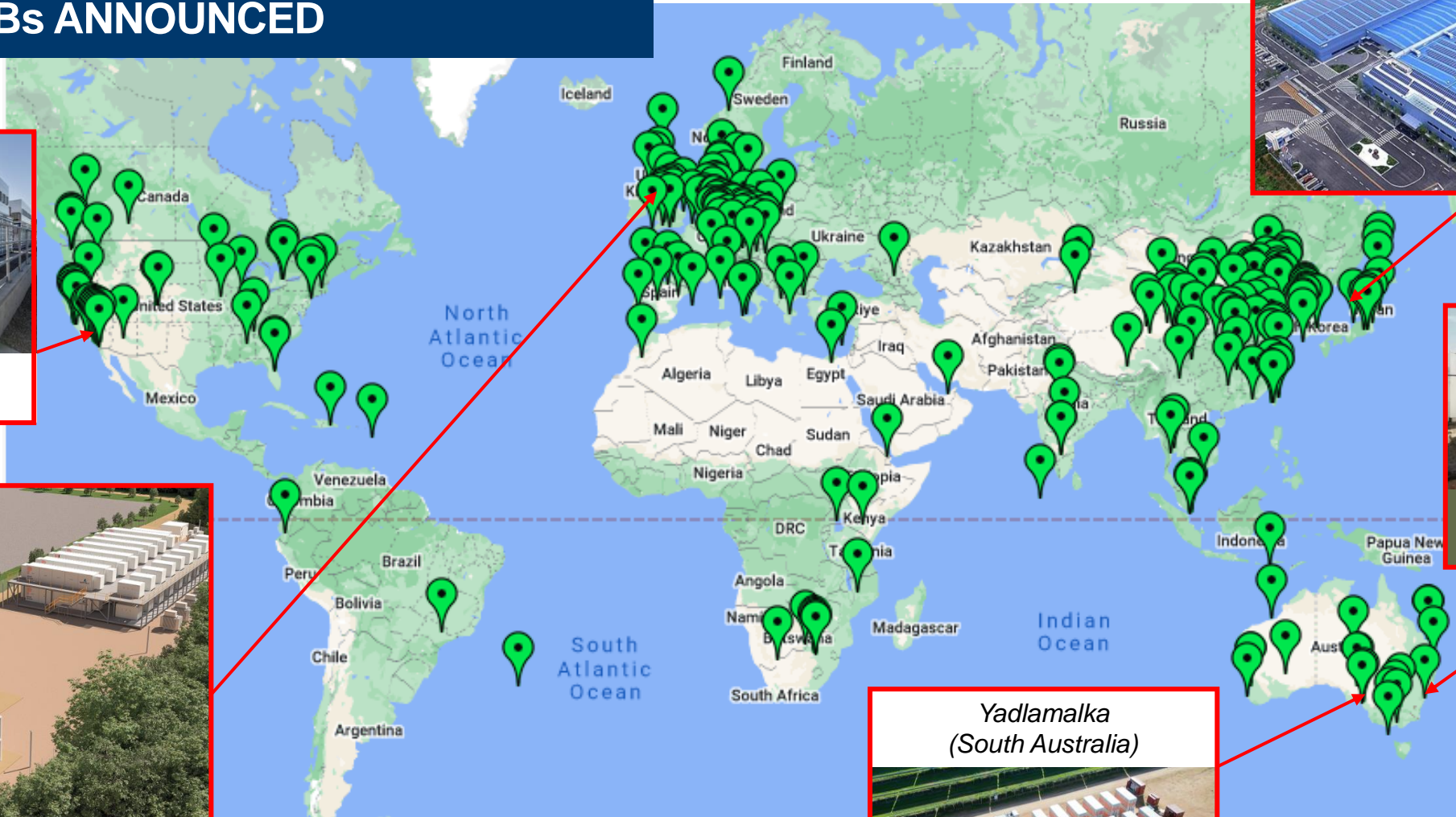
Adoption of vanadium redox flow batteries is increasing due to:

- safety concerns
- battery life
- recyclability
- capability for longer duration energy storage (+4 hours).

China is leading the way in the take-up of vanadium redox flow batteries and the rest of the world is slowly catching up.



200 VRFBs IN OPERATION
42 VRFBs UNDER CONSTRUCTION
49 VRFBs ANNOUNCED



San Diego Gas & Electric (USA)



Dalian Rongke Power (China)



North Harbour Clean Energy (NSW)



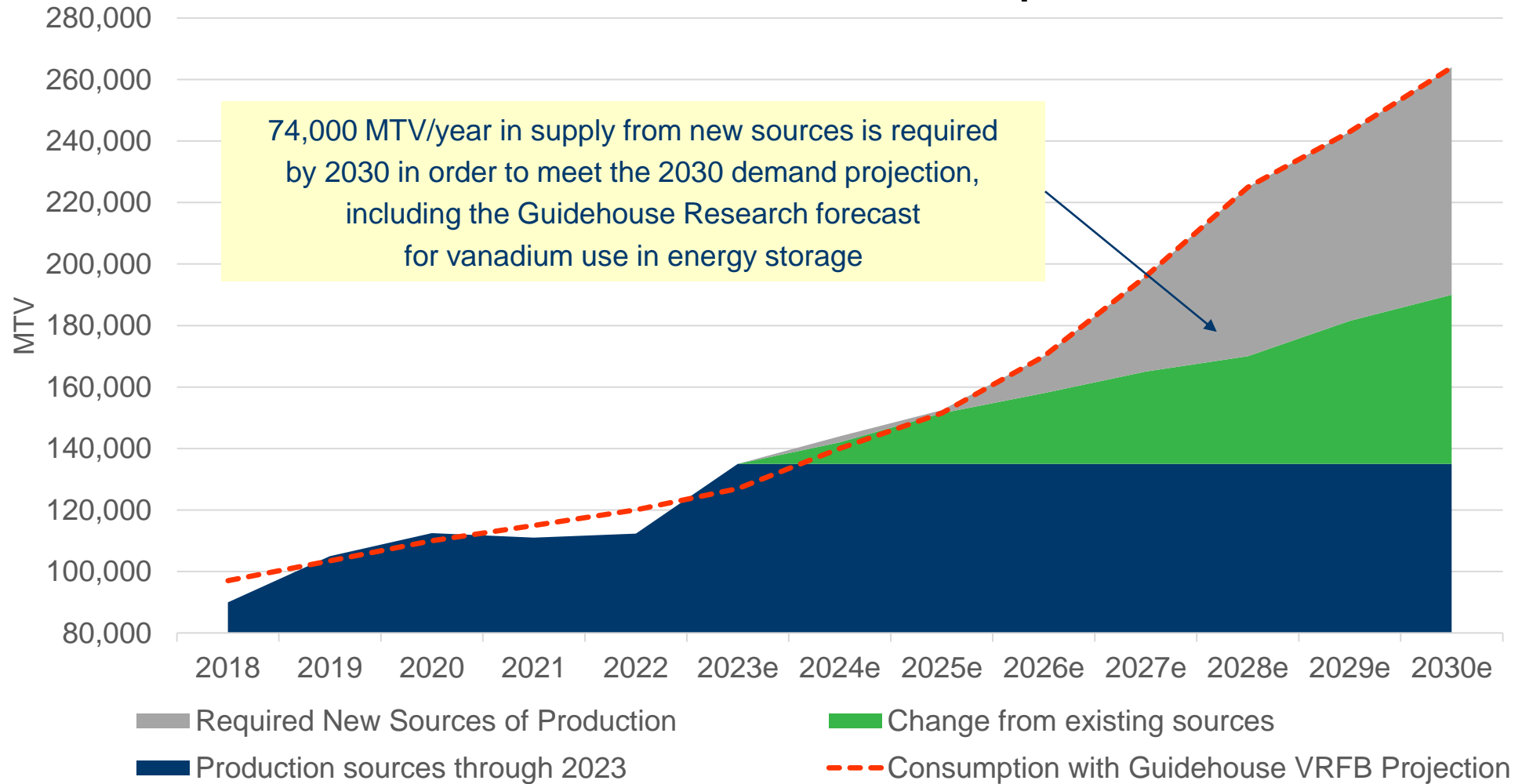
Energy Superhub Oxford (UK)



Yadlamalka (South Australia)

MEETING FUTURE VANADIUM DEMAND

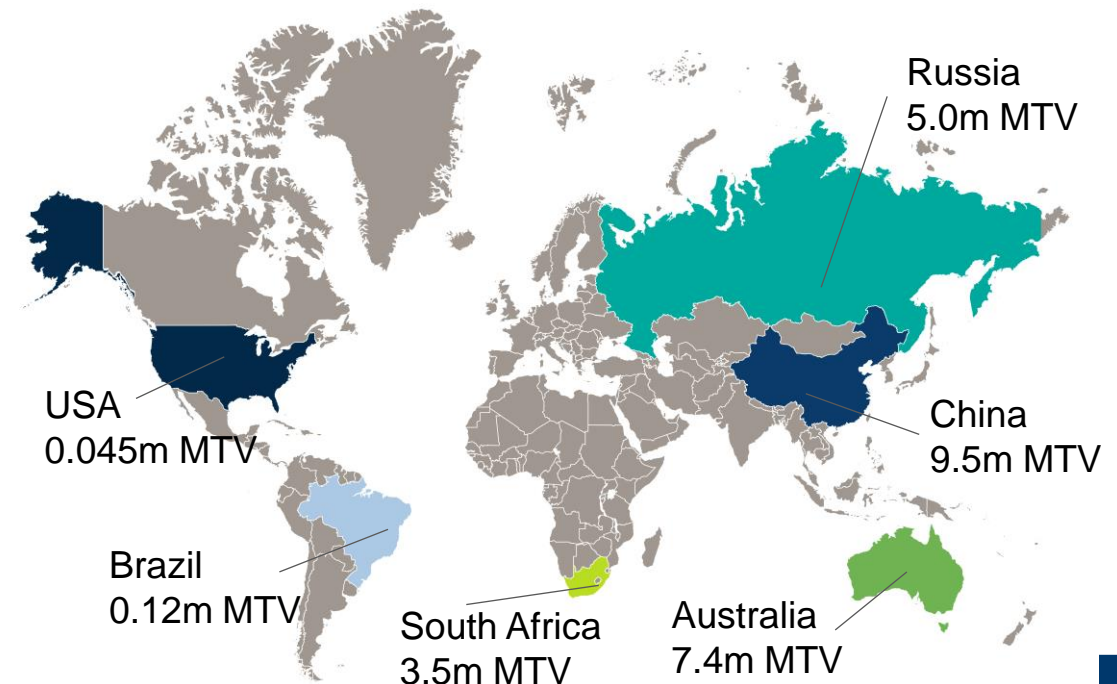
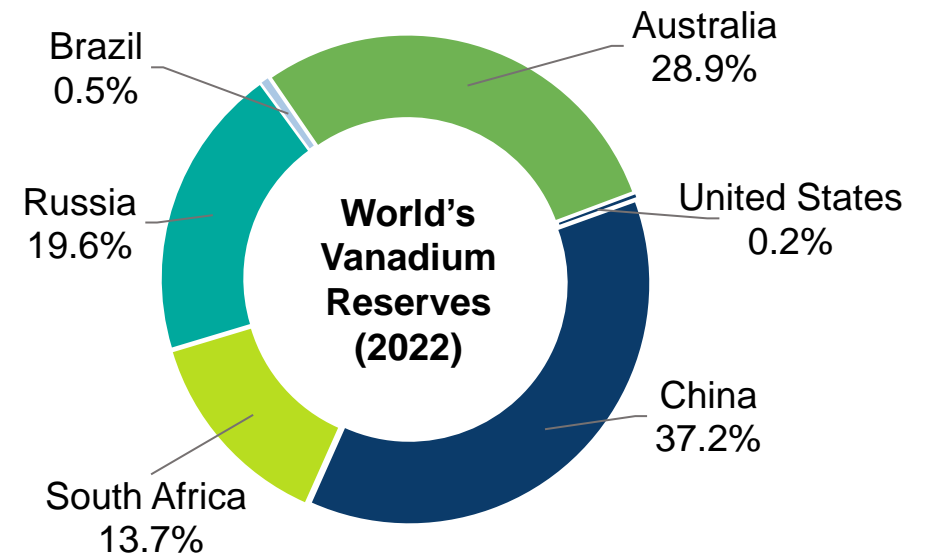
Vanadium Production and Consumption



VANADIUM SUPPLY¹

- Current production ~100ktpa – 90% from 4 countries
 - China, Russia, South Africa and Brazil
- Production from secondary sources
 - steel slag, stone coal, fly ash
- Production from primary sources
 - titanomagnetite ore
- Current global resources – 63Mt
- Current global reserves – 26Mt
- Australia has second highest vanadium reserves but produces no vanadium

¹ Refer "Mineral Commodity Summaries 2023", US Geological Survey, 31 January 2023



AUSTRALIAN GOVERNMENT SUPPORT FOR CRITICAL MINERALS

Prime Minister of Australia – Hon. Anthony Albanese MP¹

We want to move Australia up the international value chain in critical minerals, energy and manufacturing. And I'm pleased to announce today a doubling of our investment to A\$4 billion for the expansion of the Australian Government's Critical Minerals Facility. This will drive investment into the sector and deliver benefits, both domestically but also globally with our partners.

Federal Minister for Resources - Hon. Madeleine King MP²

Vanadium flow batteries were invented in Australia, and Australian vanadium will play a key role in the energy transition.

Vanadium production is highly concentrated internationally, and it is on Australia's Critical Minerals List.

The Australian Government supports critical minerals projects through measures including the Critical Minerals Facility and the Northern Australia Infrastructure Fund.”

Premier of Queensland - Hon. Steven Miles³

Vanadium flow batteries are set to be a key part of our energy storage mix with demand rapidly increasing around the globe.

Vanadium flow batteries are set to be manufactured out of North Queensland, under a new agreement between three major companies.

The batteries will be Queensland made and they will form part of a new vanadium supply chain, providing enormous possibilities for North Queensland.

Vanadium flow batteries provide the grid-scale storage needed so renewable energy sources, like wind and solar, can reliably power Queensland homes, businesses and industries.

The ability to store and discharge energy on an industrial scale is one of the final pieces in the puzzle for decarbonising the electricity network.

