



TECHNOLOGY
METALS AUSTRALIA LIMITED

VANADIUM FOR A CLEANER FUTURE

**RIU Resurgence Conference
23 November 2022**

ASX:TMT



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Competent Person's Statement

The information in this report that relates to Exploration Results are based on information compiled by Mr John McDougall. Mr McDougall is the Company's Exploration Manager and a member of the Australian Institute of Geoscientists. Mr McDougall has sufficient experience relevant to the styles of mineralisation and types of deposits which are covered in this report and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (**JORC Code**). Mr McDougall consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources is based on information compiled by Mr Matthew Clark. Mr Clark is a Senior Resource Geologist of CSA Global Pty Ltd and is a Member of the Australasian Institute of Mining and Metallurgy. Mr Clark has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mr Clark consents to the disclosure of the information in this announcement in the form and context in which it appears.

The information that relates to Ore Reserves is based on information compiled by Mr Ross Cheyne of Orelogy who takes overall responsibility for the Report as Competent Person. Mr Cheyne is a Fellow of The Australasian Institute of Mining and Metallurgy and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as Competent Person in terms of the JORC (2012 Edition). The Competent Person, Ross Cheyne has reviewed the Ore Reserve statement and given permission for the publication of this information in the form and context within which it appears.

The information in this report that relates to the Processing and Metallurgy for the Murchison Technology Metals project is based on and fairly represents, information and supporting documentation compiled by Mr Brett Morgan, a full-time employee of Technology Metals Australia. Mr Morgan is a Member of The Australasian Institute of Mining and Metallurgy and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as Competent Person in terms of the JORC (2012 Edition). The Competent Person, Brett Morgan consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

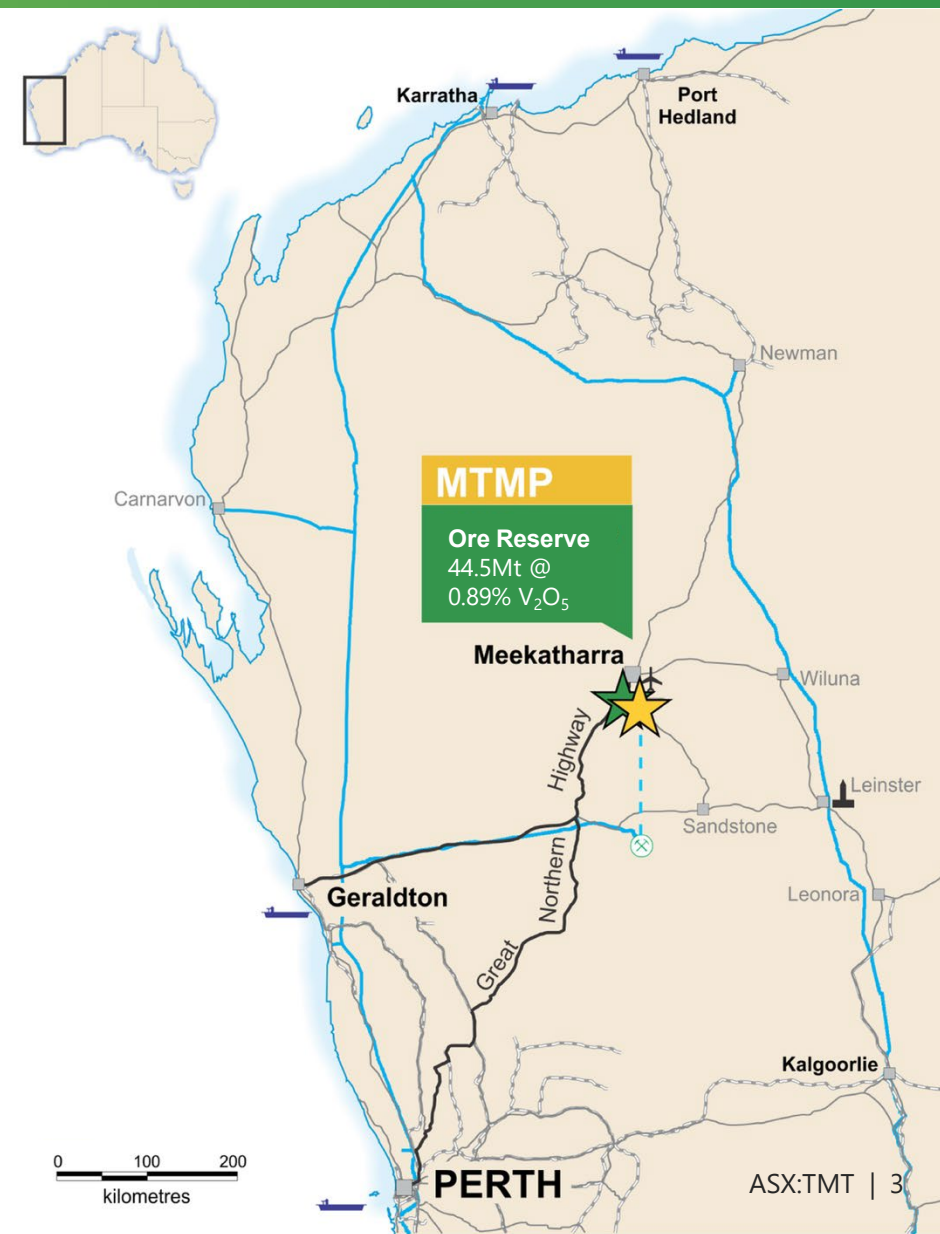
Pursuant to LR-5-19-1 production target and financial forecast: Refer ASX Release - 21 August 2019 for full details of the DFS: Financial Metrics at long term historical average price of US\$8.78/lb V2O5.

Pursuant to LR-5-19-2 production target and financial forecast: The material assumptions as per the ASX release on 21 August 2019 continue to apply and have not materially changed.

