VANADIUM FLOW BATTERY

RICHMOND VANADIUM TECHNOLOGY

RKP

POWERING THE FUTURE

ASX : RVT

CORPORATE PRESENTATION

August 2025

COMPANY BACKGROUND

Richmond Vanadium Technology Limited (RVT) is a **100% Australian-owned**, emerging, minerals development company. RVT is currently **advancing a $242.2milion[1] vanadium project** (Richmond – Julia Creek) in Queensland's North-West Minerals Province (500km west of Townsville and 400km east of Mt Isa) - the **first critical minerals project to be awarded Coordinated Project status** by the Queensland Government in May 2022.

RVT **seeks to develop an open cut, free dig vanadium mining operation to yield 98.6% vanadium pentoxide** (V_2O_5) flake over a 25-year initial life of mine (LOM) from the ore reserves from Richmond-Julia Creek project* .

Established in 2017, to progress the Richmond- Julia Creek Project, RVT **completed its Initial Public Offering** (listing on the Australian Securities Exchange) in December 2022 and has filed a **provisional patent** with the Australian Patent Office relating to the method for concentration of vanadium ore.

The Richmond – Julia Creek Vanadium Project is the world's largest non-titanomagnetite vanadium deposit and can produce a significant supply of vanadium (approximately 12,700 tonnes per annum (tpa) of vanadium product) for various end uses, including in energy storage technology.

RVT has completed a Pre-Feasibility Study for the project and has commenced a Bankable Feasibility Study and Environmental Impact Study, aiming for completion Q1/2 2026

RVT has partnered with Dalian Rongke Power Group Co (RKP) and TS Hold Co (Trinasolar) to advance Australia's vanadium extraction, processing, and battery manufacturing capability and capacity

RVT's objective is to advance the Australian vanadium battery industry through development of vanadium extraction and processing and onshore vanadium battery manufacturing, to position Australia as a long-term stable supplier of high-quality vanadium, reduce barriers to decarbonisation, and support Australia's transition to net zero

RVT has significant deposits of vanadium with a high concentrate grade 1.8 – 2.0% (V_2O_5 flake)

RVT's mine has significant potential to support growth of an Australian vanadium industry, contributing to the global energy transition through the advancement of long duration energy storage vanadium batteries (LDES-VFBs).

* Richmond-Julia Creek consists of five tenements* (EPMs 25163, 25164, 25258, 26425, 26426) encompassing an area of 1,403km^2 with three main prospects at Lilyvale, Manfred & Rothbury

RVT BOARD & LEADERSHIP

Brendon Grylls
Executive Chair

Brendon brings extensive relationships and networks at all levels of business and government. After 16 years as State MP and senior cabinet minister in Western Australia, his Brendon 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.

As the Minister for Regional Development, Brendon created and implemented the $7 billion regional investment policy 'Royalties for Regions' including concept development, campaign strategy, alliance government negotiation, drafting and delivery of parliamentary legislation, and oversight of all of the projects and services delivered by the policy. Brendon has also delivered six State Government budgets as a senior member of the Economic Expenditure Review Committee which designed and delivered the Western Australian State budget.

Brendon was appointed to the Board of RVT in April 2022 and recently assumed the Executive Chair role from Jon Price.

Dr Shuang (Shaun) Ren
Non-Executive Director

Shaun completed his Ph.D in Economic Geology at the Australian National University and has over 35 years industrial experience in exploration, project assessment and feasibility studies.

Since 2016, Shaun has focused on the Richmond – Julia Creek Vanadium Project leading the team at RVT to complete a Pre-Feasibility Study, an IPO which successfully raised $25 million in December 2022, and to commence the Bankable Feasibility Study.

Shaun retired as Managing Director of RVT in June 2023 however remains on the board as Non-Executive Director.

Experienced Board and senior leadership team with over 100 years' combined experience and proven track record of delivering major resource projects in mining, minerals and regional development.

Xiang (Shawn) Lin
Non-Executive Director

Shawn holds a Bachelor of Commerce majoring in accounting and economics from Carleton University. Shawn began his career at KPMG as a Senior Auditor, progressing to the Investment Manager at Sinocap Investment Holdings Ltd and then as the head of the Financial Investment, within the Department of Culture Landmark Investment Ltd. He was then promoted to Executive Director of associated companies, Champion Technology Holdings Ltd and Kantone Holdings Ltd in 2017.

Jon Price
Strategic Advisor (Former RVT 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 Western Australian School of Mines. He has over 30 years' experience in precious and critical minerals from exploration, development, plant construction, operations and corporate. Jon has held senior management and executive positions with small and multinational companies, including Goldfields Ltd, Phoenix Gold and Horizon Minerals Limited. He is a member of the AusIMM and Australian Institute of Company Directors and served 6 years as Board member and Chair of the Goldfields-Esperance Development Commission promoting regional economic growth.

Jon was appointed to the Board of RVT as a Non-Executive Director in June 2022 and as Managing Director in July 2023. He has recently handover management responsibility to Brendon but continues to work for RVT in an advisory capacity.

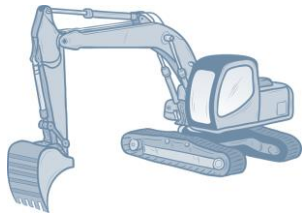
Lily Zhao
Chief Project Engineer

Ms Zhao 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 undertaking an MBA through the University of Western Australia, & recently departed the Board.

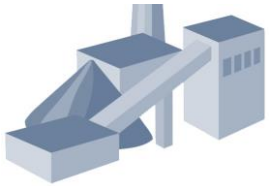
MINE TO METAL TO BATTERY

An economic analysis for beneficiation to a concentrate in Australia, and a comparison of recovery offshore in China or onshore in Australia was carried out as part of the PFS. The PFS recommended that recovery to produce V_2O_5 flake be carried out offshore due to lower capital and operating costs.