Minister for Resources and Critical Minerals Member for Townsville (Qld)

- Hon. Scott Stewart⁴

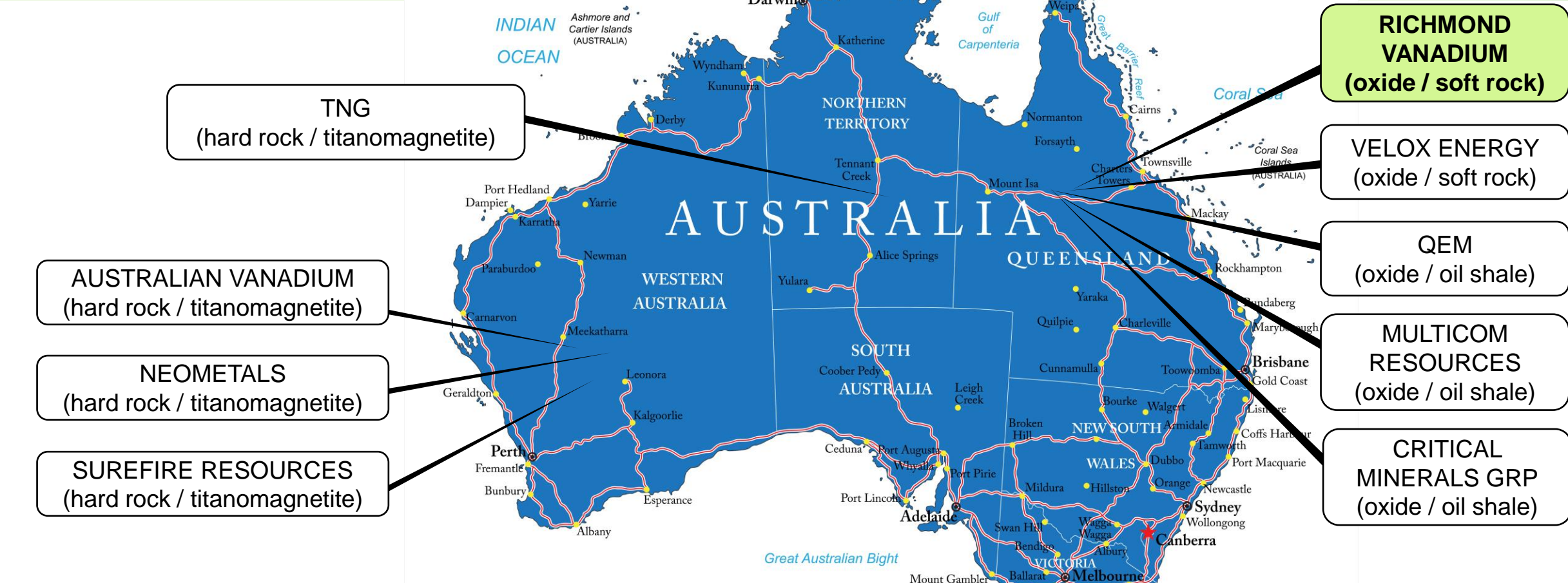
There is enormous potential for vanadium mining and production in North Queensland as demand for vanadium batteries continues to rise.

1 Refer press conference with Prime Minister Anthony Albanese MP, Washington, 25 October 2023

2 Refer Qld Govt Media Statements “Townsville supercharged for vanadium battery manufacturing”, 21 February 2024

3 Refer “Vanadium electrolyte manufacturing facility opens in WA”, Energy Source & Distribution News, 18 January 2024

4 Refer Qld Govt Media Statements “Copperstring budget boost to unlock vanadium industry”, 22 June 2023



AUSTRALIAN VANADIUM DEPOSITS

Australia has second highest vanadium reserves but produces no vanadium



INTRODUCING THE PEOPLE WHO UNDERSTAND CHINA

The Board of Richmond Vanadium

DR SHUANG (SHAUN) REN NON-EXECUTIVE DIRECTOR

Born in Henan Province, Shuang completed his PhD in Economic Geology at the Australian National University and has over 35 years industrial experience in exploration, project assessment and feasibility studies.

He has worked for a list of international mining companies including Rio Tinto, BHP and AngloGold-Ashanti in senior technical and management positions. Since 2016, Shuang has focussed on the Richmond Vanadium Project leading the team to successfully complete the Pre-Feasibility Study.

He is a member of the Australian Institute of Mining & Metallurgy.

MR BRENDON GRYLLES INDEPENDENT NON-EXECUTIVE CHAIR

Brendon brings extensive relationships and networks at all levels of business and government. He spent 16 years as a senior cabinet minister and state Member of the Western Australian Parliament, visiting China on behalf of the Premier of Western Australia in his capacity as the Minister for Regional Development.

His Grylls Group business has grown to include strategic consulting work within the iron ore and gold industry, civil contracting, agriculture, First Nations partnership, aviation and innovative research into carbon abatement and developing new carbon offset projects.

MR JON PRICE MANAGING DIRECTOR

Jon holds an Environmental Science Degree from Griffith University in Brisbane, postgraduate qualifications in Extractive Metallurgy and a Masters in Mineral Economics from the WA School of Mines.

With 30 years' experience in precious and critical minerals exploration, development, construction, operations and corporate, Jon has held senior management and executive positions with small and multi-national companies including Goldfields Ltd, Phoenix Gold and Horizon Minerals.

He is a member of the AusIMM and AICD and served 6 years as Board member and Chair of the Goldfields-Esperance Development Commission promoting regional economic growth.

MRS LILY ZHAO TECHNICAL DIRECTOR & CHIEF PROJECT ENGINEER

Born in Beijing, Lily has more than 20 years experience in project management and engineering.

She has a rich knowledge of electrical, mechanical and control system design, programming, commissioning and operational support. Lily holds a bachelor's degree in Engineering and is highly experienced in project team leadership, tender evaluation and negotiation, strategic planning and cost control, and was instrumental in overseeing the development of RVT's patent pending process flowsheet.

She is currently studying for an MBA through the University of Western Australia.



CORPORATE SNAPSHOT

CAPITAL STRUCTURE

RVT

ASX Code

\$15.6m

Cash
(as at 31/12/2023)

\$76.53m

Market Cap
(as at 12/03/2024)

221.8m

Shares
on Issue

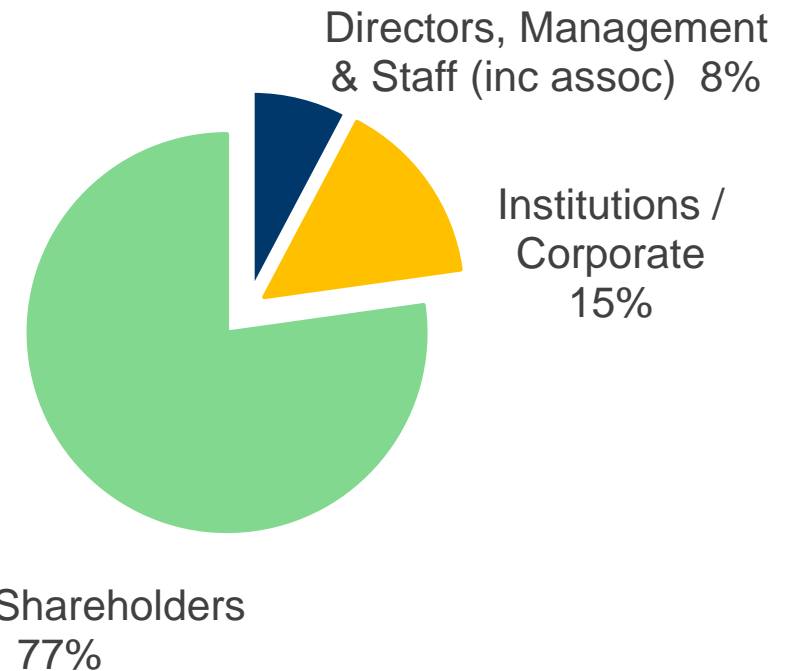
13.5m

Options
on Issue¹

3.3m

Performance
Rights²

KEY SHAREHOLDERS

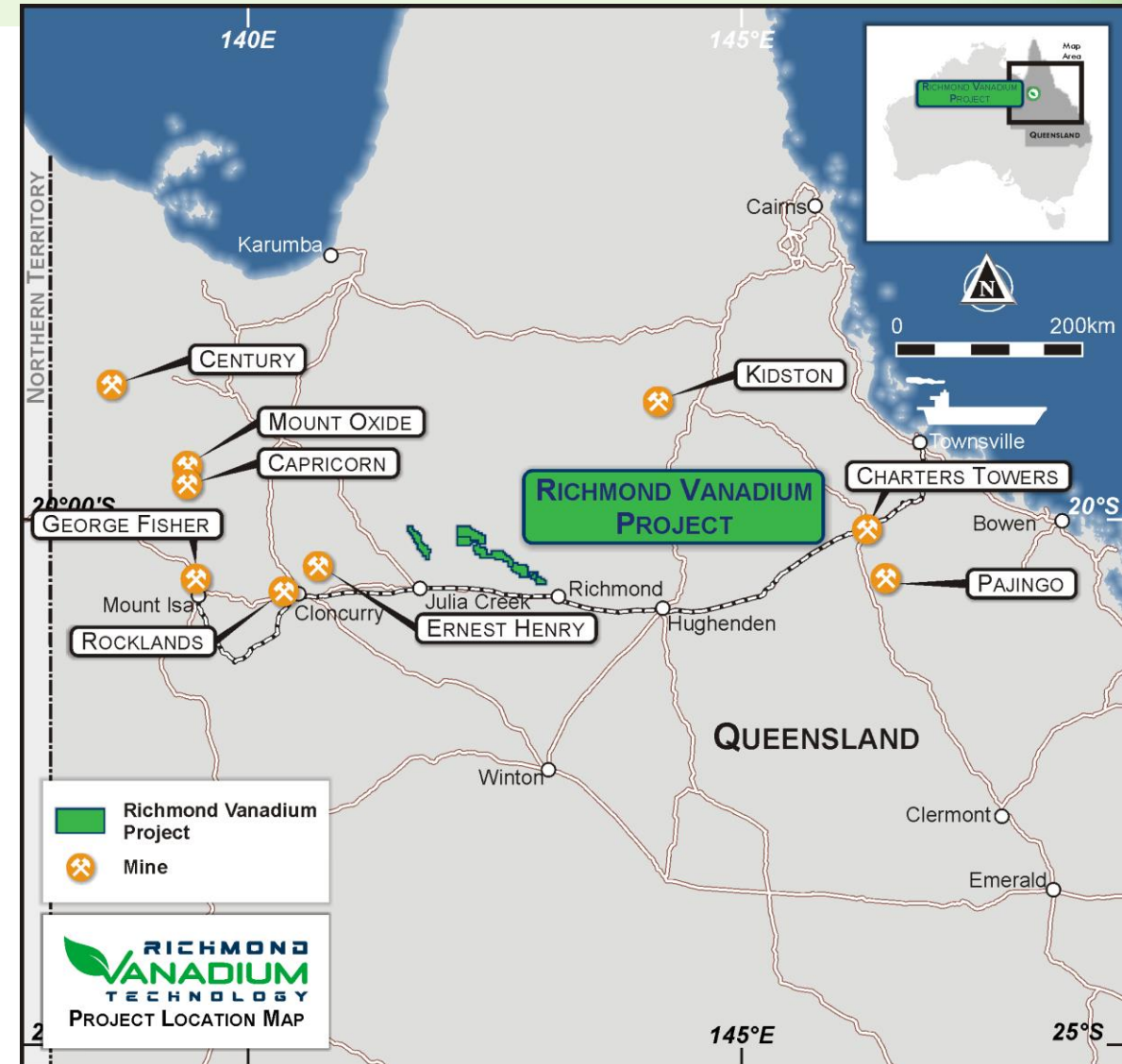


¹ Includes 6.5m director options and 6.65m Lead Manager options, all of which are escrowed for 2 years to 13 December 2024

² Includes 1.8m director performance rights which are escrowed for 2 years to 13 December 2024

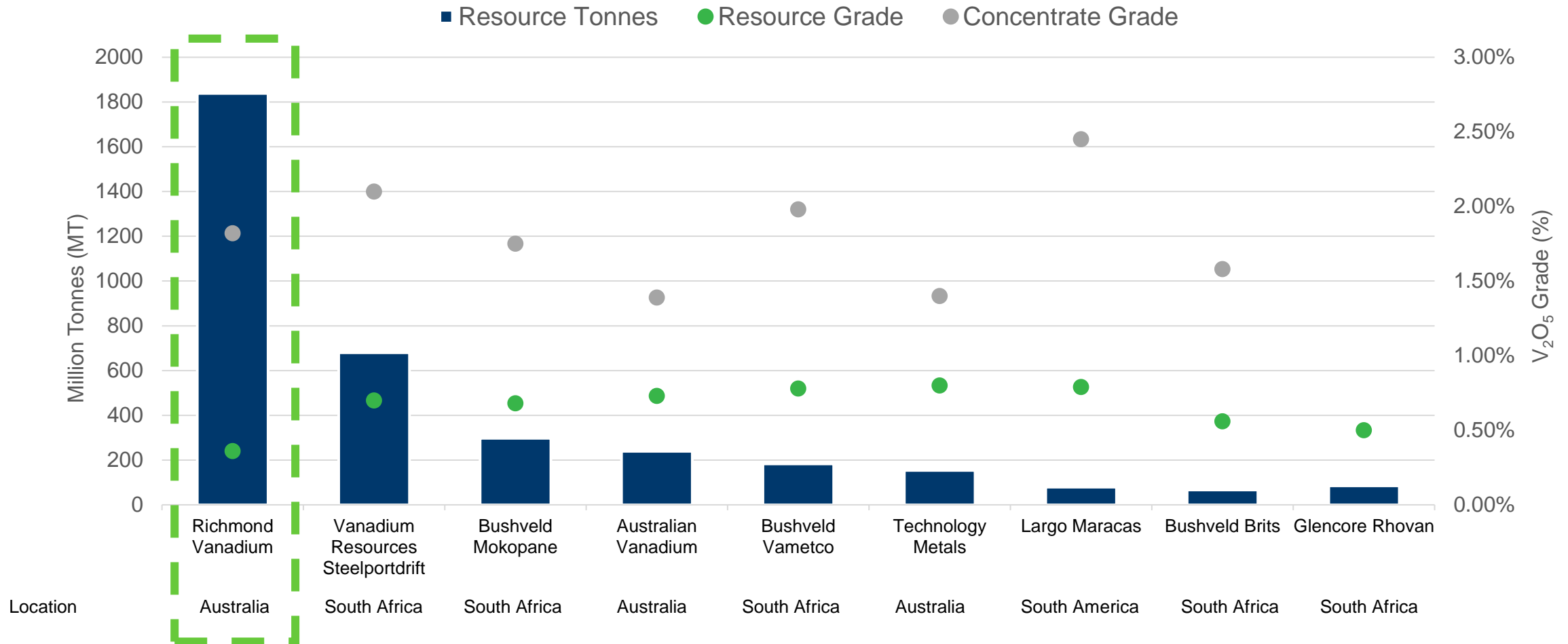
RICHMOND VANADIUM PROJECT OVERVIEW¹

- Mining friendly jurisdiction within the North-West Minerals Province of Queensland (Australia)
- Close to major infrastructure and services
- Pre-Feasibility Study completed in 2019, updated in 2021
- Bankable Feasibility Study underway for completion in June Quarter 2025
- Environmental approvals work underway
- Targeting development decision in September Quarter 2025



¹ Refer Prospectus dated 14 October 2022 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022, Appendix 2 "Summary of key PFS Outcomes" attached to this presentation, and ASX announcements entitled "Epic appointed to deliver EIS" dated 9 Mar 2023, "DRA Global appointed as engineering services consultant for Richmond Vanadium Bankable Feasibility Study", dated 21 June 2023 and "BFS Update, dated 16 January 2024

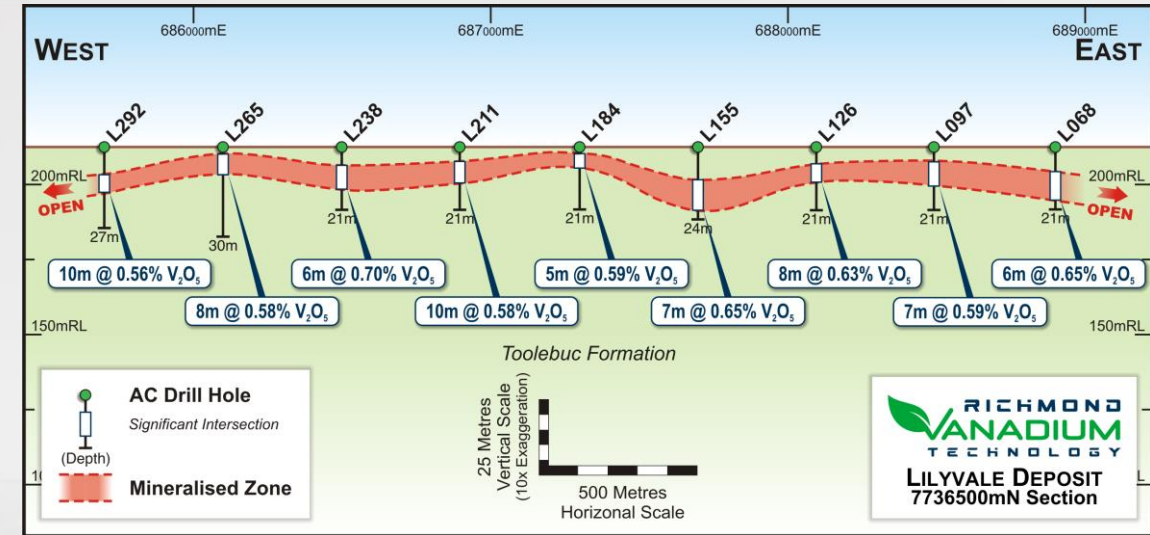
GLOBAL PRIMARY MINERAL RESOURCES



The above chart compares Mineral Resources reported under different codes and companies at different stages of development. Only Resources with a cut-off grade of $\geq 0.30\%$ and an average resource grade of $>0.35\%$ are shown. All comparative data has been sourced from public company disclosures – please refer to Appendix 3 “Peer Comparison Table” attached to this presentation.