Refer to ASX Releases on 5 August 2022 for full details of global Murchison Technology Metals Project Ore Reserve, and Yarrabubba Vanadium and Ilmenite Ore Reserves.

Vanadium from a Tier 1 jurisdiction

- **Ready access** to key infrastructure
- **Close to ports** via existing sealed highways
- **Strong support** for value-adding downstream processing (vanadium electrolyte and/or ferrovandium)
- Supportive government, **high ESG standards**
- Perfectly placed to **support the global energy transition**
- **Numerous near-term catalysts** over the next few months



Strong, authentic and reliable corporate citizen



Working to support community projects, with a focus on Youth Education and Engagement



Regular consultation with the Yugunga-Nya Traditional Owners to build long-term relationships



Employment, training and business opportunities for the regional community

Our Key Values:

- People and Community
- Collaboration
- Honesty and Trust
- Protecting the Future
- Minimal Environmental Impacts
- Leaving a positive legacy

EXPERIENCED BOARD & MANAGEMENT



Michael Fry Non-Exec Chairman

Michael holds a Bachelor of Commerce degree from the University of Western Australia, is a Fellow of the Financial Services Institute of Australasia, and is a past member of the Australian Stock Exchange. Mr. Fry has extensive corporate and commercial experience, financial and capital market knowledge and a background in corporate treasury management.



Ian Prentice Managing Director

Ian holds a Bachelor of Science (Geology) from the University of Western Australia and has over 30 years experience in the global mining industry, spanning exploration, development and open cut and underground mining. Ian is a Member of the Australasian Institute of Mining and Metallurgy.

David English Chief Operating Officer

David is a mining professional with over 30 years operations and project development experience working in the Western Australian resources industry.

Mr English was General Manager Operations at the Windimurra Vanadium Project from February 2008 until February 2010 involved in the process of re-developing the project.

Elisha Civil Chief Financial Officer

Elisha is a Chartered Accountant with over 20 years' experience in the resources sector including General Manager Finance at Regis Resources, and Group Manager Finance and Tax at Fortescue Metals Group.

Ms Civil holds an MBA from the University of Western Australia, and a Bachelor of Commerce from Murdoch University.



Jacqueline Murray Non-Exec Director

Jacqueline is a Partner at Resource Capital Funds (RCF) and has worked within the mining industry for over 20 years.

Ms. Murray joined RCF in 2012 after working in business analysis and improvement roles with BHP Billiton. Prior to this she worked in various geotechnical engineering roles in underground and open pit operations within BHP Billiton and WMC Resources.



Dr. Carmen Letton Non-Exec Director

Carmen is a mining engineer and mineral economist with 35 years of global experience and a diverse background in senior leadership roles in operations, business improvement and operational excellence.

Dr. Letton was most recently the Head of Resource Development and Life of Asset Planning (Asset Strategy Development) at Anglo American, having previously worked at BHP Billiton, Rio Tinto, Newmont, Newcrest and a number of other international mining companies.

Sonu Cheema Company Secretary

Sonu is a Partner at Cicero Group with over 10 years' experience working with public and private companies in Australia and abroad. Roles and responsibilities held by Mr Cheema include completion and preparation of management and ASX financial reports, investor relations, initial public offers, mergers and acquisitions, management of capital raising activities and auditor liaison.

John McDougall Exploration Manager

John holds a Bachelor of Science with Honours (Geology) from the University of Tasmania and has over 20 years experience in mineral exploration, with iron ore, base and precious metals experience.

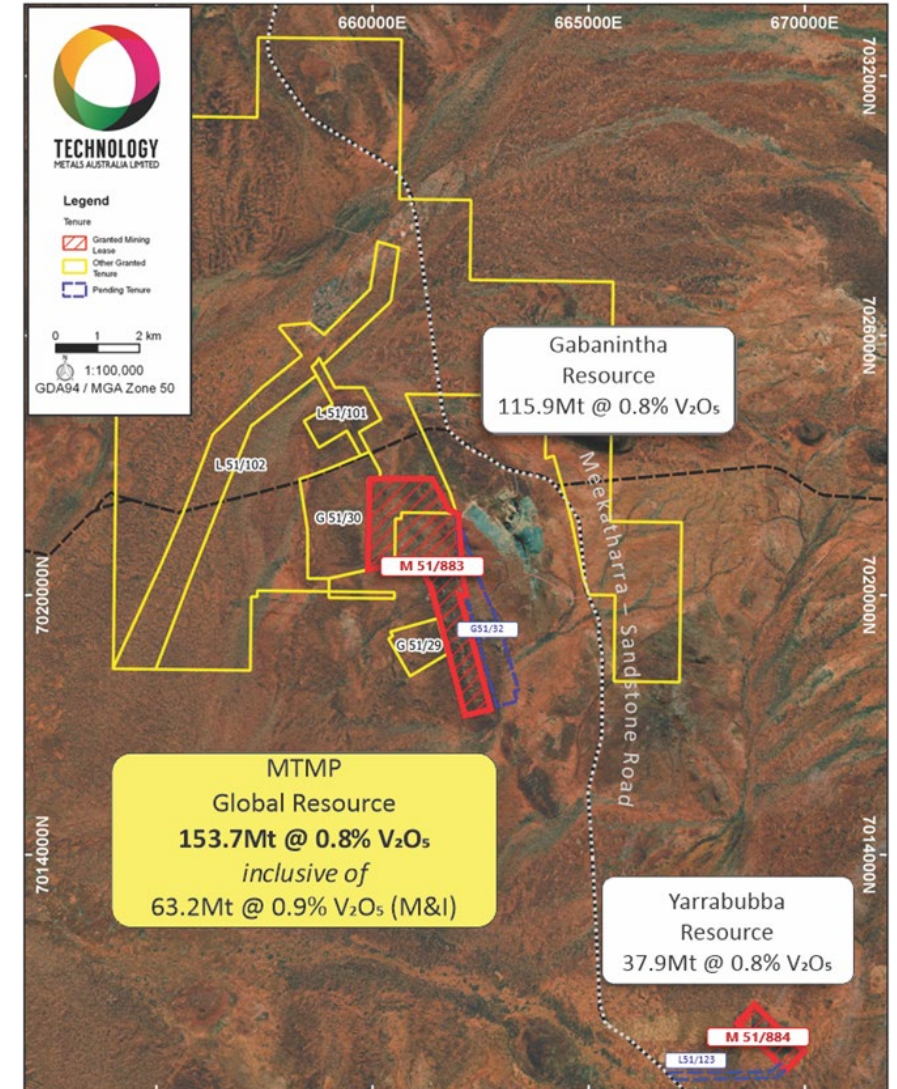
John has been managing the geological data acquisition at Gabanintha and Yarrabubba since February 2017.