Low impact shallow mining



Conventional low-cost concentrate



BFS will assess in country recovery to 99% V_2O_5

Electrolyte manufacture

BFS focussed on onshore production - with Australian Govt support

Townsville

Richmond

Battery making

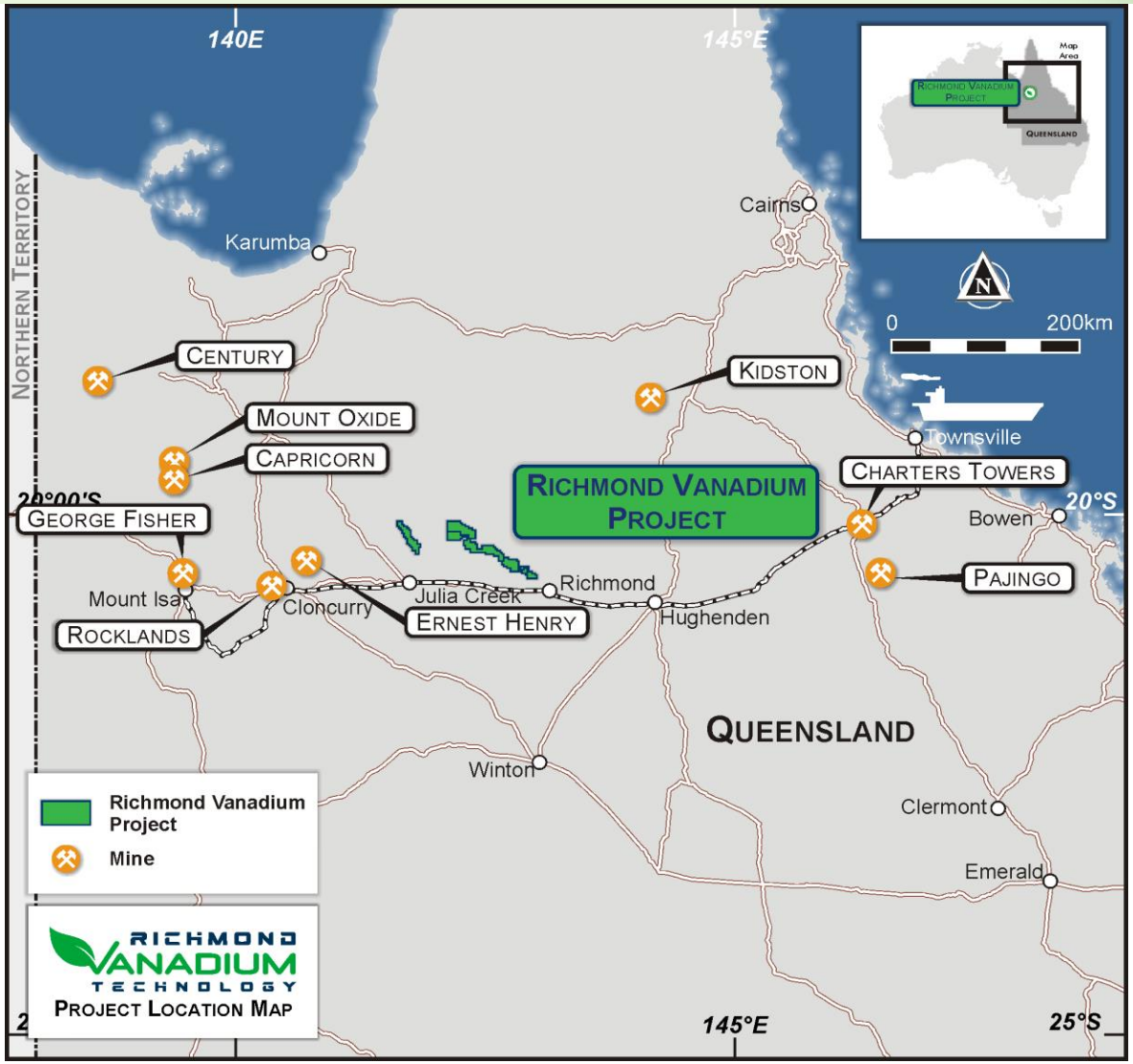
Renewable Energy Storage

The BFS will undertake further analysis of downstream recovery to be conducted in Australia (Queensland) as the preferred option due primarily to a changed government landscape. It is noted that an Australian recovery option may require government funding assistance due to the lower financial returns in this scenario. The BFS will consider further optimising the process to reduce capital costs if it was carried out in Australia as noted in the Company's Prospectus, Schedule 1 (ITAR) released to the ASX on 9 December 2022.

The process flow for electrolyte manufacture, battery making, and renewable energy storage is not a direct asset of the Company, however, it is part of the intended market to which the Company's product is to be supplied, including via a Collaboration Agreement with Rongke Power, the world's largest vanadium electrolyte and VFB manufacturer (As released to the ASX on 28 May 2024).

RICHMOND VANADIUM PROJECT OVERVIEW[1]