SIMPLE GEOLOGY AND LOW-COST MINING¹

- Mineralisation associated with the Toolebuc formation at an average depth of 2 - 25m
- Average grade based on drilling to date within the starter pit is 0.52% V₂O₅ with highest intercept 0.88% V₂O₅ over 1m)
- Free dig open cut mining with very low strip ratio (0.92)
- Amenable to low-cost removal of coarse fraction to produce high grade feedstock of 1.83% V₂O₅
- Waste / tailings is non-toxic

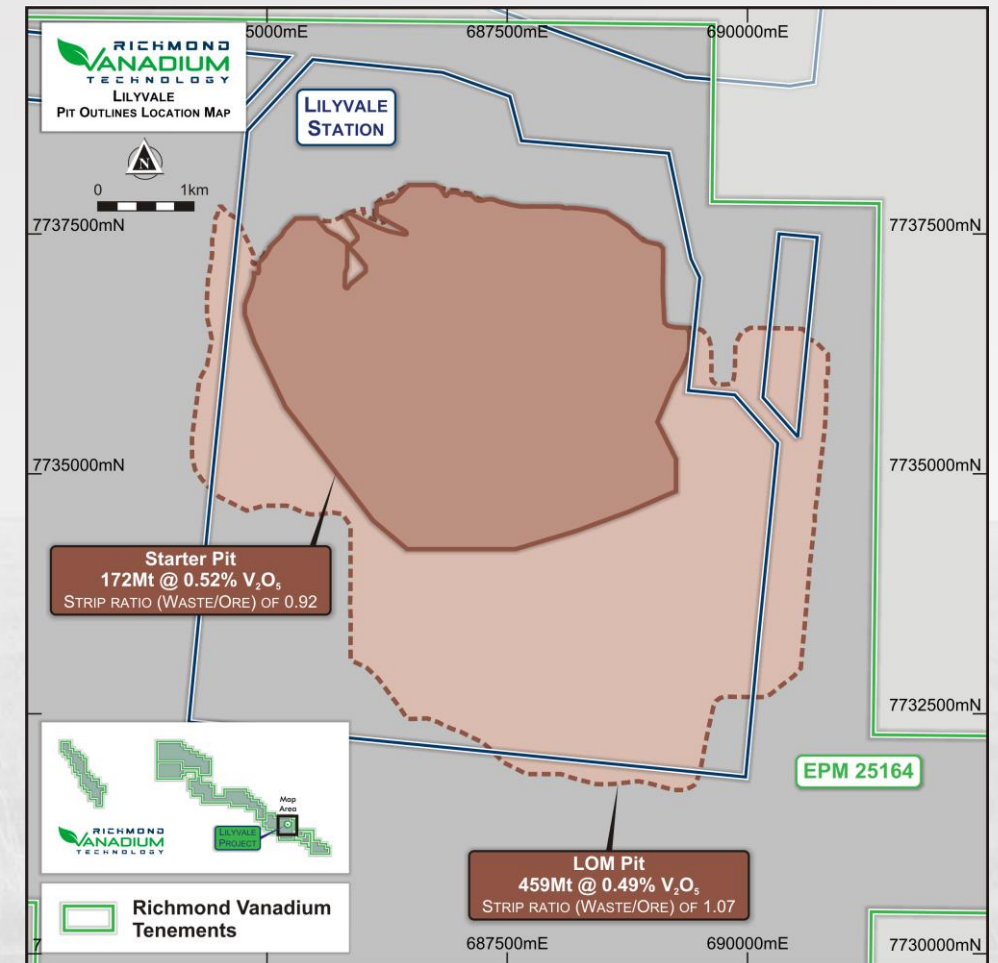


LILYVALE DEPOSIT ORE RESERVE¹

- Maiden open pit Ore Reserve at the Lilyvale Deposit of:
459.2Mt @ 0.49% for 2.25Mt V₂O₅
- Two pits designed over the Lilyvale Deposit Indicated Mineral Resource:
 - LOM (Life of Mine) pit hosting Probable Reserves; and
 - STARTER pit focussed on the higher-grade part of the LOM pit
- Both pits host Probable Reserves designed over Indicated Resources according to the 2012 JORC code.
- Over 76% of Resource has been upgraded to the Indicated Category
- Preliminary starter pit designed to achieve a lower strip ratio (0.92) and higher ore grade (0.52% V₂O₅) in early pit development periods.

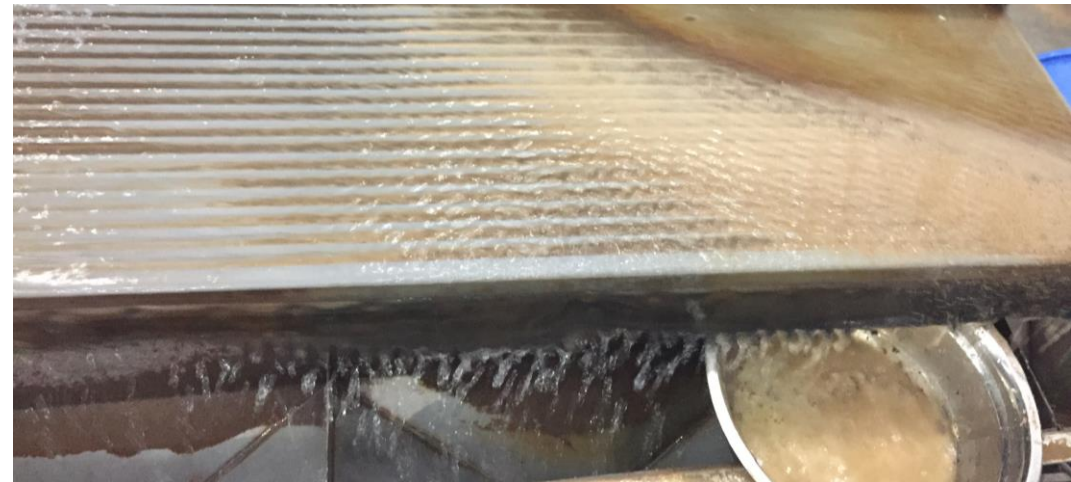
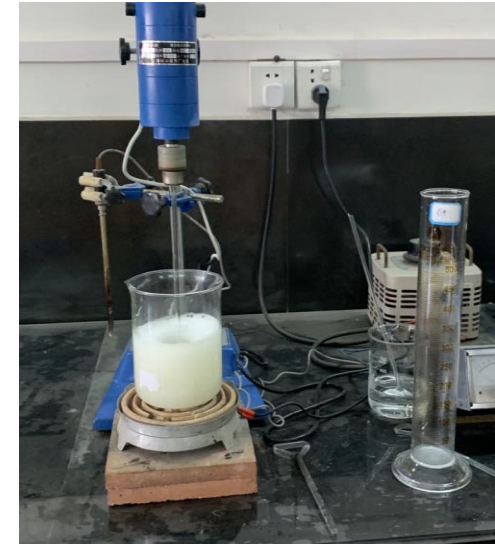
Ore Reserve – Lilyvale Deposit at a cut-off grade 0.30%

Pit	Total Rock (Mt)	Probable Ore (Mt)	Strip Ratio (W/O)	Average V ₂ O ₅ grade for Probable Ore (%)
LOM	951.7	459.2	1.07	0.49
Starter	331.7	172.5	0.92	0.52



EXTENSIVE METALLURGICAL TESTWORK ¹

- Key to unlocking the great potential is finding the right metallurgical solution to economically extract the vanadium from the ore.
- 5 years of metallurgical testwork conducted using expertise at Changsha Research Institute of Mining & Metallurgy, Hunan Nonferrous Metal Research Institute and Beijing General Research Institute of Mining & Metallurgy.
- All testwork used established conventional techniques to minimise technical risk.
- Two-step process determined:
 - in the first stage the ore will be upgraded from a mined grade of 0.49% to a shipping grade of 1.82% V_2O_5 concentrate
 - the second stage involves extraction via refining to produce 98% V_2O_5 flake for use in both the steel and energy storage markets
- The concentrate produced had a greatly reduced calcium content enabling a number of downstream processing options to be pursued.
- Testwork enabled flowsheet design to be completed during Pre-Feasibility Study.



COMPARISON OF ESTIMATED PRODUCTION COST BREAKDOWN

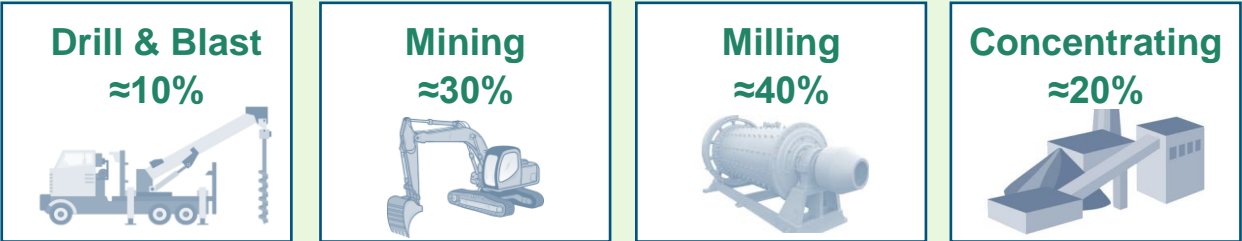
Soft Oxide vs Titanomagnetite Vanadium Deposits

Concentrating

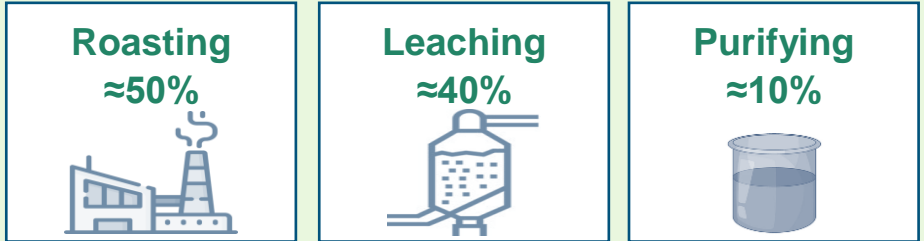
Recovery

to minimum 98% to meet vanadium flake standard

TITANOMAGNETITE VANADIUM DEPOSIT



**1.4 – 1.48%
vanadium concentrate**

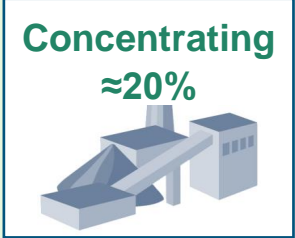


SOFT OXIDE VANADIUM DEPOSIT

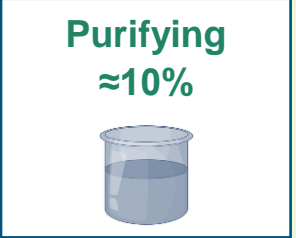
No
Drill & Blast



No
Milling



No
Roasting

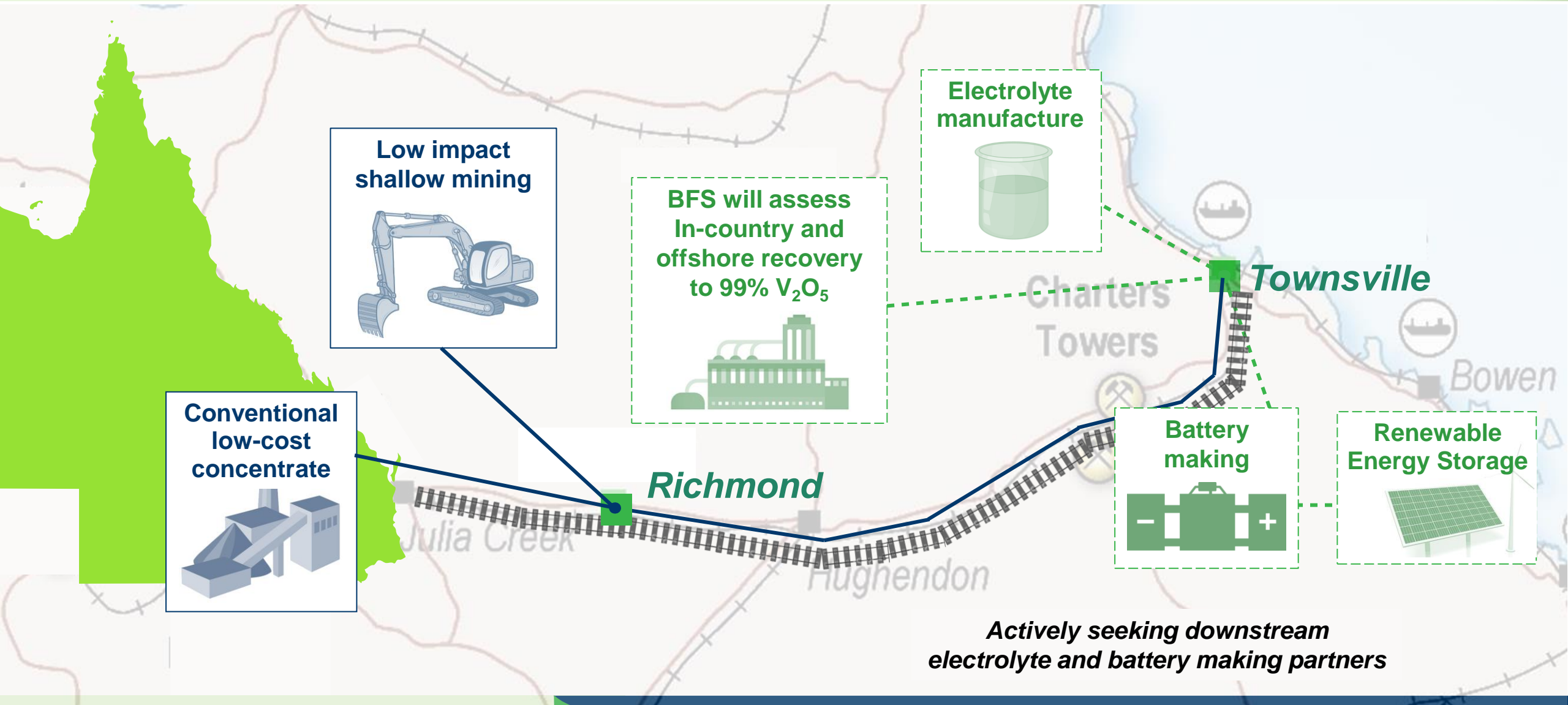


**1.83%
vanadium concentrate¹**

**+98.6%
vanadium flake¹**

¹ Refer Prospectus dated 14 October 2022 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022