MURCHISON TECHNOLOGY METALS PROJECT



One of World's largest vanadium projects just got bigger

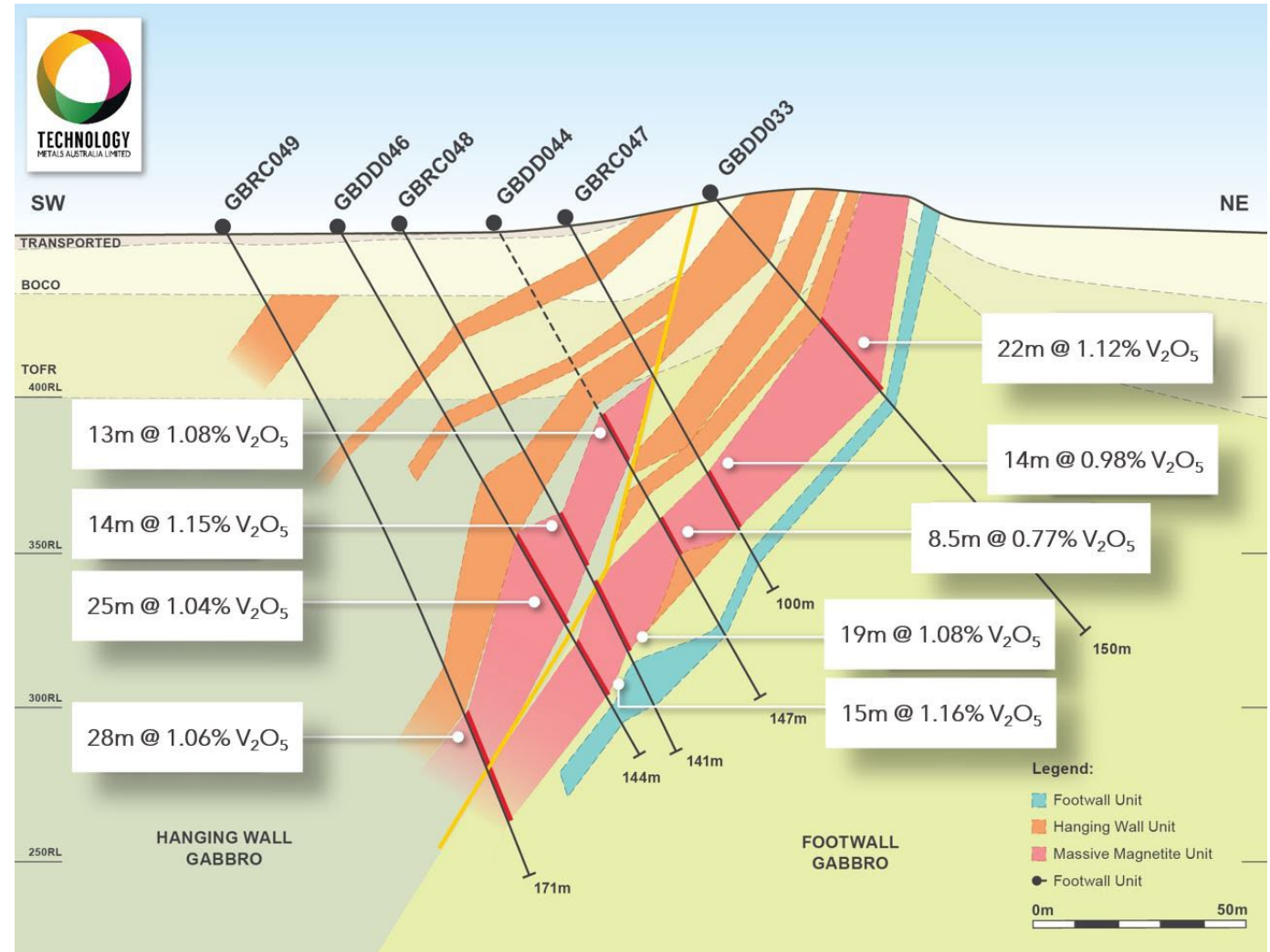
- Reserve of 44.5Mt @ 0.89% V_2O_5 delivers +25 year life
- Traditional open pit mining, conventional processing
- Production capacity +12,500tpa V_2O_5 and ~100,000tpa ilmenite*
- **November 2022 Global Resource Upgrade supports growth in Ore Reserve and Extend Mine Life**