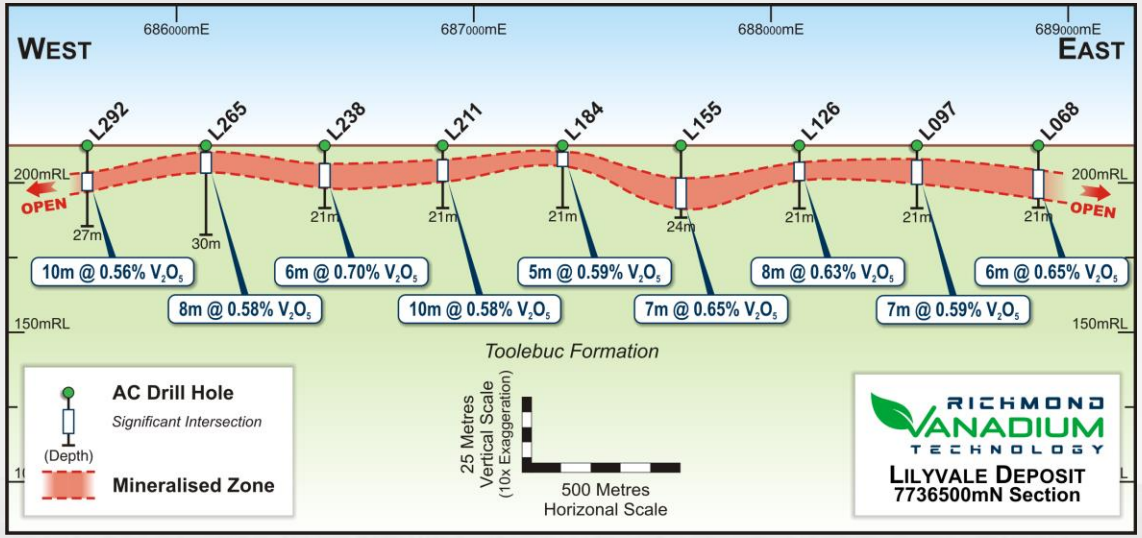
- Mining friendly jurisdiction within the North-West Minerals Province of Queensland (Australia)
- Close to major infrastructure and services
- PFS completed in 2019, updated in 2021
- Declared a Co-ordinated Project in 2022
- BFS underway for completion in 2026
- Statutory approvals well advanced
- EIS Draft submitted to QLD Government's OCG
- Targeting development decision in 2026



[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, "BFS Update, dated 16 January 2024 and "Draft Environmental Impact Statement Submitted", dated 6 August 2024.

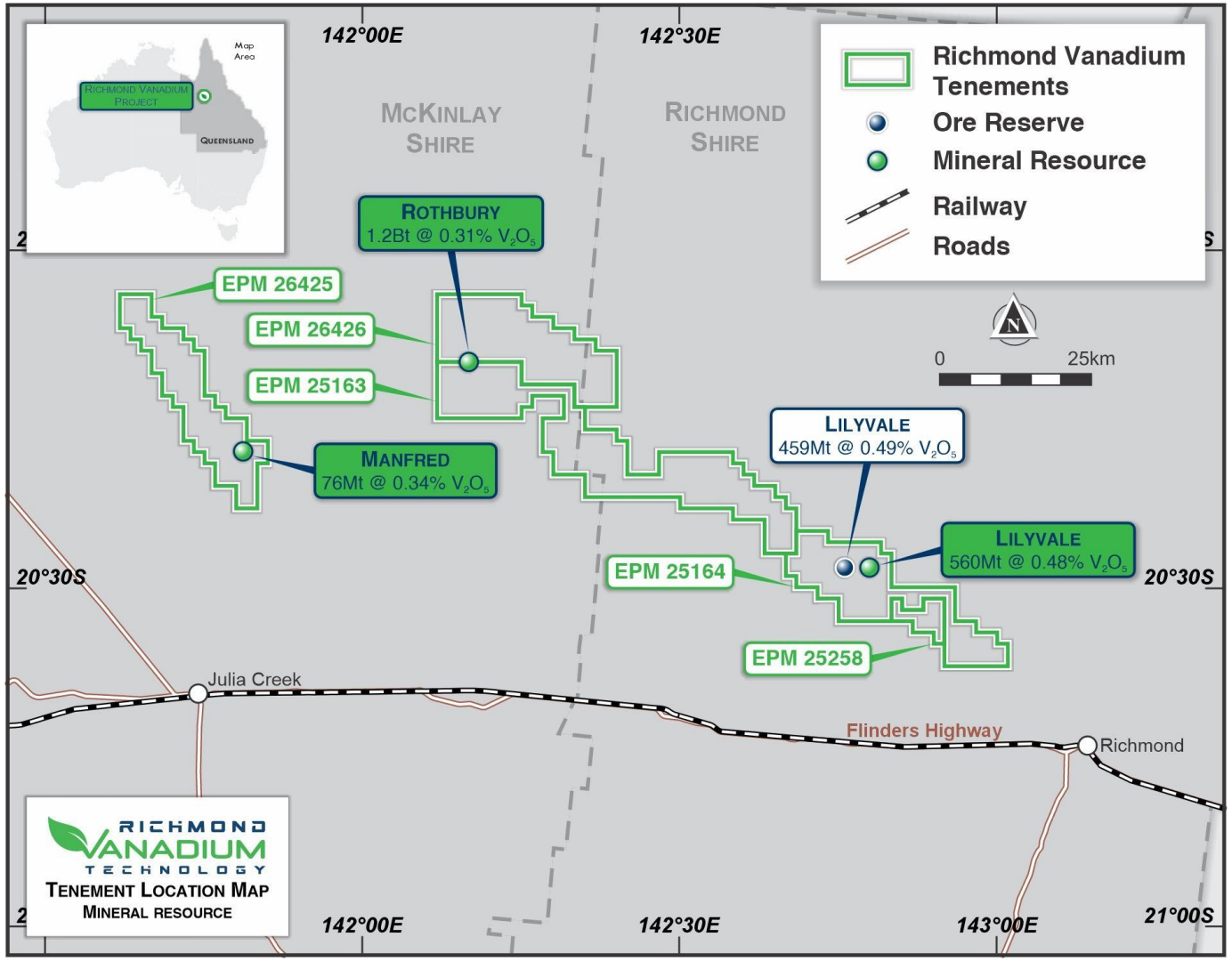
SIMPLE GEOLOGY AND LOW-COST MINING[1]

- Mineralisation associated with the Toolebuc formation at an average depth of 2 - 25m
- Starter pit to focus on upper mineralised zone:
  - highest grade based on drilling to date (0.52% V_2O_5)
  - 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 1.82% V_2O_5
  - waste / tailings is non-toxic