MINE TO METAL TO BATTERY



Actively seeking downstream electrolyte and battery making partners

ENVIRONMENTAL - SOCIAL - GOVERNANCE

Environmental

- Environmental Impact Statement underway – final terms issued by state government March 2023¹
- Preliminary Environmental Assessment indicated no major environmental constraints to preclude project from proceeding²

Social

- We serve as a catalyst for local economic development through transparent and respectful engagement with our local communities
- Use of local businesses - civil, accommodation, services and meals

Governance

- We value accountability, transparency, fairness and responsibility for the best interests of all stakeholders
- First critical minerals project in Queensland to be declared a Coordinated Project



**ADOPTED GLOBALLY RECOGNISED WORLD ECONOMIC FORUM (WEF)
ESG FRAMEWORK – QUARTERLY REPORTING UNDERWAY**

¹ Refer ASX announcement “Terms Of Reference For Environmental Impact Statement Released”, 11 April 2023

² Refer RVT Prospectus dated 14 October 2022 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022

INVESTMENT ADVANTAGE



Location

Mining-friendly jurisdiction of Australia, close trading partner with China

Project located close to existing infrastructure including major highway and railway linked to Townsville Port



Potential

One of the largest undeveloped oxide vanadium resources in the world, capable of supporting a vanadium operation for +100 years at current throughput rates¹

Vanadium consumption for VRFBs is forecast to grow at an average 20.7% a year from 2020 - 2029²



Feasibility & Environmental Approvals underway

Pre-Feasibility Study completed in 2021 - at US\$9.60/lb V₂O₅, project generates NPV10 of A\$613M with IRR of 38% and payback of 3.2 years¹

Bankable Feasibility Study and Environmental Impact Statement underway



Timing

Regulatory approvals and final investment decision expected in September Quarter 2025³

Current vanadium market dynamics are expected to grow significantly from 2026 onwards driven by the global adoption of flow batteries for long duration energy storage

¹ Refer RVT Prospectus dated 14 October 2022 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022

² Outlook for selected critical minerals in Australia 2021 Report, Dept of Industry, Science, Energy & Resources, Australian Government

³ Refer ASX announcement "BFS Update", 16 January 2024

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Dr Shuang (Shaun) Ren


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This presentation has been authorised for release by the
Board of Richmond Vanadium Technology Limited

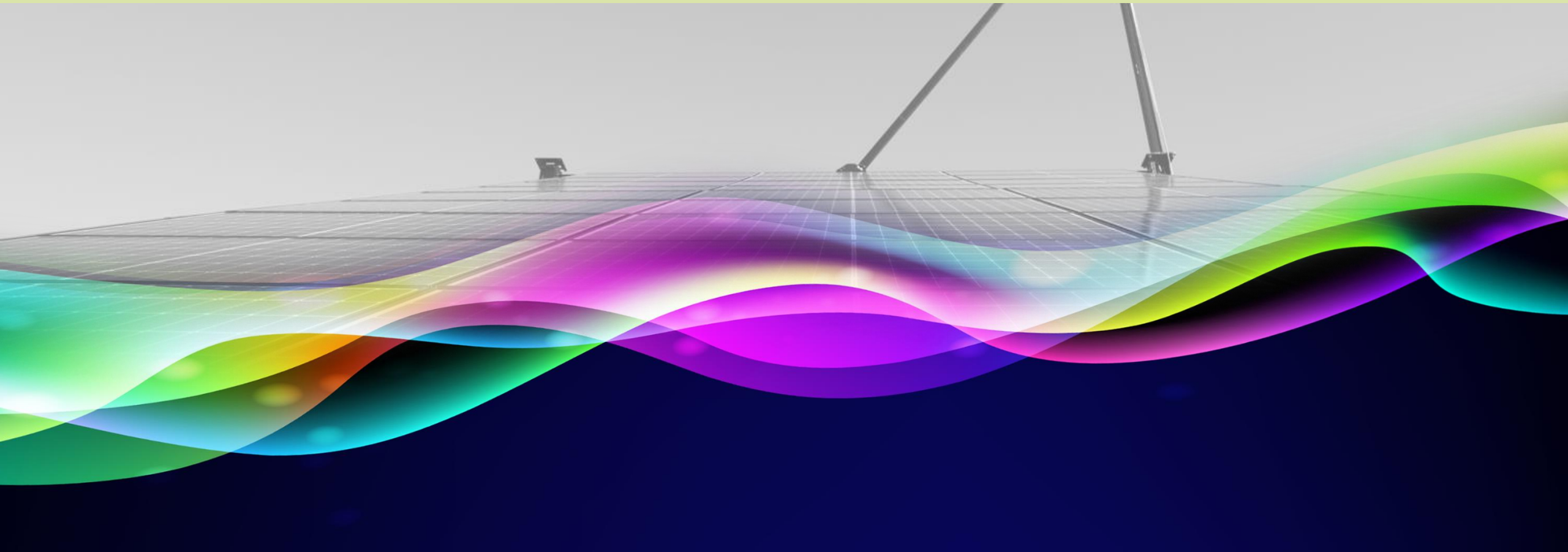
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 RICHMOND
VANADIUM
TECHNOLOGY

APPENDICES



APPENDIX 1 - MINERAL RESOURCE AND ORE RESERVE ESTIMATES¹

Richmond – Julia Creek Project Mineral Resource and Contained Metal (at 0.30% V ₂ O ₅ cut-off)				
Deposit	Category	Tonnage (MT)	V ₂ O ₅ (%)	V ₂ O ₅ (MT)
Rothbury	Inferred	1,202	0.30	3.75
Lilyvale	Indicated	430	0.50	2.15
Lilyvale	Inferred	130	0.41	0.53
Manfred	Inferred	76	0.35	0.26
Totals and Averages		1,838	0.36	6.65

Note:

Reported in accordance with JORC Code (2012) at cut-off grade 0.3% V₂O₅

Metal content calculated using grades with 3 decimal places

Metal content varies from Mineral Resources Update by HGS (ASX:HRZ “Intermin announces world –class Vanadium Resource”, dated 20 March 2018), due to arithmetic errors. The table above reflects the correct results for Manfred.

Metal content of molybdenum and nickel can be found in Table 5-1 of the ITAR (Refer Prospectus dated 14 October 2022 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022)

Richmond – Julia Creek Project Ore Reserve (Lilyvale Deposit)			
Category	Tonnage (MT)	V ₂ O ₅ (%)	V ₂ O ₅ (MT)
Proved	0.00	0.00	0.00
Probable	459.2	0.49	2.25
Total	459.2	0.49	2.25

Note:

At cut-off grade (COG) of 0.3% V₂O₅

The Ore Reserve for the project is reported according to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, JORC

The Ore Reserve statement is based on information compiled by Dr Dawei Xu, MAusIMM

APPENDIX 2 - SUMMARY OF KEY PFS OUTCOMES¹

Measure	PFS outcome US\$9.60/lb V ₂ O ₅ (Study Price)
Life of Mine (LOM)	
Total pit volume (Mt)	951.7
Stripping ratio (waste: ore)	1.07
Mined ore (Mt)	459.2
Ore Grade V ₂ O ₅ (%)	0.49



Measure	PFS outcome US\$9.60/lb V ₂ O ₅ (Study Price)	Sensitivity Analysis		
		PFS outcome at US\$7.60/lb V ₂ O ₅	PFS outcome US\$8.60/lb V ₂ O ₅	PFS outcome US\$10.60/lb V ₂ O ₅
PFS (Initial 25-year life)	(based on concentrating in Australia, refining offshore)			
Mined ore (Mt)		101.5		
Ore Grade V ₂ O ₅ (%)		0.49		
Concentrate Produced V ₂ O ₅ (Mt)		19.75		
Concentrate Grade (%)		1.82		
Refining recovery average (%)		86.1		
V ₂ O ₅ 98% Flake Produced (kt)		317.5		
Capital costs (\$M)		A\$242.2		
Operating costs (\$/lb)		A\$8.66 (US\$6.32 ²)		
NPV @ 10% (\$m) (post-tax)	A\$613	A\$139	A\$376	A\$850
Payback (years)	3.2	8.7	4.6	2.5
IRR	38%	17%	28%	48%

All material assumptions in the sensitivity analysis continue to apply and have not materially changed. The sensitivity analysis included in the ITAR (refer Prospectus dated 14 October 2022, ITAR at Schedule 1, Figure 10-1) shows that the project is most sensitive to the product price followed by the exchange rate. A 15% change in the concentrate product price results in a 31% - 41% change in NPV.

¹ Refer Prospectus dated 14 October 2022, at section 4 and also ITAR at Schedule 1 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022

² AUD-USD FX rate (0.73)



APPENDIX 3 – PEER COMPARISON TABLE

Company	Code	Project	Stage	Resource Category	Resource Tonnes (Mt)	Resource Grade (V ₂ O ₅ %)	Total Resource (Mt @ V ₂ O ₅ %)	Concentrate Grade	Information Source and Notes																																																																																																																
Richmond Vanadium	ASX:RVT	Richmond – Julia Creek	Development	Indicated	429.4	0.50	1,838Mt @ 0.36% (Cutoff V ₂ O ₅ = 0.30%)	1.82	Refer Prospectus dated 14 October 2022 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022																																																																																																																
				Inferred	1,408.6	0.33				Vanadium Resources	ASX:VR8	Steelportdrift	Development	Measured	145.5	0.72	680Mt @ 0.70% (Cutoff V ₂ O ₅ = 0.45%)	2.10	ASX Announcement dated 17/11/2022 Investor Presentation	Indicated	327.3	0.70	Inferred	207.4	0.68	Bushveld	LSE:BMN	Mokopane	Development	Indicated	63.2	1.32	297Mt @ 0.68% (Cutoff V ₂ O ₅ = 0.30%)	1.75	Mokopane Vanadium project Pre-Feasibility Study 30/1/2016 bushveldminerals.com/wp-content/uploads/2017/08/201602040458050.pdf	Inferred	234.0	0.51	Australian Vanadium	ASX:AVL	Australian Vanadium	Development	Measured	11.3	1.14	239Mt @ 0.73% (Mixed cutoffs!)	1.40	ASX announcement dated 6/4/2022 Bankable Feasibility Study for the Australian Vanadium Project. 73.6Mt of the Indicated and 88.5Mt of the Inferred tonnes use 0.40% V ₂ O ₅ cutoff. All other tonnages (95.6Mt) are at 0.70% V ₂ O ₅ cutoff.	Indicated	82.4	0.70	Inferred	145.3	0.71	Bushveld	LSE:BMN	Vametco	Production	Indicated	140.1	0.74	183Mt @ 0.78% (Cutoff = 20% magnetite)	1.98	Vametco Inferred & Indicated Mineral Resource and Ore Reserve Update for Annual Reporting purposes, 30/3/2022 bushveldminerals.com/wp-content/uploads/2022/04/J4590-Vametco-Mineral-Resources-and-Ore-Reserves-31-December-2021-Dated-30-Mar-2022.pdf	Inferred	42.6	0.90	Technology Metals	ASX:TMT	Murchison Technology Metals	Development	Measured	12.1	1.00	154Mt @ 0.85% (Cutoff V ₂ O ₅ = 0.40%)	1.40	ASX announcement dated 23/11/2022 RIU Resurgence Conference 23 November 2022	Indicated	51.2	0.90	Inferred	90.5	0.80	Largo Resources	NASD: LGO TSX: LGO	Maracas	Production	Measured	45.95	0.83	79Mt @ 0.78% (Cutoff V ₂ O ₅ = 0.30%)	2.45	43-101 Technical Report dated 10/10/2021 s29.q4cdn.com/562286712/files/doc_downloads/technical_report/marac%C3%A1s_menc_hen_mine/TR_GE21_Largo_43101_16122021_Final-Version-Conformed-for-Filing.pdf	Indicated	17.73	0.70	Inferred	15.52	0.74	Bushveld	LSE:BMN	Brits	Exploration	Indicated	44.9	0.56	66.8Mt @ 0.56% (Cutoff = 20% magnetite)	1.58	Competent Persons Report on the Brits Vanadium Project North West 30/1/2020 bushveldminerals.com/wp-content/uploads/2020/01/Independent-CPR_Brits-Vanadium_January_2020_Final.pdf	Inferred	22.0	0.55	Glencore	LSE: GLEN JSE: GLN	Rhovan	Production	Measured	51.7	0.47	176Mt @ 0.49% (Cutoff = 15% magnetite)	
Vanadium Resources	ASX:VR8	Steelportdrift	Development	Measured	145.5	0.72	680Mt @ 0.70% (Cutoff V ₂ O ₅ = 0.45%)	2.10	ASX Announcement dated 17/11/2022 Investor Presentation																																																																																																																
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澳大利亚新兴钒资源



ASX : RVT

FERRO.ALLOY.NET论坛演示



2024年三月

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重要通知和免责声明

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当公司提及本演示文稿中概述的可行性研究结果、矿产资源估计和矿石储量估计，并在2022年10月14日的公司招股说明书和2022年10月21日的补充招股说明书以及2022年12月9日发布给ASX的独立技术评估报告中披露的结果时，公司确认没有获悉任何对该报告中包含的信息产生重大影响的新信息或数据，并且所有重要假设，包括预测财务信息和技术参数，仍然适用且没有发生重大变化。

本演示文稿中提供的历史勘探结果和矿产资源 and 矿石储量信息，以及JORC表1信息，包含在公司于2022年10月14日的招股说明书和2022年10月21日的补充招股说明书中，并于2022年12月9日发布给ASX。

为我们的孩子创造一个更美好的世界

我们都是人类，希望为我们的孩子留下一个更美好的世界。人为引起的气候变化是一项前所未有的挑战，是一个全球性的问题。如果我们想要实现全球脱碳，我们必须共同努力。

2020年，习近平主席宣布中国承诺在2030年达到碳排放峰值，并在2060年实现碳中和。中国在清洁能源方面的投资超过了世界上任何其他国家。截至2023年6月，可再生能源已经取代煤炭成为中国最大的装机容量¹。