*Average production for the first approximately nine years

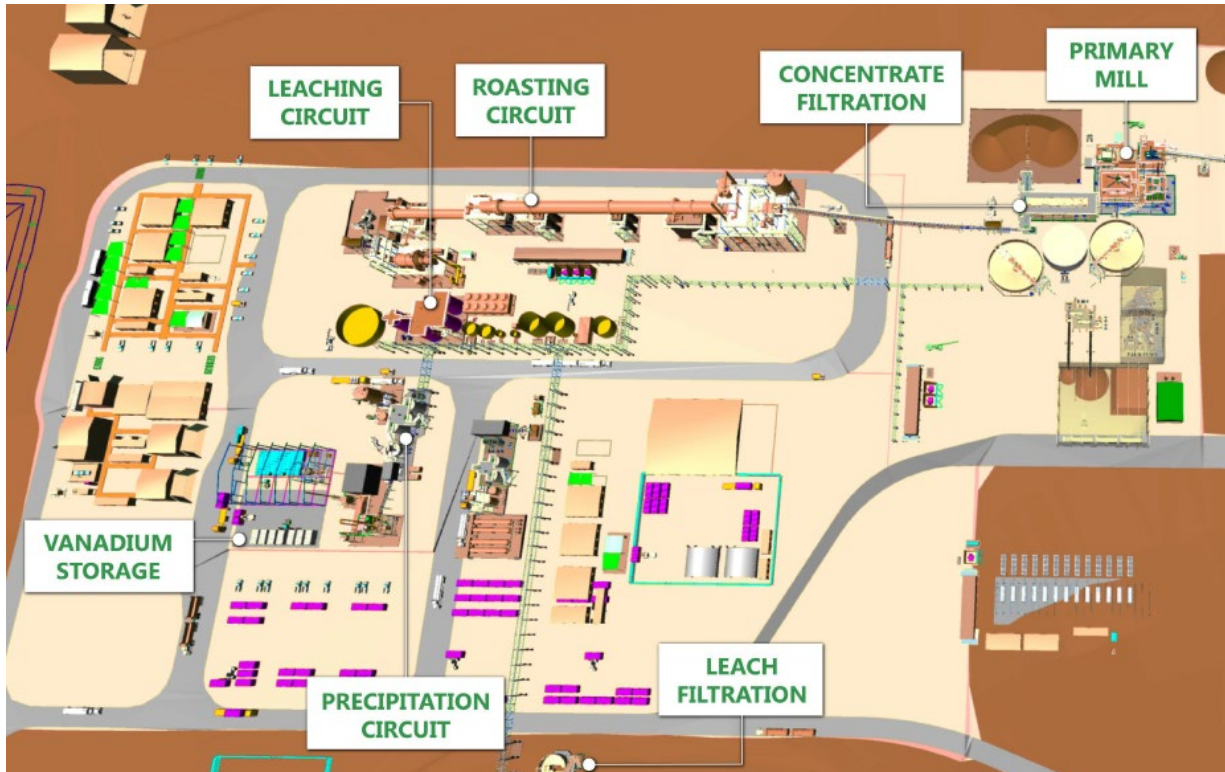
CRITICAL ADVANTAGES SET MTMP APART

- **High quality orebody** with high proportion of fresh ore close to surface
- Thick, continuous high grade ore zones
- **Industry leading recovery at coarse grain size** for direct feed to kiln
- Integrated mine to product operation
- Reliable **low-cost energy** source
- **Keys to success – Imminent delivery of the Implementation Study**



PROGRESSION OF IMPLEMENTATION PHASE

- Commercial competitive tendering process closing
- Enabling completion of bankable financial model
- Supporting project finance negotiations



Final plant design locked in for tendering purposes



Project team undertakes site visit to the MTMP with tenderers

VANADIUM REDUCES EMISSIONS VIA STEEL ALLOYS AND BATTERIES

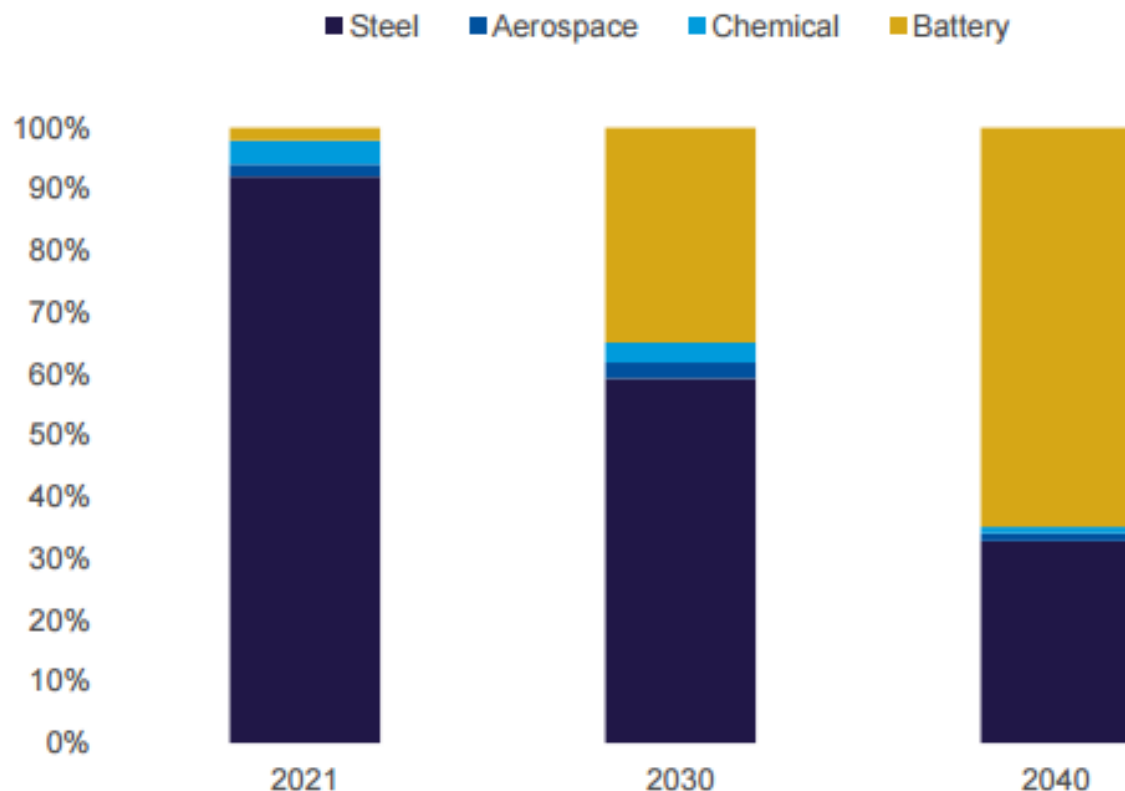
- Iron - Steel sector one of the largest CO₂ emitters
- **Adding vanadium** reduces steel weight, increases capacity and reduces steel requirement