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

LARGEST MINERAL RESOURCE OF ITS KIND IN THE WORLD[1]



Global Mineral Resource estimate of

1.8Bt @ 0.36% for 6.65Mt V_2O_5 at 0.30% cut-off

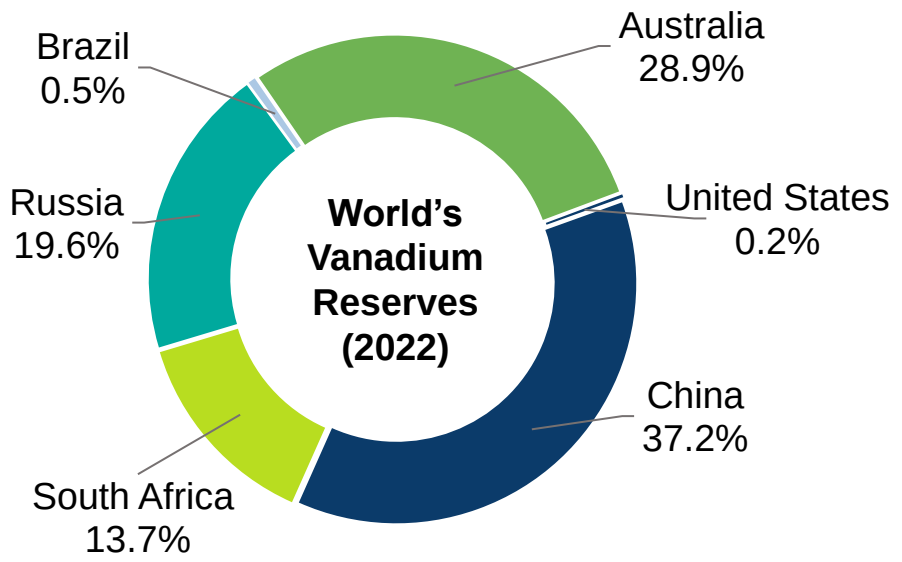
Ore Reserve estimate of

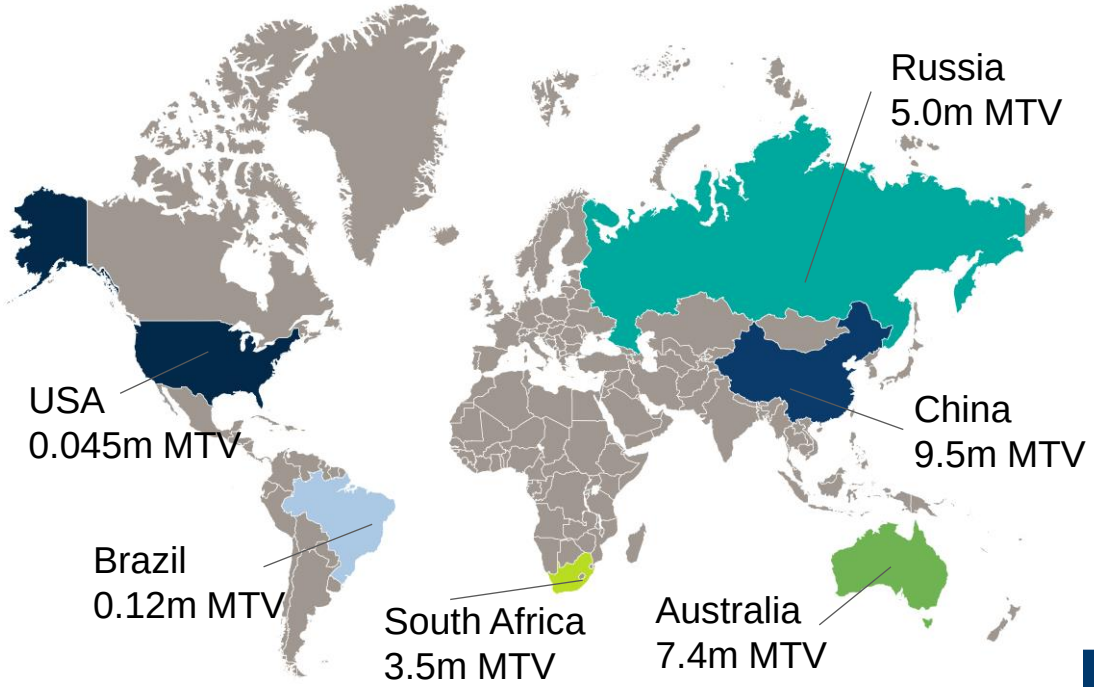
459Mt @ 0.49%for 2.25Mt V_2O_5

[1] Refer Prospectus dated 14 October 2022, Section 4 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022, and Appendix 1 "Mineral Resource and Ore Reserve Estimates" attached to this presentation

VANADIUM SUPPLY[1]