电池储能革命

没有大规模、长时间的电池储能，世界无法实现能源转型目标。这一论断通过不断增长的千兆瓦小时电池储能系统的安装，得到证明。

目前锂离子电池储能系统在市场上占据主导地位。因为其行业接受度高且前期成本优势，暂时成为首选的电池系统。

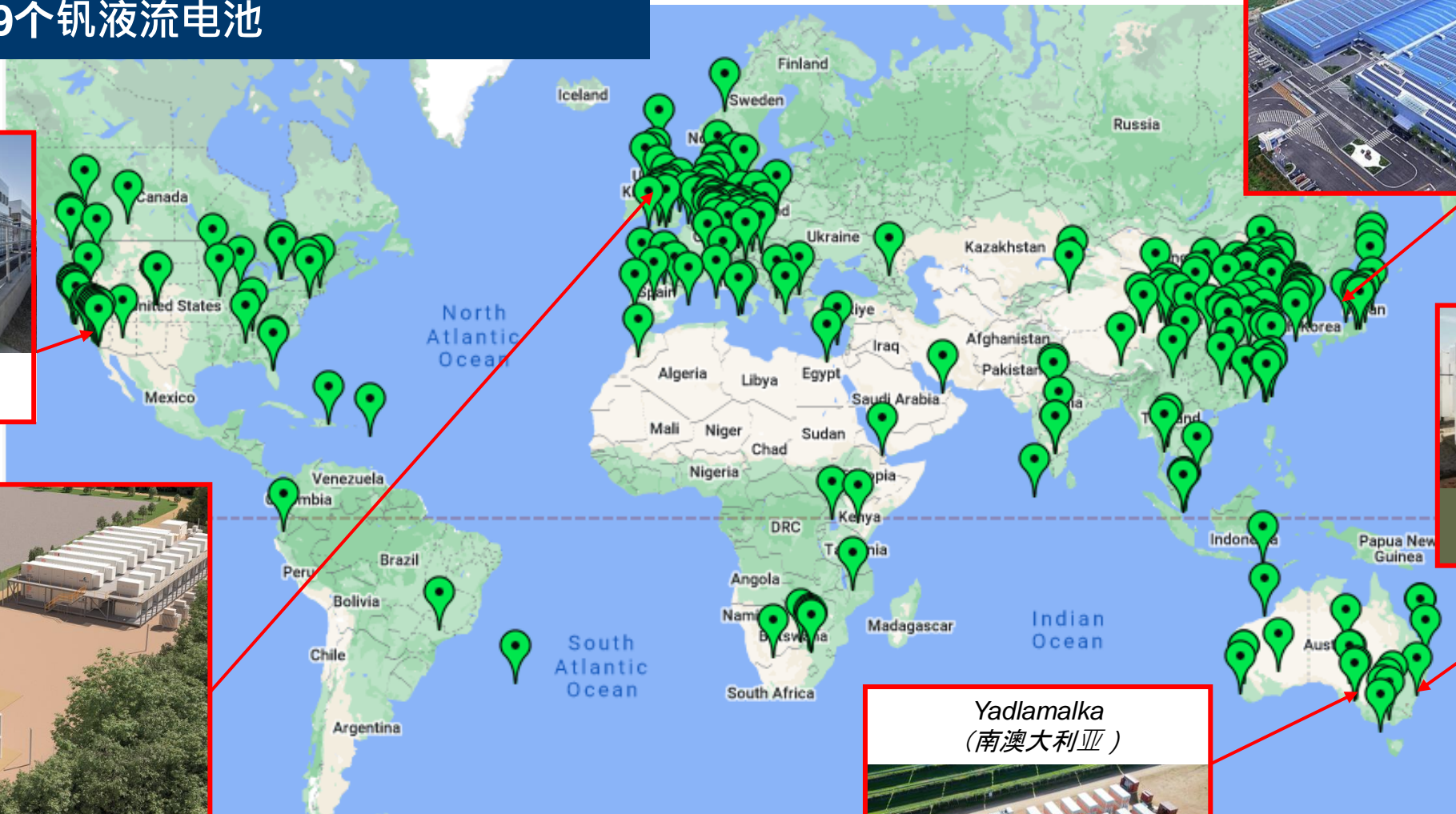
由于以下原因，钒液流电池的使用正在增加：

- 安全问题
- 电池寿命
- 可回收性
- 能够实现更长时间的储能（+4小时）。

中国在采用钒液流电池方面处于领先地位，而世界其他地区正在逐渐迎头赶上。



运行中：200个钒液流电池
 建设中：42个钒液流电池
 已公布：49个钒液流电池



圣地亚哥燃气
和电力 (美国)



大连融科 (中国)



North Harbour Clean Energy
(新南威尔士州)



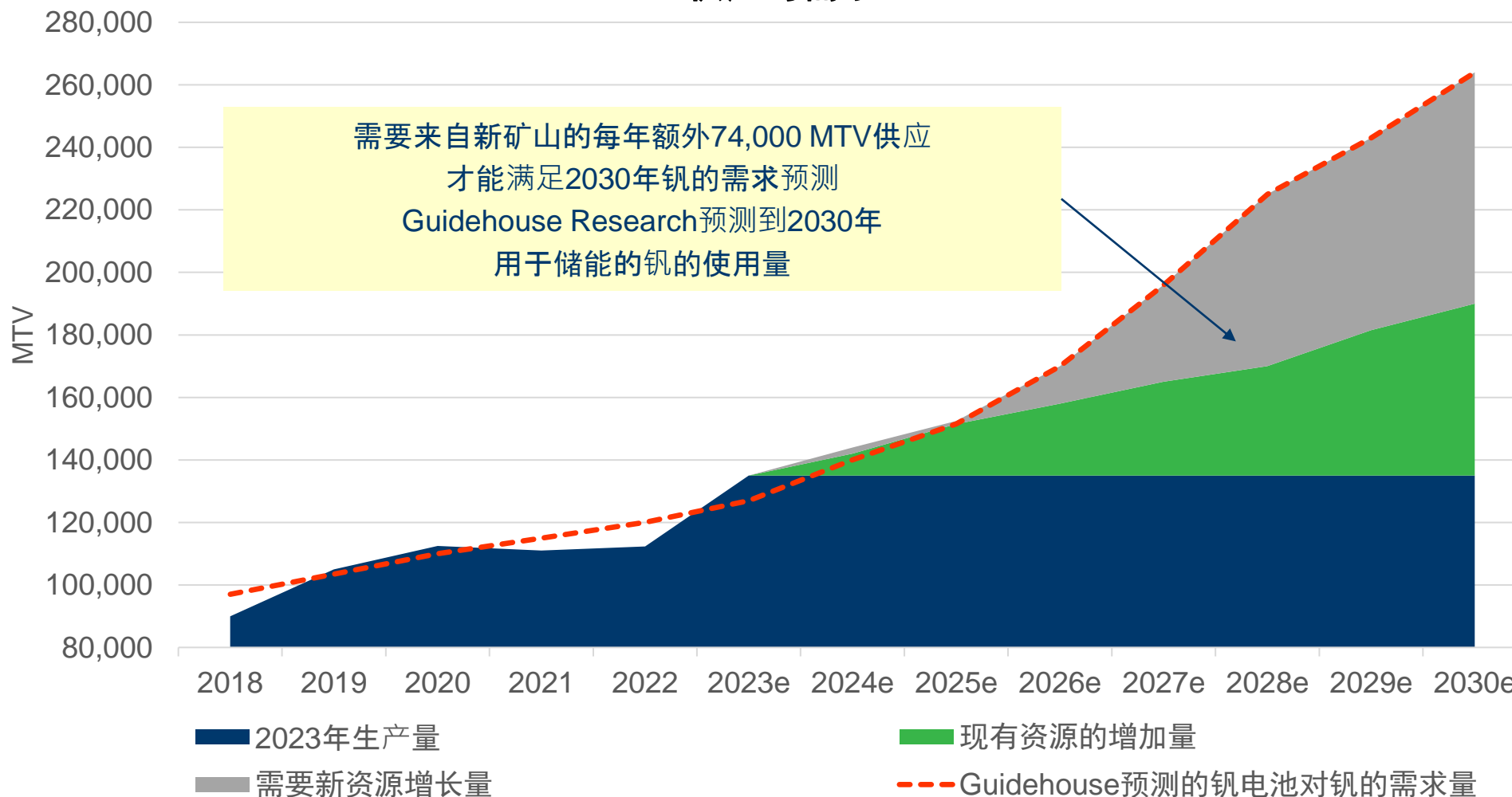
Energy Superhub Oxford (英国)



Yadlamalka
(南澳大利亚)

满足未来钒需求

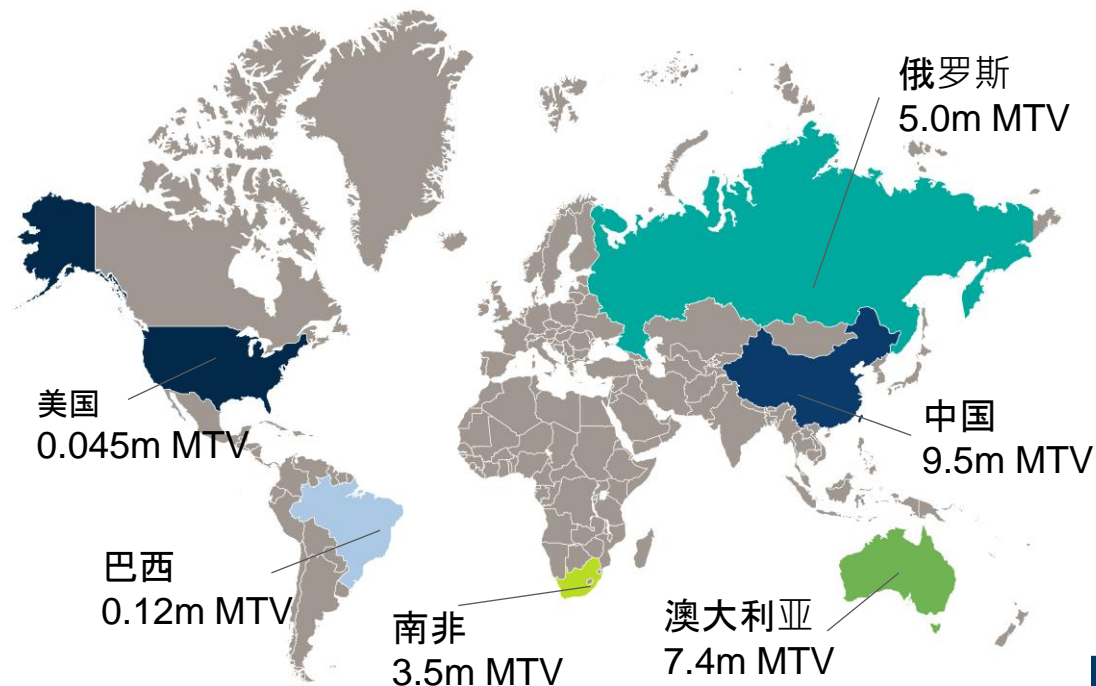
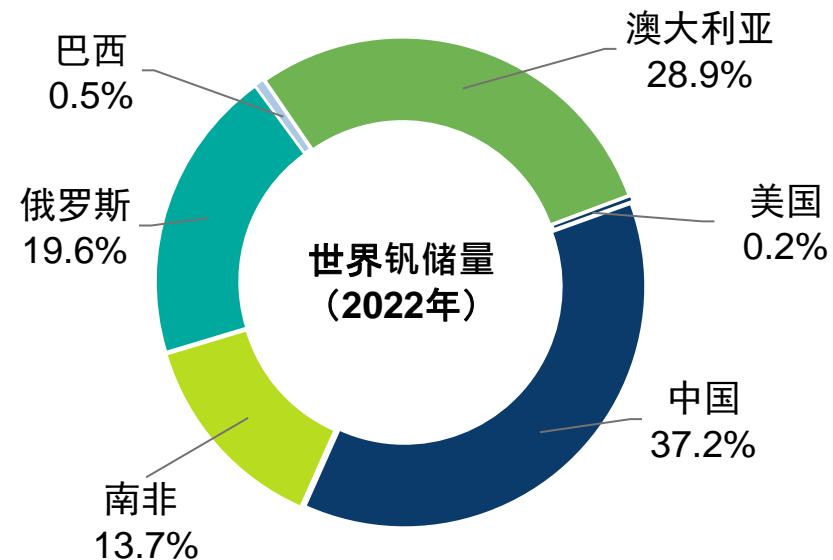
钒供应与需求



钒供应¹

- 当前产量约10万吨每年-90%来自4个国家
 - 中国、俄罗斯、南非和巴西
- 作为副产品生产来源
 - 钢渣、石煤、飞灰
- 作为主产品生产来源
 - 钒钛磁铁矿石
- 当前全球资源-6300万吨
- 当前全球储量-2600万吨
- 澳大利亚拥有全球第二大的钒储量，但不生产钒

¹ 参考“2023年矿物商品概要”，美国地质调查局，2023年1月31日



澳大利亚政府支持战略矿产

澳大利亚总理 - 尊敬的安东尼·阿尔巴内斯议员¹

我们希望将澳大利亚在战略矿产、能源和制造业方面提升到国际价值链的更高层次。我很高兴今天宣布，我们将把澳大利亚政府战略矿产设施的投资翻倍，达到40亿澳元，用于扩大该领域的投资。这将推动该行业的投资，并与我们的合作伙伴一起在国内外带来利益。

资源部联邦部长 - 尊敬的Madeleine King议员²

钒液流电池是在澳大利亚发明的，澳大利亚的钒将在能源转型中发挥关键作用。

钒产量在国际上高度集中，它被列入澳大利亚的关键矿产清单。

澳大利亚政府通过包括关键矿产设施和北澳基础设施基金在内的措施支持关键矿产项目。

昆士兰州州长 - 尊敬的Steven Miles议员³

钒流电池将成为我们储能方案的关键部分，全球需求迅速增长。根据三家主要公司之间的新协议，钒流电池将在北昆士兰制造。这些电池将由昆士兰制造，并将成为新的钒供应链的一部分，为北昆士兰提供巨大的可能性。