= CO₂ Savings

- **Vanadium redox flow batteries** (VRFB) ideal for time-shifting large amounts of energy for later use (long duration energy storage)
- Increases use of renewables, reducing fossil fuels

= CO₂ Savings

Vanadium demand by end use – 2021, 2030, 2040, by percentage



- The cumulative share of energy storage using VRFB will rise to 7% by 2030, and to nearly 20% by 2040.
- With a current market of ~110 kt V in 2022, the demand for vanadium will double by 2032 owing more than 90% of this growth to VRFBs.
- **VRFBs will consume more than 65% of vanadium demand in 2040.**

Source: CRU, 17 November 2022

Vanadium is one of the 35 critical minerals essential to USA economic and national security



PRIMARY PRODUCERS

South Africa: 8%
Brazil: 6%
MTMP: 6%

CO-PRODUCT PRODUCERS

Russia: 16%
China: 62%
North America: 3%

2021 Estimates
Source: TTP Squared Inc

- Current largest vanadium sources are co-product producers in China 62% and Russia 16%

- MTMP to supply 6% of the world market

Russia represented 16% of world production in 2021*

- Australia is part of the USA led Minerals Security Partnership

"... ongoing and secure supplies of critical minerals will be crucial to the modern renewable technologies that will ultimately help our two countries, and the world, achieve our net-zero ambitions."

**The Hon Madeleine King MP,
12 July 2022**

* Including Russian direct production and European processing of Russian sourced slag

STRONG DOWNSTREAM PARTNERSHIPS



Technology Metals team with LE System team at their Namie Plant in Japan

- TMT and LE System investigating vanadium electrolyte production in Australia
- Discussing offtake of vanadium into Japan



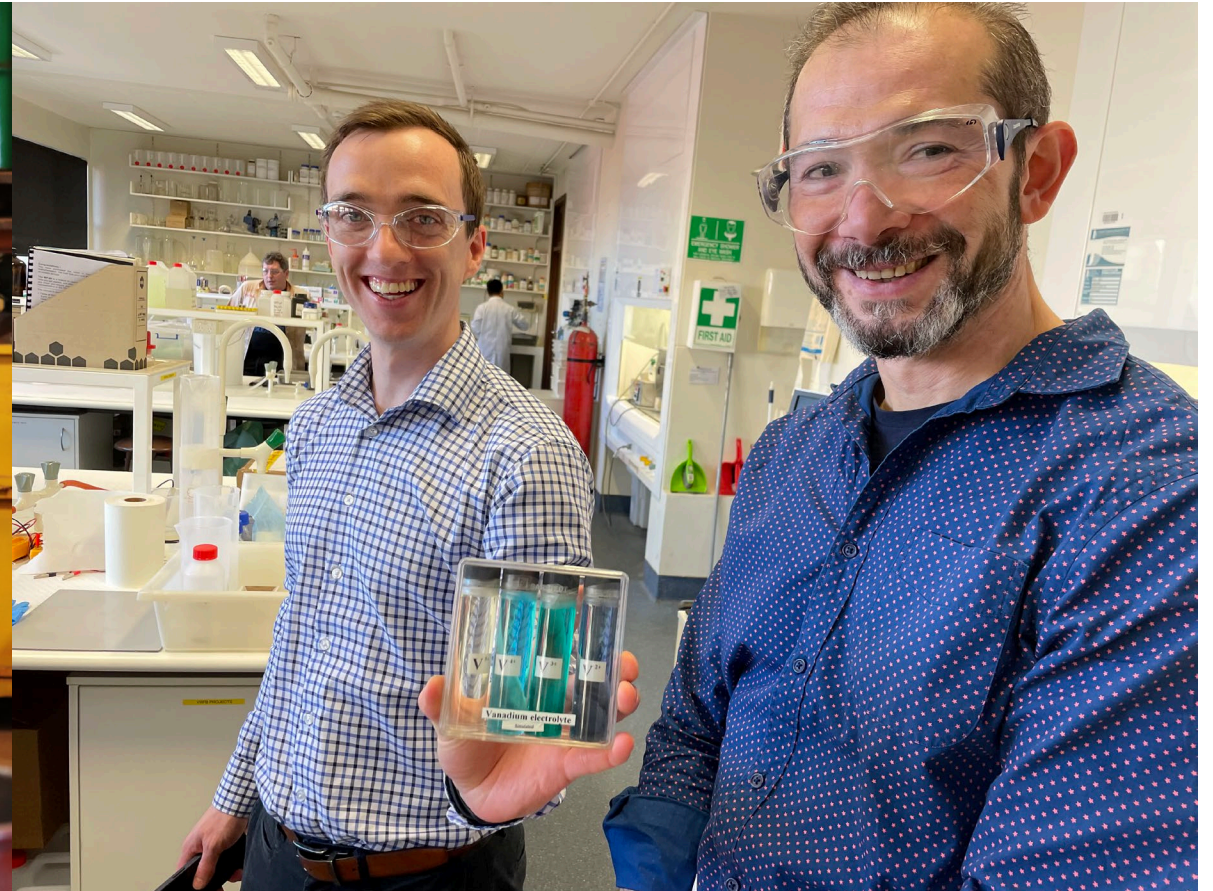
Example of Tata Steel's "Tiscon" high strength rebar