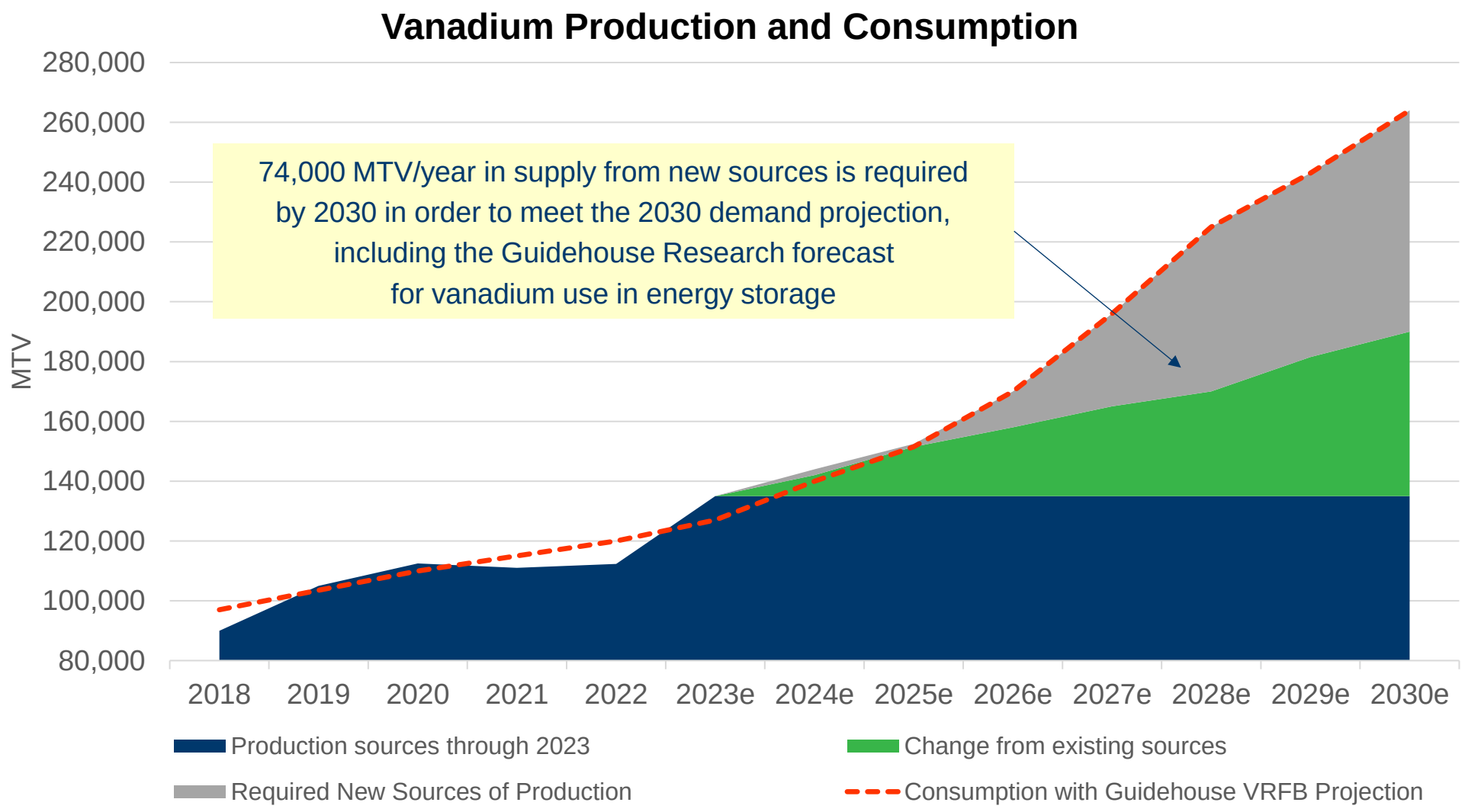
- Current production ~140ktpa – 90% from 4 countries
  - China, Russia, South Africa and Brazil
- Production from secondary sources
  - steel slag, stone coal, fly ash
- Production from primary sources
  - titanomagnetite ore
- Current global resources – 63Mt
- Current global reserves – 26Mt
- Australia has second highest vanadium reserves but produces no vanadium





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

MEETING FUTURE VANADIUM DEMAND



Source: "Vanadium Market Fundamentals", TTP Squared, 17 February 2022

MULTIPLE PROCESSING PATHWAYS

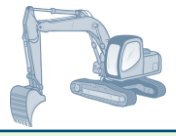
Concentrating

Recovery

RVT PFS Flow Sheet

No Drill & Blast

Mining



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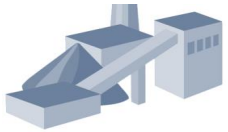
Concentrating



1.83% vanadium concentrate[1]

No Roasting

Leaching

Purifying

+98.6% vanadium flake[1]

Vanadium Pentoxide V_2O_5

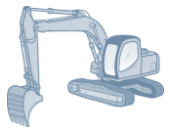
Concentrating

Electrolyte

Direct Concentrate to Electrolyte Flow Sheet

No Drill & Blast

Mining

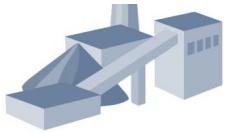


Dry Screen / Wet screen

No Milling

Flotation

Concentrating



vanadium concentrate to meet electrolyte grade[1]