钒流电池提供了所需的大规模储能，以便可靠地为昆士兰的住宅、企业和工业提供风能和太阳能等可再生能源。

在去碳化电力网络的最后阶段，工业规模的储能和放电能力是版图最后一块拼图。

资源和战略矿产部长 唐斯维尔选区议员（昆士兰州） - 尊敬的斯科特·斯图尔特议员⁴

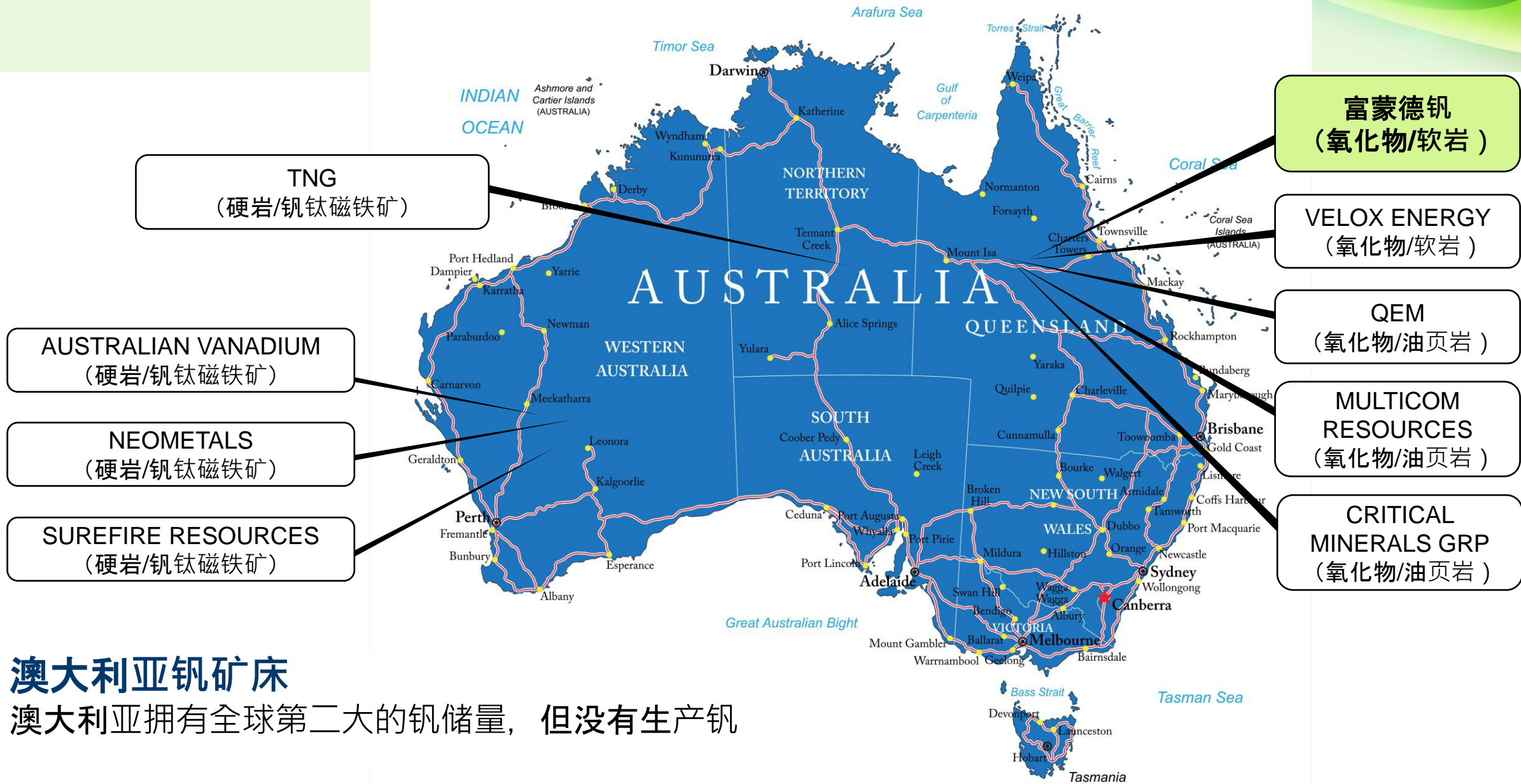
随着对钒电池的需求不断增长，北昆士兰的钒矿开采和生产潜力巨大。

1 参考与澳大利亚总理安东尼·阿尔巴内斯议员的新闻发布会，2023年10月25日，华盛顿

2 参考昆士兰政府媒体声明“汤斯维尔钒电池制造业蓬勃发展”，2024年2月21日

3 参考《能源与分配新闻》的文章“西澳钒电解质制造设施开放”，2024年1月18日

4 参考昆士兰政府媒体声明“Copperstring预算提升将推动钒产业发展”，2023年6月22日



澳大利亚钒矿床

澳大利亚拥有全球第二大的钒储量，但没有生产钒

介绍理解中国的人

Richmond Vanadium董事会

任双奎博士 非执行董事

任双奎出生于河南省，他在澳大利亚国立大学获得经济地质学博士学位，并拥有超过35年的勘探、项目评估和可行性研究的工业经验。

他曾国际矿业公司包括力拓、必和必拓和安格鲁黄金-阿山蒂担任高级技术和管理职位。自2016年以来，任双奎专注于Richmond钒项目，带领团队成功完成了前期可行性研究。

他是澳大利亚矿业与冶金学会的成员。

布伦登·格里尔斯先生 独立非执行主席

布伦登在商界和政府的各个层面拥有广泛的关系和网络。他曾担任高级内阁部长和西澳大利亚州议会议员长达16年，代表西澳大利亚州总理访问中国，担任区域发展部长。

他的格里尔斯集团业务已经发展壮大，包括铁矿石和黄金行业的战略咨询工作、土木承包、农业、原住民合作伙伴关系、航空以及对碳减排和开发新的碳抵消项目的创新研究。

乔恩·普莱斯先生 董事总经理

乔恩拥有布里斯班格里菲斯大学的环境科学学位，西澳矿业学院的采矿冶金研究生学历和矿产经济学硕士学位。

乔恩在贵重和关键矿产勘探、开发、建设、运营和企业管理方面拥有30年的经验，曾在Goldfields Ltd、Phoenix Gold和Horizon Minerals等小型和跨国公司担任高级管理和执行职位。

他是澳大利亚矿业与冶金学会（AusIMM）和澳大利亚公司董事学会（AICD）的会员，并担任Goldfields-Esperance发展委员会的董事会成员和主席，促进区域经济增长，任职6年。

赵凌丽女士 技术总监&首席项目工程师

赵凌丽出生于北京，拥有20多年的项目管理和工程经验。

她在电气、机械和控制系统设计、编程、调试和运营支持方面具有丰富的知识。赵凌丽拥有工程学学士学位，具有丰富的项目团队领导、招标评估和谈判、战略规划和成本控制经验，并在监督RVT专利待定工艺流程图的开发方面发挥了重要作用。

她目前正在通过西澳大学攻读MBA学位。



公司概况

资本结构

RVT
ASX代码

1560万澳元
现金
(截至2023年12月31日)

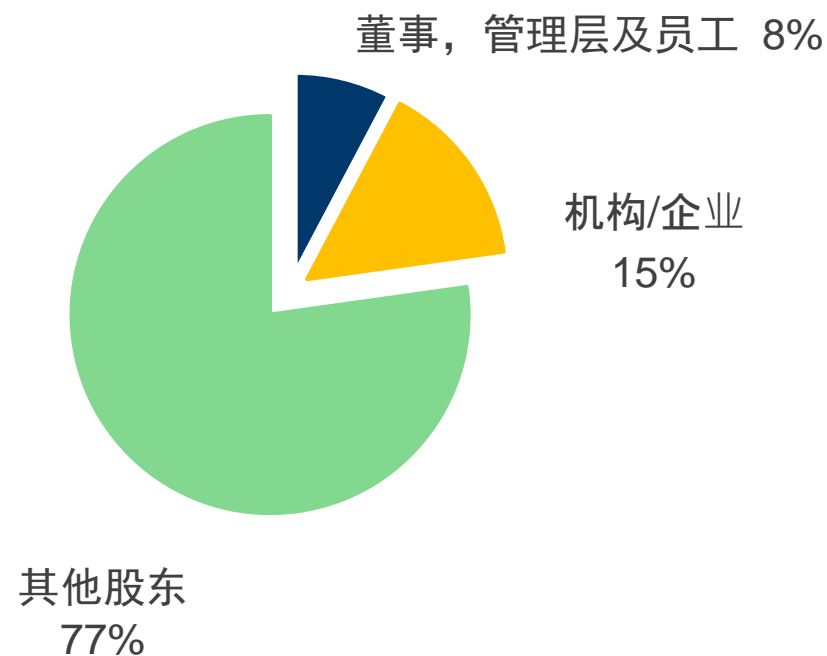
7653万澳元
市值
(截至12/03/2024)

2.218亿
股份
已发行

1350万
期权
已发行¹

330万
绩效
权益²

主要股东



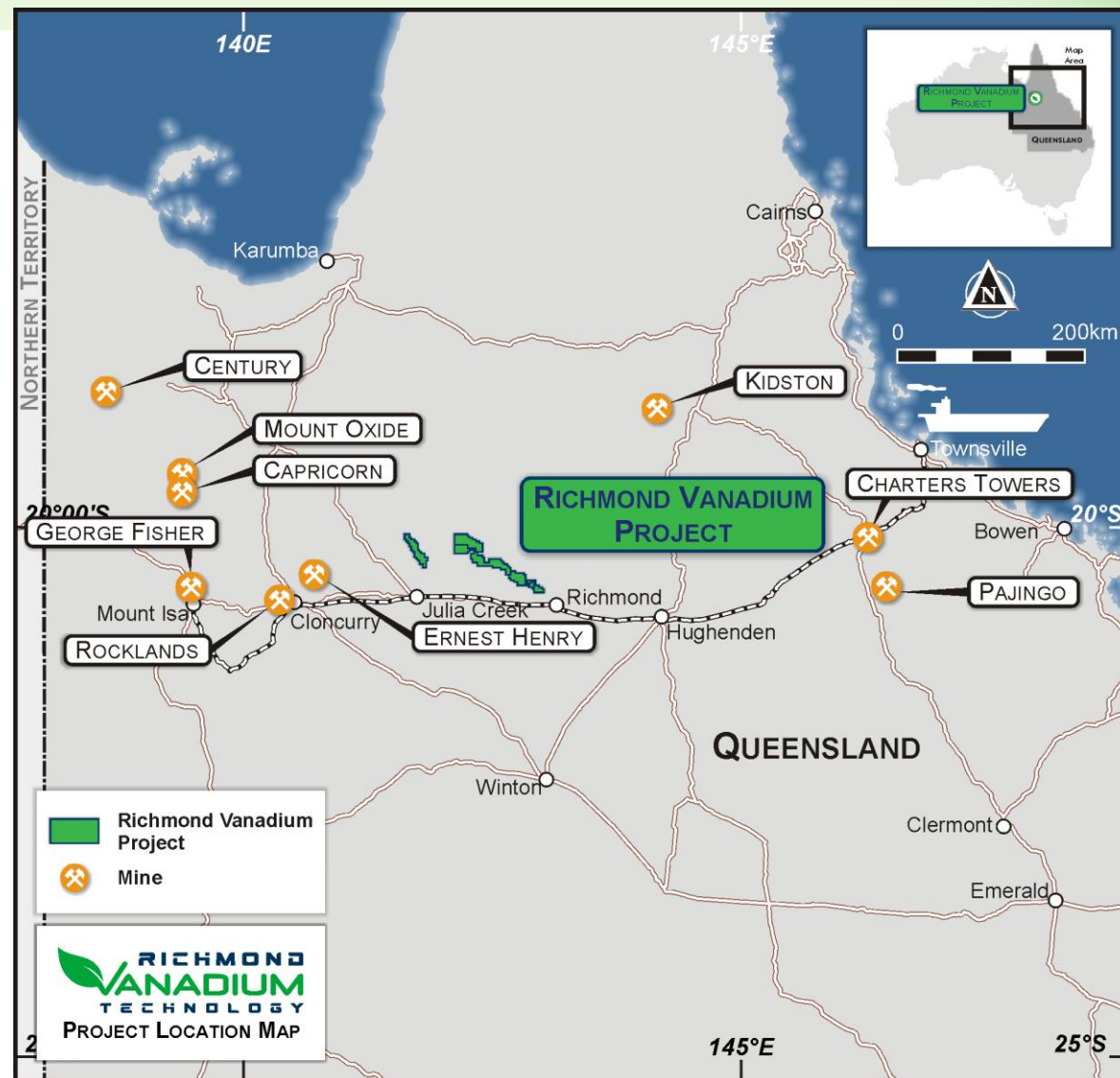
¹包括650万董事期权和665万首席经理期权，全部锁定期为2年，至2024年12月13日

²包括180万董事绩效权益，锁定期为2年，至2024年12月13日

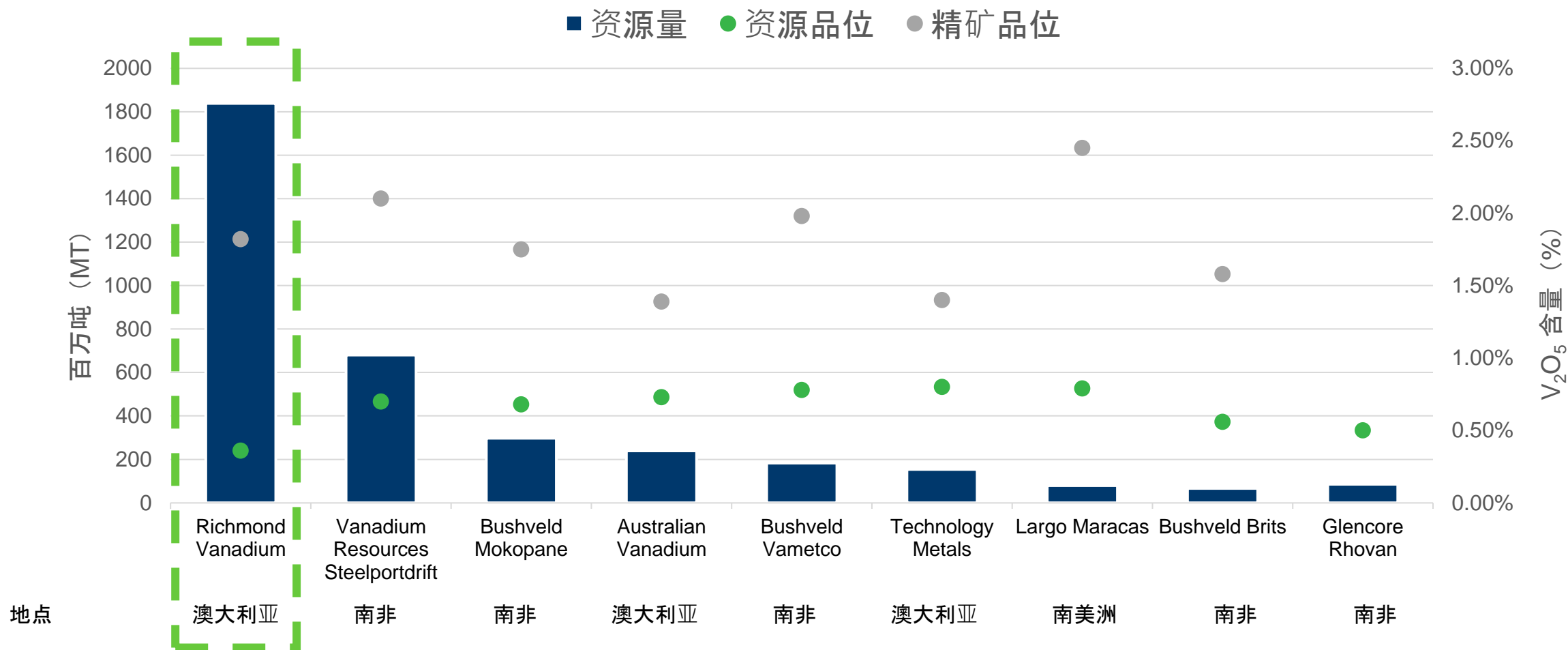
富豪德钒项目概述¹

- 位于昆士兰州西北矿产省的矿业友好管辖区（澳大利亚）
- 靠近重要基础设施和服务
- 2019年完成的可行性研究，2021年更新
- 银行可行性研究正在进行中，预计于2025年6月完成
- 环境批准工作正在进行中
- 目标在2025年9月做出建设决策