- Discussing offtake of vanadium and technical collaboration on downstream vanadium products
- Tata Steel potential investment into TMT / MTMP

Key investor in the **FBICRC's "Development of Electrolyte Project"** ways to enhance the performance of VRFBs



Checking the magnetite concentrate for testwork program



TMT Senior Metallurgist with Prof. Aleks Nikoloski at Murdoch University

Capital Structure

TMT

ASX Code

\$15.1m

Cash

(as at 30 September 2022)

\$74.5m

Market Cap

(As at 22 November 2022)

209.8m

Shares on Issue

16.2m

Unlisted Options¹

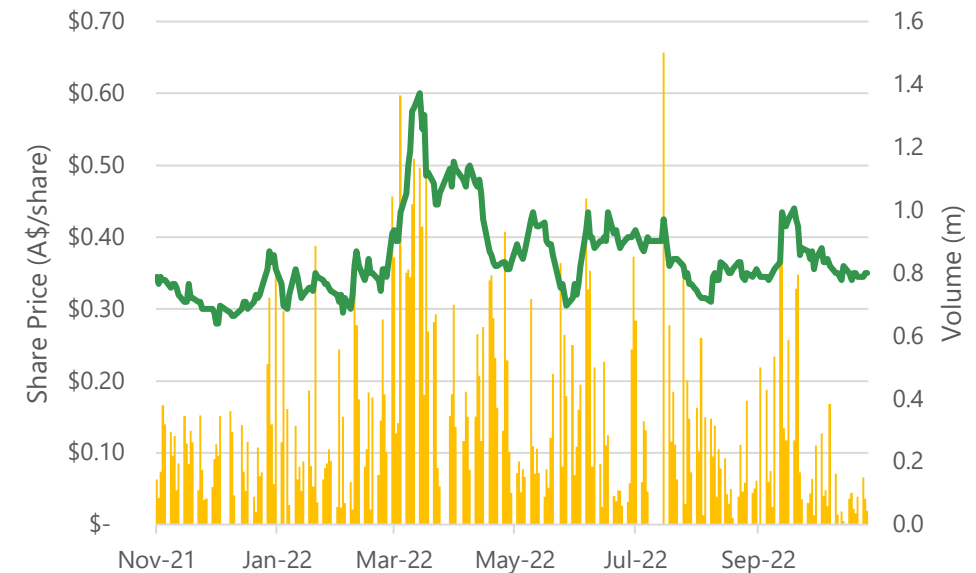
(Various exercise)v

5.52m

Performance Rights²

Holder Name	Holding (%)
Resource Capital Fund VII L.P.	17.2%
BNP Paribas Nominees	10%
Standard Pastoral Company	6.7%
Retzos Group	5.2%
TOTAL TOP 20	57.7%
Board and Management holdings (fully diluted)	9.4%

*Based on issued capital as at 21 November 2022



¹ Includes 14.35m director and employee options – 3.9m vested, balance vest on project development hurdles

² 50% vest on MTMP FID, 50% vest on first production

POISED FOR CONSTRUCTION IN 2023

Significant cash at bank A\$15.1m¹

Fully funded to FID
Able to place long
lead orders

A\$74.5m
Market cap
As at 22 November 2022

Supportive shareholders Top 20 hold 56%

Resource Capital
Funds 17.2%
Early believers in
battery metals²

Board and
management 9.4%³

Execution focused team

Experienced board
Michael Fry
Chair

Jacqueline Murray
Non-Exec Director

Dr. Carmen Letton
Non-Exec Dir

Sonu Cheema
Co Sec

Ian Prentice
Managing Director

David English
Chief Operating Officer

Elisha Civil
Chief Financial Officer

Quality Partners



WA Government



Australian Government

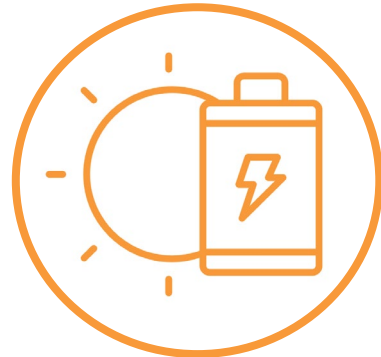


1. At as 30 September 2022
2. Examples include investments in tantalum (Global Advanced Metals), lithium (Talison Lithium), rare earths (Molycorp), nickel (Talon Metals)
3. As at 14 October 2022, fully diluted
4. Includes 14.35m director and employee options – 3.9m vested, balance vest on project development hurdles
5. 50% vest on MTMP FID, 50% vest on first production



Globally Significant Project

- Project with outstanding economics and long life
- Western Australia a Tier one mining jurisdiction
- Excellent infrastructure and access



Critical Minerals for a Cleaner Future

- Vanadium is on the Critical Minerals List in Europe, United States and Australia
- Use of vanadium in steel can reduce environmental burden and CO₂ emissions
- Strong demand for VRFBs for long duration energy storage solutions



Strong Experienced Team to Deliver

- Assembled high-quality experienced core team who have delivered major projects
- Strong focus on a development strategy that will maximise shareholder value



Strategic Investor and Partners

- Backing from RCF VII provides long-term project development support
- Building robust relationships with international partners, including LE System and Tata Steel



TECHNOLOGY
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APPENDICES



Environment

- Baseline environmental studies (flora, fauna, water, waste, air quality, GHG) completed
- Environmental Review Document ("ERD") submitted to the state's Environmental Protection Authority (EPA) for review and approval