Leaching/ Purifying

Confidential Process

Improved stability and additives, increase energy density and lifespan

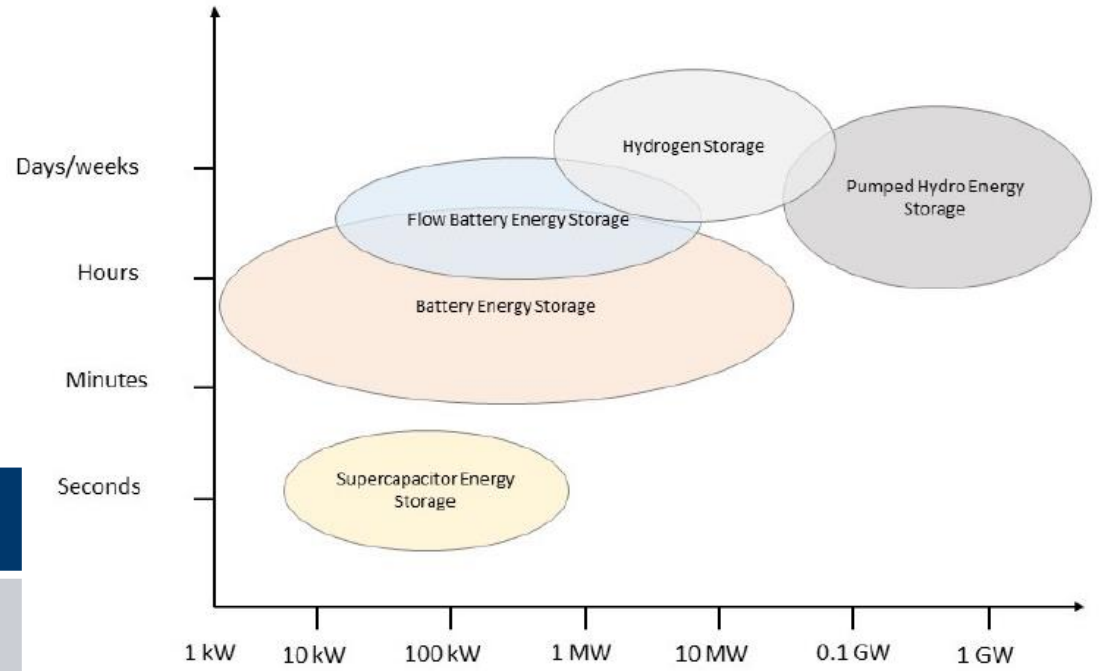
Vanadium Electrolyte

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

VANADIUM LEASING MODEL

By leasing the vanadium electrolyte, clients can access the benefits of vanadium flow batteries, including high safety, long-duration storage, and low life-cycle costs, without bearing the full upfront cost. This model addresses key challenges in vanadium electrolyte finance, such as asset security, quality assurance, valuation, liquidity, and maintenance, paving the way for broader adoption in the energy storage sector.

ADVANTAGES	DISADVANTAGES
– Long cycle life (10 000+ full cycles) – Relative high energy efficiency (up to 85%), but lower than Li-ion – One of the most mature flow batteries with multiple demonstration and deployed at MW scale – Design E/P ratio can be optimised to suit specific application – Long-duration (1-20 hours) continuous discharge and high discharge rate possible – Quick response times – Same element in active materials on electrolyte tanks limits ion cross contamination – Electrolyte can be recovered at end of project life – Heat extraction due to electrolyte prevents thermal runaway	– Low electrolyte stability and solubility limit energy density, and low specific energy limits use in non-stationary applications – Precipitation of V_2O_5 at electrolyte temperatures above 40°C can reduce battery life and reliability, although this can be managed – High cost of vanadium and current membrane designs – Unoptimized electrolyte flow rates can increase pumping energy requirements and reduce energy efficiency



Power duration diagram of some energy systems

2 The International Renewable Energy Agency (IRENA). ADVANTAGES AND DISADVANTAGES OF
3 VRFB ELECTRICITY STORAGE SYSTEMS: Kim, S., M. Vijayakumar, W. Wang, J. Zhang, B. Chen,
4 Z. Nie, F. Chen, J. Hu, L. Li, and Z. Yang, Chloride supporting electrolytes for all-vanadium redox flow batteries. Phys Chem Chem Phys, 2011. 13(40): p. 18186-93.

Major Components of Battery Storage Costs

CAPEX is the costs you will incur to buy, install and commission the battery safely. While CAPEX of newer technologies may be relatively high, it generally decreases over time as install base grows, supply chains expand and economies of scale are realized. CAPEX should also include permitting costs, civil works, and other installation costs beyond the DC batteries themselves.

O&M costs have both fixed and variable components. Fixed costs, for example, may include scheduled annual or bi-annual routine maintenance. Variable costs will typically vary with hours of operation or cycle count. And data costs are often overlooked: some lithium-ion manufacturers' product warranties require operators to collect and maintain detailed operating data.

Augmentation or replacement costs represent a large chunk of lithium ion battery project costs today, but they are notably absent from non-degrading technologies such as vanadium flow batteries. With every cycle, a lithium-ion battery's ability to hold charge degrades; to maintain battery capacity cells need to be replaced or added – a process called augmentation. This includes the cost of the new cells, the cost to swap them out, and the cost of any additional space.

End-of-life (EOL) costs may include include disassembly, transportation to a battery recycling facility and fees to safely dispose of lithium-ion cells. Some batteries have residual value when they reach the end of their useful life: vanadium electrolyte can be reused in a new battery, and NMC lithium ion batteries contain valuable metals that can be recovered and sold. Other chemistries like LFP have little residual value to offset EOL costs.

Efficiency Costs represent the cost of energy lost to round-trip efficiency (RTE). All batteries have an RTE less than 100%, but the figure varies across the range of available technologies available. This can dictate a battery's ideal uses; for example, a vanadium flow battery requires a higher profit per cycle compared to lithium because of its lower RTE, but has better cycling capabilities making it ideal for high throughput regulation services.

The Five Components of Levelized Cost of Storage (LCOS)

CAPEX	O&M	AUGMENTATION / REPLACEMENT	END OF LIFE	EFFICIENCY
Including battery costs, permitting, construction, installation and fire safety.	Including scheduled & unscheduled maintenance, and performance data monitoring & retention.	Includes ongoing costs to recover battery capacity lost to degradation.	Includes recycling, disposal and remediation costs, but also any residual value.	The cost of energy lost to charging & discharging inefficiencies.