¹ 请参阅于2022年10月14日发布的招股说明书和于2022年10月21日发布的补充招股说明书·附件2“主要PFS结果摘要”附在本演示文稿中，并参阅ASX于2022年12月9日发布的公告“Epic被任命为交付EIS”，于2023年3月9日发布的公告“DRA Global被任命为Richmond钒可行性研究的工程服务顾问”，以及于2024年1月16日发布的公告“BFS更新”



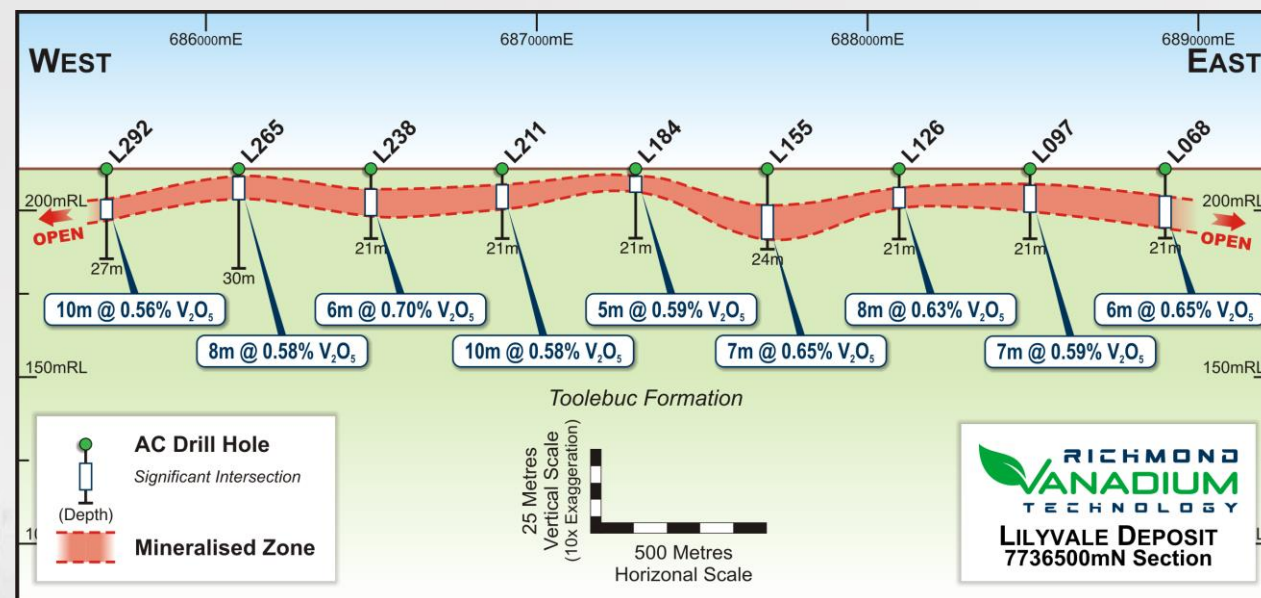
全球主要矿产资源



上图比较了不同阶段不同公司报告的矿产资源。只显示具有边界品位大于 $\geq 0.30\%$ 和平均资源品位大于 $>0.35\%$ 的资源。所有比较数据均来自公开公司披露，请参阅附录3“同行比较表”附在本演示文稿中。

简单地质和低成本采矿¹

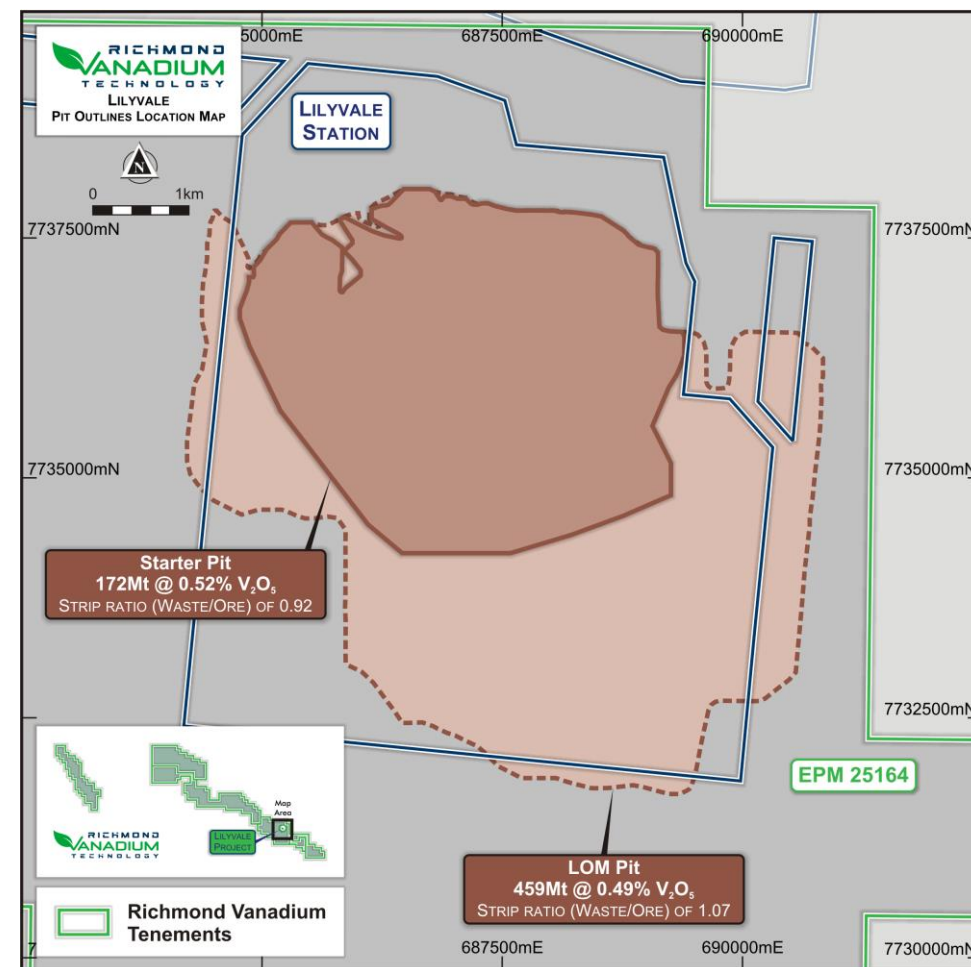
- 矿化物与Toolebuc层位相关，平均深度为2-25米
- 首采坑钻探平均品位是0.52% V_2O_5 ，最高品位0.88% V_2O_5 超一米厚
- 露天开采，剥采比极低 (0.92)
- 可以较低成本去除粗粒级部分以生产高品位钒精矿1.83% V_2O_5
- 废料/尾矿无毒



LILYVALE矿床矿石储量¹

- Lilyvale矿床的初步露天矿石储量为：
4.592亿吨 @ 0.49%，含225万吨V₂O₅
- 在Lilyvale矿床控制性矿产资源上设计了两个采矿坑：
 - LOM（矿山寿命）采矿坑承载可采储量；以及
 - 首采矿坑专注于LOM采矿坑的高品位部分
- 根据2012年JORC规范，这两个采矿坑都承载了根据控制性资源设计的可采储量。
- 超过76%的资源已升级为控制性类别
- 首采矿坑旨在在早期采矿阶段实现较低的剥离比（0.92）和较高的矿石品位（0.52% V₂O₅）。

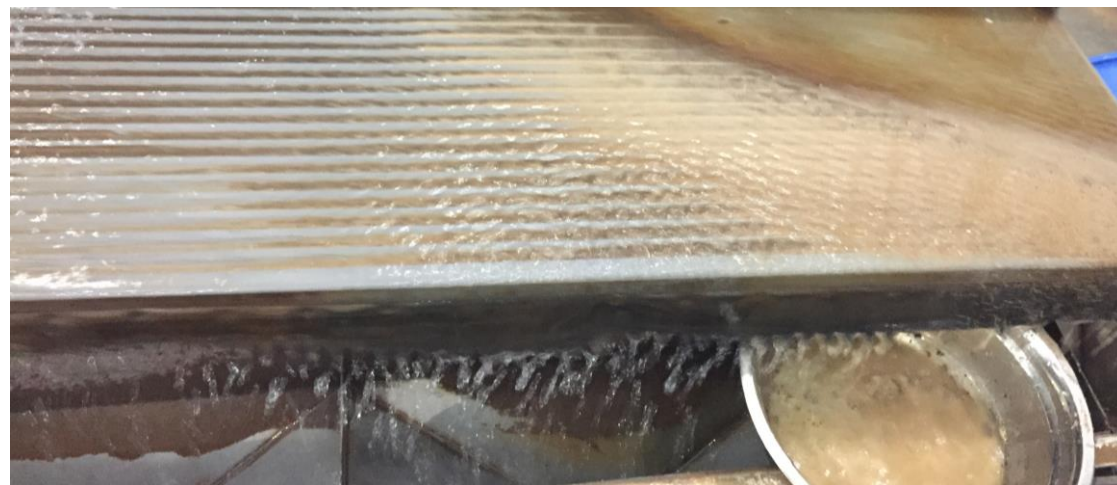
Lilyvale矿床的矿石储量 - 截止品位为0.30%				
采矿坑	总岩石量 (百万吨)	可采矿石量 (百万吨)	剥离比 (无)	可采矿石的平均 V ₂ O ₅ 品位 (%)
LOM	951.7	459.2	1.07	0.49
STARTER	331.7	172.5	0.92	0.52



¹请参阅ASX:HRZ于2020年10月27日发布的题为“Richmond-Julia Creek钒项目的可行性研究和首次矿石储量”的公告。

完整详细的冶金试验¹

- 解锁巨大潜力的关键是找到经济有效的选矿冶金解决方案，从矿石中提取钒。
- 在长沙矿冶研究院、湖南有色金属研究院、北京矿冶研究总院专业知识指导下，进行了5年的选矿冶金试验。
- 所有试验都采用了已生产的成熟技术，以降低技术风险。
- 确定了两步工艺：
 - 第一阶段将矿石从0.49%的采矿品位升级到1.82%的 V_2O_5 精矿品位。
 - 第二阶段通过精炼提取，生产出98%的 V_2O_5 ，用于钢铁和储能市场。
- 所生产的精矿中钙含量大大降低，使得可以采取多种下游加工工艺。
- 实验工作作为可行性研究提供了流程设计。



预估生产成本细化比较

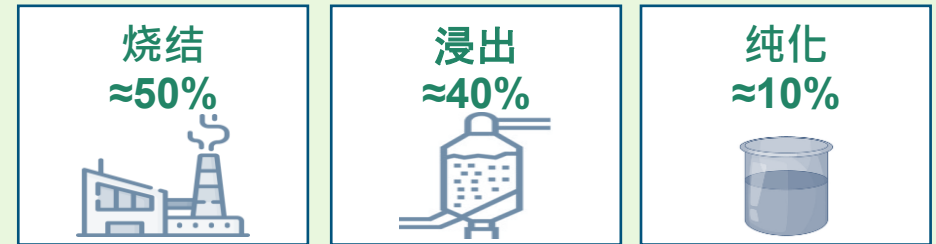
软氧化物与钒钛磁铁矿

浓缩

回收

达到最低98%以符合钒片标准

钒钛磁铁矿型钒矿

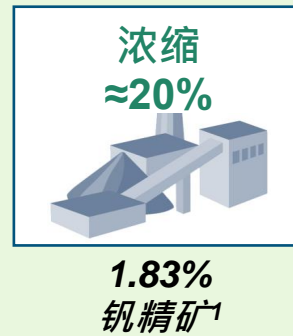


软氧化物型钒矿

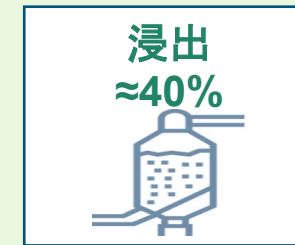
否
钻孔和爆破



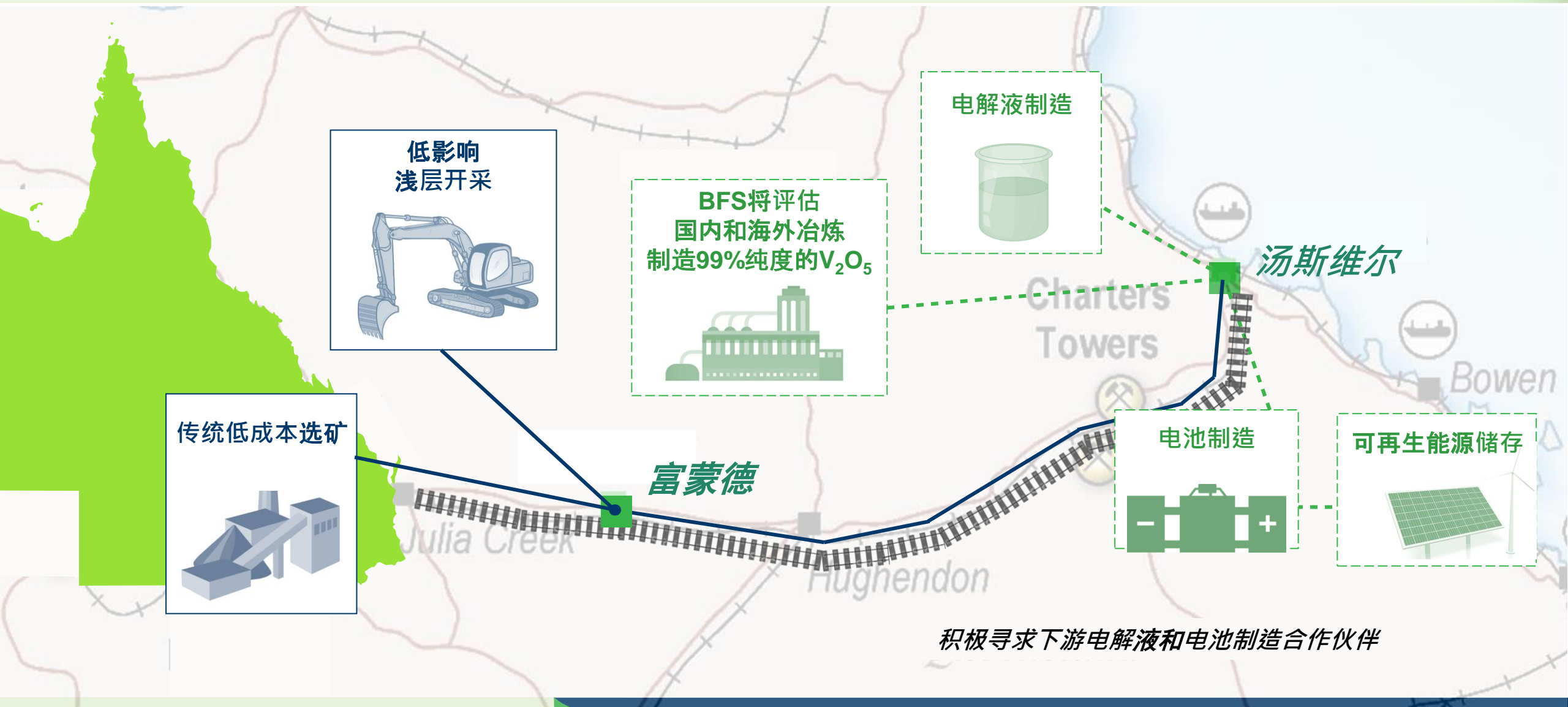
否
磨矿



否
烧结



从矿石到电池



积极寻求下游电解液和电池制造合作伙伴

环境 - 社会 - 治理

环境

- 环境影响评估正在进行中-州政府于2023年3月发布最终条款¹
- 初步环境评估表明没有重大环境限制，不会阻止项目继续进行²

社会

- 通过与当地社区进行公开和相互尊重的合作，我们促进了当地经济发展
- 使用当地企业-土木工程、住宿、服务和餐饮

治理

- 我们重视问责制、透明度、公平性和对所有利益相关者的责任
- 昆士兰州首个被宣布为协调项目的重要矿产项目

全球公认的世界经济论坛（WEF）采纳
ESG框架-季度报告正在进行中



¹ 请参阅ASX公告“发布环境影响评估条款”，2023年4月11日

² 请参考2022年10月14日发布的RVT招股说明书和2022年10月21日发布的补充招股说明书，于2022年12月9日在ASX上发布

投资优势



地点

澳大利亚是矿业友好的司法管辖区，与中国是紧密的贸易伙伴

项目位于靠近现有基础设施的地方，包括连接到汤斯维尔港的主要公路和铁路



潜力

世界上最大的未开发氧化钒资源之一，能够以当前的处理能力支持100年以上的钒生产

预计从2020年到2029年，钒电池的钒消耗量将以平均每年20.7%的速度增长



可行性研究和环境批准正在进行中

2021年完成的可行性前期研究 - 以每磅9.60美元的价格生产V₂O₅，项目的NPV (10) 为6.13亿澳元，IRR为38%，回收期为3.2年

可行性研究和环境影响报告正在进行中



时间

预计将在2025年9月获得监管批准和最终投资决策

预计从2026年开始，当前钒市场动态将因全球采用长时段能量储存锂电池而显著增长

联系我们

乔恩·普赖斯

董事总经理

电话：+61 8 6141 9500

邮箱：info@richmondvanadium.com.au

任双奎博士


非执行董事

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本演示文稿已获Richmond钒技术有限公司董事会授权发布