Native Title/Heritage

- Five heritage surveys conducted since 2018
- Negotiation protocol in place; first negotiation meeting held late October
- First community briefing sessions conducted in November to provide updates on project development



Governance

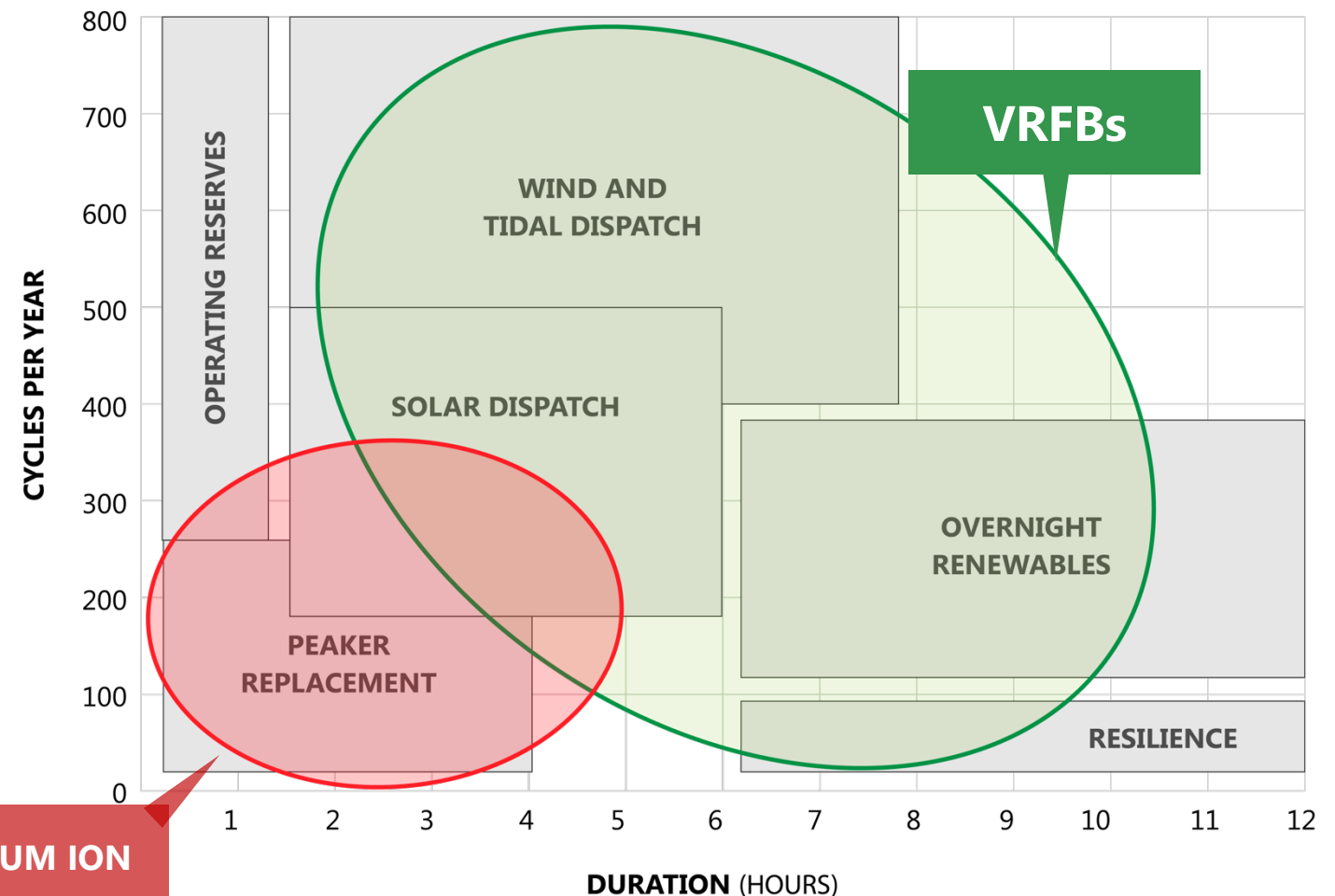
- Majority independent Directors – gender balance at Board level
- Diversity of personnel at every level of the Company
- Detailed Corporate Governance Plan in place informing policies and charters

VANADIUM REDOX FLOW BATTERIES PART OF THE SOLUTION

Cost efficiently time-shift
large amounts of
previously generated
energy for later use

“Vanadium RFBs are ‘**state-of-the-art**’
due to comparatively high energy
density, low maintenance costs and
long operational lifetimes.”

The Future of Energy Storage,
An Interdisciplinary MIT Study, 2022



WHY VANADIUM BATTERIES?



SAFETY



SUSTAINABILITY



LONG LIFE



NO DEGRADATION



LOW ENERGY COST



EASY TO EXPAND CAPACITY



RELIABLE PERFORMANCE



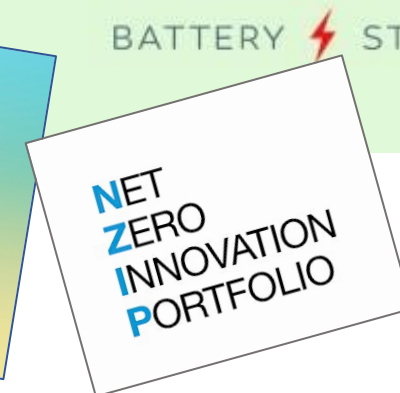
SINGLE CHEMICAL ELEMENT



Sumitomo Electric's vanadium redox flow batteries deployed at a San Diego Gas and Electric substation in Bonita, San Diego, California. These flow batteries provide 2 megawatts and 8 megawatt-hours of energy to California's grid — enough to power about 1,000 homes for up to four hours. Source: The San Diego Union-Tribune, 28 January 2021

GLOBAL SUPPORT FOR LONG-DURATION ENERGY STORAGE

- In the US, energy storage technologies offering between 10 and 24-hour storage duration will become eligible for US\$349 million government funding
- A hybrid microgrid using VRFB and zinc hybrid cathode battery technology first to receive US\$31 million funding from the state of California
- The US *Infrastructure Investment and Jobs Act*, under which this funding program falls, and the *Inflation Reduction Act* offer incentives for upstream supply of clean energy and downstream deployment of solar, wind and batteries respectively
- Invinity Energy Systems won £700,000 of funding as part of the UK's £1bn Net Zero Innovation Portfolio for feasibility study into a 40 MWh Invinity Vanadium Flow Battery (VFB) at one of the UK's largest co-located solar and energy storage projects.