VANADIUM FLOW BATTERIES v LITHIUM-ION BATTERIES

The Electrolyte Leasing Opportunity

VFB electrolyte is **32%** of total **VFB system cost**

The **opportunity** is to establish **Vanadium lease agreements** that will provide stable, long-term **revenue** streams and benefits to **Investors**

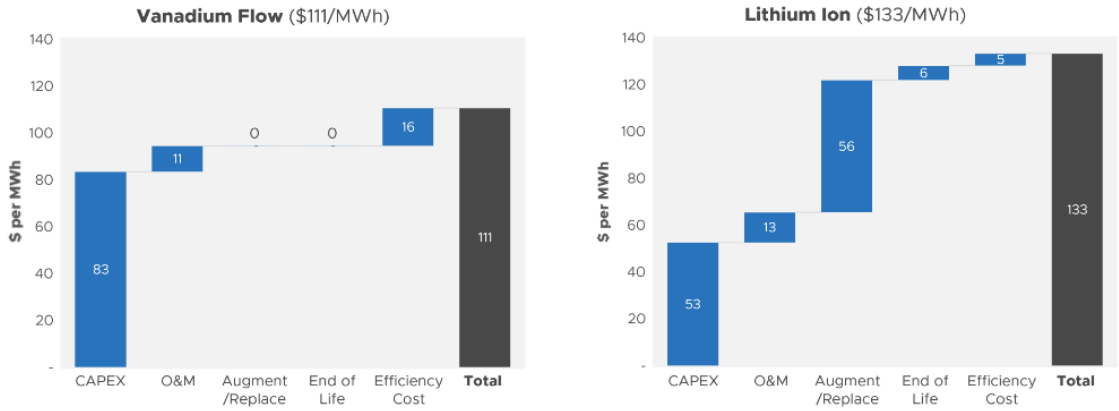
Making **Vanadium Flow Batteries**, **price competitive** with **Lithium-ion batteries**

By leasing the vanadium electrolyte, clients can access the benefits of vanadium flow batteries

Attribute	Lithium-Ion	Vanadium Flow Battery (VFB)
Duration	Short (<2h)	Long (6–8h+)
CAPEX	Lower upfront	Higher – but leasing model achieves parity
LCOS (Global Avg.)	~$131/MWh	~$111/MWh
Battery Life	7–10 yrs (3–7k cycles)	20+ yrs (12–20k+ cycles)
Recyclability	Poor	Excellent (99% electrolyte recovery)
Fire Risk	High (thermal runaway)	Zero (non-flammable electrolyte)

Comparing LCOS Components

High throughput / 40 year modelled scenario



How does it work?

Electrolyte Ownership & Leasing: A vanadium company, owns the vanadium electrolyte and leases it to the battery operator or developer.
Predictable Costs: Converts a large upfront cost into predictable operational expenses for battery owners.
Circularity and Sustainability: Maximizes the value of the vanadium electrolyte, which is a non-degrading and recyclable asset, promoting a more sustainable energy storage ecosystem.
Market Growth: Facilitates the widespread adoption of VFBs, supporting the transition to a renewable energy future.

The Five Components of Levelized Cost of Storage (LCOS)

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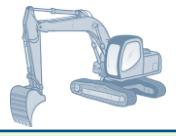

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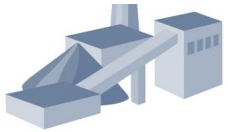
Concentrating



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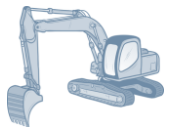

Dry Screen / Wet screen

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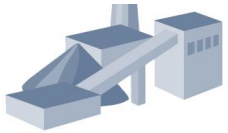
Flotation

Concentrating



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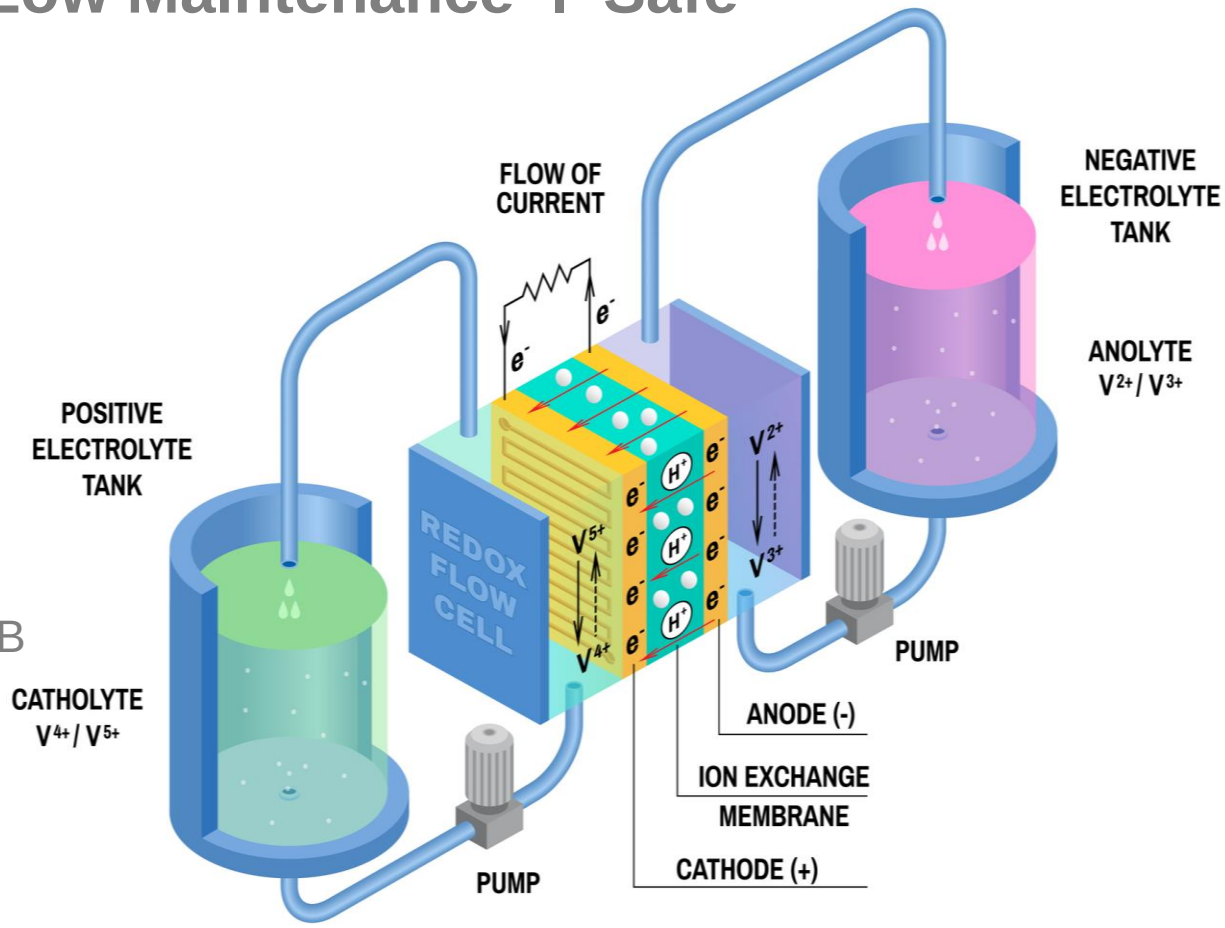
THE VANADIUM FLOW BATTERY (VFB)
LONG DURATION ENERGY STORAGE (LDES)