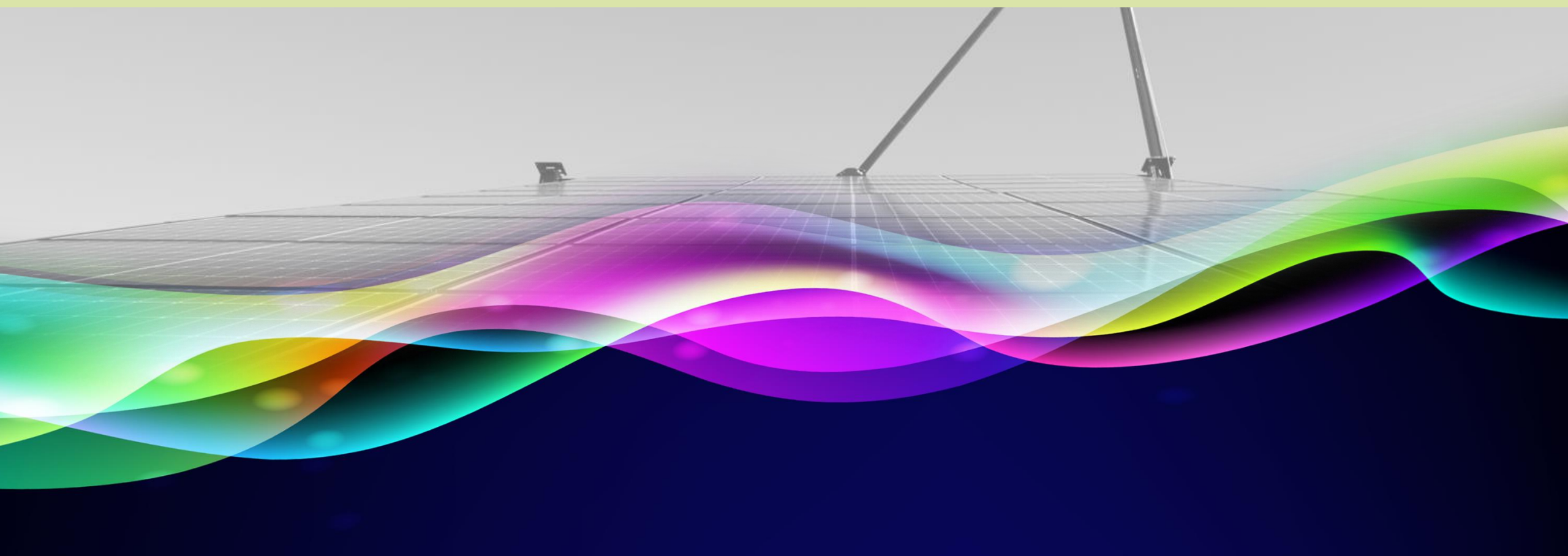
 www.richmondvanadium.com.au

 Richmond钒技术

 @richvanadium

 RICHMOND
VANADIUM
TECHNOLOGY

附录



附录1 - 矿产资源和矿石储量估计¹

富蒙德钒矿项目 矿产资源和含金属量 (截止于0.30% V ₂ O ₅)				
矿床	分类	吨位 (百万吨)	V2O5 (%)	V2O5 (百万吨)
Rothbury	推测	1,202	0.30	3.75
Lilyvale	控制	430	0.50	2.15
Lilyvale	推测	130	0.41	0.53
Manfred	推测	76	0.35	0.26
总计和平均值		1,838	0.36	6.65

注：

按照JORC规范 (2012年) 报告，边界品位为0.3% V₂O₅

金属含量使用3位小数计算

金属含量与HGS的矿产资源更新 (ASX:HRZ “Intermin announces world –class Vanadium Resource”, 日期为2018年3月20日) 存在算术错误导致的差异。上表反映了Manfred的正确结果。

钼和镍的金属含量可以在ITAR的5-1表找到 (请参阅2022年10月14日的招股说明书和2022年10月21日的补充招股说明书，于2022年12月9日发布至ASX)

富蒙德钒矿项目 矿石储量 (Lilyvale矿床)			
分类	吨位 (百万吨)	V2O5 (%)	V2O5 (百万吨)
已证实	0.00	0.00	0.00
可能的	459.2	0.49	2.25
总计	459.2	0.49	2.25

注：

0.3% V₂O₅的边界品位 (COG)

该项目的矿石储量报告符合澳大利亚勘探结果、矿产资源和矿石储量报告准则 (JORC)

矿石储量报告基于徐大伟博士编制的信息，MAusIMM

附录2 - 主要PFS结果摘要¹

测量	PFS结果 钒价格为US\$9.60/磅 V ₂ O ₅ (研究价格)
矿山寿命 (LOM)	
总开采体积 (Mt)	951.7
剥离比 (废石: 矿石)	1.07
开采矿石 (Mt)	459.2
矿石品位 V ₂ O ₅ (%)	0.49



测量	PFS结果 价格为US\$9.60/磅 V ₂ O ₅ (研究价格)	敏感性分析		
		PFS结果 钒价格为US\$7.60/磅 V ₂ O ₅	PFS结果 钒价格为US\$8.60/磅 V ₂ O ₅	PFS结果 钒价格为US\$10.60/磅 V ₂ O ₅
PFS (最初25年寿命)	(基于在澳大利亚进行选矿, 离岸精炼)			
开采矿石 (Mt)		101.5		
矿石品位 V ₂ O ₅ (%)		0.49		
钒酸钒浓缩产量 (Mt)		19.75		
浓缩品位 (%)		1.82		
精炼回收率平均值 (%)		86.1		
98%薄片钒酸钒产量 (kt)		317.5		
资本成本 (\$M)		A\$242.2		
运营成本 (\$/磅)		A\$8.66 (US\$6.32 ²)		
NPV @ 10% (\$m) (税后)	A\$613	A\$139	A\$376	A\$850
回收期 (年)	3.2	8.7	4.6	2.5
IRR	38%	17%	28%	48%

敏感性分析中的所有重要假设仍然适用且未发生重大变化。敏感性分析包括在ITAR中 (请参阅2022年10月14日的招股说明书, 附表1, 图10-1) 显示该项目对产品价格最为敏感, 其次是汇率。浓缩产品价格变化15%导致NPV变化31%至41%。

¹ 请参阅2022年10月14日的招股说明书第4节, 以及附表1的ITAR和2022年12月9日发布到ASX的补充招股说明书

² 澳元兑美元汇率 (0.73)



附录3 - 同行比较表

公司	代码	项目	阶段	资源类别	资源吨数 (百万吨)	资源品位 (V ₂ O ₅ %)	总资源量 (百万吨 @ V ₂ O ₅ %)	浓缩品位	信息来源和注释																																																																																																																
Richmond Vanadium	ASX:RVT	Richmond – Julia Creek	开发	指示	429.4	0.50	1,838百万吨 @ 0.36% (截止 V ₂ O ₅ = 0.30%)	1.82	请参阅于2022年10月14日发布的招股说明书和于2022年10月21日发布的补充招股说明书, 于2022年12月9日发布至ASX																																																																																																																
				推测	1,408.6	0.33				Vanadium Resources	ASX:VR8	Steelportdrift	开发	测定	145.5	0.72	680百万吨 @ 0.70% (截止 V ₂ O ₅ = 0.45%)	2.10	ASX公告日期为2022年11月17日的投资者介绍	指示	327.3	0.70	推测	207.4	0.68	Bushveld	LSE:BMN	Mokopane	开发	指示	63.2	1.32	297Mt @ 0.68% (截止 V ₂ O ₅ = 0.30%)	1.75	莫科帕内钒项目预可行性研究 2016年1月30日 bushveldminerals.com/wp-content/uploads/2017/08/201602040458050.pdf	推测	234.0	0.51	Australian Vanadium	ASX:AVL	澳大利亚钒	开发	测定	11.3	1.14	239Mt @ 0.73% (混合截断!)	1.40	ASX公告日期为2022年4月6日, 澳大利亚钒项目可行性研究报告。73.6Mt的指示资源和88.5Mt的推测资源使用0.40% V ₂ O ₅ 截断。其他所有资源量 (95.6Mt) 使用0.70% V ₂ O ₅ 截断。	指示	82.4	0.70	推测	145.3	0.71	Bushveld	LSE:BMN	Vametco	生产	指示	140.1	0.74	183Mt @ 0.78% (截断 = 20% 磁铁矿)	1.98	Vametco推测和指示矿产资源和矿石储量更新·用于年度报告·2022年3月30日 bushveldminerals.com/wp-content/uploads/2022/04/J4590-Vametco-Mineral-Resources-and-Ore-Reserves-31-December-2021-Dated-30-Mar-2022.pdf	推测	42.6	0.90	Technology Metals	ASX:TMT	默奇森技术金属	开发	测定	12.1	1.00	154Mt @ 0.85% (截止 V ₂ O ₅ = 0.40%)	1.40	ASX公告日期2022年11月23日 RIU复苏会议2022年11月23日	指示	51.2	0.90	推测	90.5	0.80	Largo Resources	NASDAQ: LGO TSX:LGO	马拉卡斯	生产	测定	45.95	0.83	79Mt @ 0.78% (截止 V ₂ O ₅ = 0.30%)	2.45	43-101技术报告日期2021年10月10日 s29.q4cdn.com/562286712/files/doc_downloads/technical_report/marac%C3%A1s_menc hen_mine/TR_GE21_Largo_43101_16122021_Final-Version-Conformed-for-Filing.pdf	指示	17.73	0.70	推测	15.52	0.74	Bushveld	LSE:BMN	布里茨	勘探	指示	44.9	0.56	66.8Mt @ 0.56% (截断 = 20% 磁铁矿)	1.58	关于布里茨钒项目西北部的有资质人员报告2020年1月30日 bushveldminerals.com/wp-content/uploads/2020/01/Independent-CPR_Brits-Vanadium_January_2020_Final.pdf	推测	22.0	0.55	Glencore	LSE:GLEN JSE:GLN	Rhovan	生产	测定	51.7	0.47	176Mt @ 0.49% (截止日期 = 15% 磁铁矿)	
Vanadium Resources	ASX:VR8	Steelportdrift	开发	测定	145.5	0.72	680百万吨 @ 0.70% (截止 V ₂ O ₅ = 0.45%)	2.10	ASX公告日期为2022年11月17日的投资者介绍																																																																																																																
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Australian Vanadium	ASX:AVL	澳大利亚钒	开发	测定	11.3	1.14	239Mt @ 0.73% (混合截断!)	1.40	ASX公告日期为2022年4月6日, 澳大利亚钒项目可行性研究报告。73.6Mt的指示资源和88.5Mt的推测资源使用0.40% V ₂ O ₅ 截断。其他所有资源量 (95.6Mt) 使用0.70% V ₂ O ₅ 截断。																																																																																																																
				指示	82.4	0.70																																																																																																																			
				推测	145.3	0.71																																																																																																																			
Bushveld	LSE:BMN	Vametco	生产	指示	140.1	0.74	183Mt @ 0.78% (截断 = 20% 磁铁矿)	1.98	Vametco推测和指示矿产资源和矿石储量更新·用于年度报告·2022年3月30日 bushveldminerals.com/wp-content/uploads/2022/04/J4590-Vametco-Mineral-Resources-and-Ore-Reserves-31-December-2021-Dated-30-Mar-2022.pdf																																																																																																																
				推测	42.6	0.90																																																																																																																			
Technology Metals	ASX:TMT	默奇森技术金属	开发	测定	12.1	1.00	154Mt @ 0.85% (截止 V ₂ O ₅ = 0.40%)	1.40	ASX公告日期2022年11月23日 RIU复苏会议2022年11月23日																																																																																																																
				指示	51.2	0.90																																																																																																																			
				推测	90.5	0.80																																																																																																																			
Largo Resources	NASDAQ: LGO TSX:LGO	马拉卡斯	生产	测定	45.95	0.83	79Mt @ 0.78% (截止 V ₂ O ₅ = 0.30%)	2.45	43-101技术报告日期2021年10月10日 s29.q4cdn.com/562286712/files/doc_downloads/technical_report/marac%C3%A1s_menc hen_mine/TR_GE21_Largo_43101_16122021_Final-Version-Conformed-for-Filing.pdf																																																																																																																
				指示	17.73	0.70																																																																																																																			
				推测	15.52	0.74																																																																																																																			
Bushveld	LSE:BMN	布里茨	勘探	指示	44.9	0.56	66.8Mt @ 0.56% (截断 = 20% 磁铁矿)	1.58	关于布里茨钒项目西北部的有资质人员报告2020年1月30日 bushveldminerals.com/wp-content/uploads/2020/01/Independent-CPR_Brits-Vanadium_January_2020_Final.pdf																																																																																																																
				推测	22.0	0.55																																																																																																																			
Glencore	LSE:GLEN JSE:GLN	Rhovan	生产	测定	51.7	0.47	176Mt @ 0.49% (截止日期 = 15% 磁铁矿)		Glencore 2021年储量和资源报告于2021年12月31日 glencore.com/.rest/api/v1/documents/fb0cafaa3ec10b90571130be41ba4270/2021-GLEN_Resources-and-Reserves-report.pdf																																																																																																																
				指示	33.5	0.50																																																																																																																			
				推测	91.0	0.51																																																																																																																			