VANADIUM IN STEEL ALLOYS REDUCES CO₂ EMISSIONS

Iron - Steel sector one of the largest CO₂ emitters

- 1 tonne steel = 1.85 tonne CO₂ released
- Approximately 8% global CO₂ emissions from steel in 2020
- Inclusion of vanadium enables higher quality, stronger steel, lowering emissions
- Chinese industry reduced 2019 CO₂ emissions by 1.5% by including vanadium in rebar¹



The benefits of upgrading to high-strength vanadium steel



1 - Santos et al, Texas A&M University

MTMP RESERVE

Deposit	Ex-Pit Ore				Magnetic Conc.		Non-Magnetic Conc.		Rec. V ₂ O ₅	Rec. Ilmenite	Waste	Total
	Mt	V ₂ O ₅ %	TiO ₂ %	Mass Yield	Mt	V ₂ O ₅ %	Mt	TiO ₂ %	M lb	kt	Mt	Mt
Yarrabubba Probable	15.88	0.87%	10.0%	44.4%	7.04	1.61%	8.84	12.35%	202.7	1132.6	110.1	126.0
Yarrabubba Total	15.88	0.87%	10.0%	44.4%	7.04	1.61%	8.84	12.35%	202.7	1132.6	110.1	126.0
Gabanimtha Proven	1.12	0.95%		69.8%	0.78	1.30%			18.1		154.5	183.1
Gabanimtha Probable	27.48	0.90%		57.1%	15.69	1.31%			369.4			
Gabanimtha Total	28.60	0.91%	10.7%	57.6%	16.47	1.31%			387.5	0.0		
Global MTMP Total	44.48	0.89%	10.5%	52.9%	23.52	1.40%	8.84	12.35%	590.3	1132.6	264.6	309.1

Source: Orelogy, as at 5 August 2022

MTMP GLOBAL RESOURCE



Classification	Material	Mt	V ₂ O ₅ %	Fe %	Al ₂ O ₃ %	SiO ₂ %	TiO ₂ %	LOI %	P %	S %
Measured (Yarrabubba)	Massive	4.4	1.1	48.1	5.5	7.3	12.4	-0.4	0.01	0.3
	Disseminated	1.5	0.6	30.0	10.8	23.4	7.7	2.5	0.01	0.2
Measured (Gabanintha)	Massive	5.1	1.1	46.9	5.7	8.4	12.1	-0.2	0.01	0.3
	Disseminated	1.1	0.8	36.4	7.9	19.6	9.0	0.5	0.01	0.2
Measured	Massive + disseminated	12.1	1.0	44.3	6.5	10.9	11.4	0.1	0.01	0.2
Indicated (Yarrabubba)	Massive	8.0	1.1	48.1	5.4	7.1	12.5	0.0	0.01	0.3
	Disseminated	6.9	0.6	28.4	12.5	25.2	7.2	2.6	0.02	0.3
Indicated (Gabanintha)	Massive	19.5	1.1	48.9	5.2	6.2	12.8	-0.1	0.01	0.2
	Disseminated	16.7	0.6	27.3	13.3	26.7	7.0	3.0	0.03	0.2
Indicated	Massive + disseminated	51.2	0.9	39.0	8.9	15.6	10.1	1.3	0.02	0.2
Measured plus Indicated	Massive + disseminated	63.2	0.9	40.0	8.4	14.7	10.4	1.1	0.02	0.2
Inferred (Yarrabubba)	Massive	5.7	1.1	47.4	5.6	7.8	12.3	0.1	0.01	0.3
	Disseminated	11.4	0.6	27.9	12.6	25.8	7.2	2.0	0.02	0.4
Inferred (Gabanintha)	Massive	36.5	1.1	46.7	6.0	8.3	12.3	0.4	0.01	0.2
	Disseminated	36.9	0.5	26.6	12.9	27.6	6.9	3.4	0.03	0.3
Inferred	Massive + disseminated	90.5	0.8	36.2	9.6	18.3	9.5	1.8	0.02	0.2
TOTAL	Massive + disseminated	153.7	0.8	37.7	9.1	16.8	9.8	1.5	0.02	0.2

Source: CSA Global, as at 7 November 2022

*Notes:

- Mineral Resources are reported in accordance with the JORC Code (2012 Edition).
- Mineral Resources were estimated within constraining wireframe solids using a nominal 0.9% V₂O₅ lower cut-off grade for the massive magnetite zones and using a nominal 0.4% V₂O₅ lower cut-off grade for the banded and disseminated mineralisation zones.
- Mineral Resources are quoted from all classified blocks within the wireframe solids above a lower cut-off grade of 0.4% V₂O₅.
- Differences may occur due to rounding. Yarrabubba Measured and Indicated Mineral Resources are reported above an open pit optimised pit shell. Inferred Mineral Resources are reported to a lower RL limit of 250 mRL. Gabanintha Measured and Indicated Mineral Resources are reported above a lower RL limit of 240 to 280 mRL that approximates the Ore Reserve pit shells. Inferred Mineral Resources are reported to a lower RL limit of 170 mRL.