Infinite Life I High Output I Low Maintenance I Safe

- **PERFORMANCE:** consistent output, long battery life with low electrolyte degradation & infinite life cycle.
- **DESIGN:** efficient, scalable, stackable, virtually unlimited storage capacity with low maintenance requirements.
- **SAFETY:** no thermal runaway & electrolyte is non-flammable.
- **SUSTAINABILITY:** stackable cells, high recyclability of VFB components and electrolyte & reduced carbon emissions results in a smaller overall physical/environmental footprint
- **ECONOMICS:** initial investment < long term advantages



1 Refer Prospectus dated 14 October 2022, Section 4 and Supplementary Prospectus dated 21 October 2022 released to ASX on 9 December 2022

2 Everbright Securities, "Shared Energy Storage and VRFB Development", 18 August 2022

CORPORATE SNAPSHOT

CAPITAL STRUCTURE

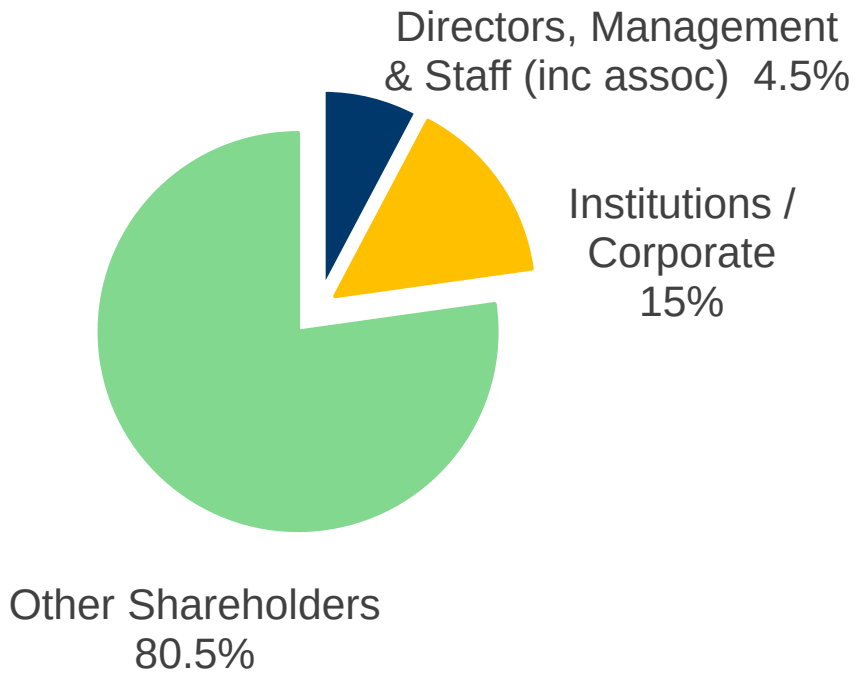
RVT	$8.8m	$13.43m	221.8m
ASX Code	Cash (as at 30/6/2025)	Market Cap (as at 11/8/2025)	Shares on Issue

PROJECT PORTFOLIO

Richmond – Julia Creek Vanadium Project

The Richmond – Julia Creek Vanadium Project in North Queensland is the world's largest non-titanomagnetite vanadium deposit. RVT's vanadium product is highly suitable for direct electrolyte production, with testing for this currently underway. MLA 100408

KEY SHAREHOLDERS



(L-R) Chair, Brendon Grylls & Non-Executive Director, Dr Shaun Ren visiting site during 2023 drilling program at Lilyvale Station, Richmond

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 rates[1]

Vanadium consumption growth rate for VFBs in Australia is forecast to grow at 35-50%pa

Feasibility & Environmental Approvals underway

Pre-Feasibility Study completed in 2021 - at US$9.60/lb V_2O_5, project generates NPV10 of A$613M with IRR of 38% and payback of 3.2 years[1]

Bankable Feasibility Study underway and Environmental Impact Statement submitted

Timing

Regulatory approvals and final investment decision expected in 2026perfect yee

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] Based on current market intelligence and AEMO's 2024 Integrated System Plan, management estimates that if Vanadium Flow Batteries secure between 5% and 30% of forecast dispatchable energy storage in Australia by 2050, the total vanadium stock in service would need to grow at a compound rate of approximately 35% to 50% per annum from current levels. This equates to between ~100,000 tonnes and ~1.3 million tonnes of vanadium deployed in electrolyte, depending on market share and electrolyte energy density. These figures are indicative and subject to change based on market penetration, technology advances, and policy settings

CONTACT US

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Executive Chair

Monique Stevens

Company Secretary & Head of Operations

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Richmond Vanadium Technology

@richvanadium

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

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2. Renewable Energy Storage Roadmap, CSIRO
3. Hydrogen storage for a net-zero carbon future, The Oxford Institute for Energy Studies
4. US Department of Energy, 2020, DOE OE Global Energy Storage Database
5. Clean Energy Council, The-future-of-long-duration-energy-storage, June 2024
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