



**TECHNOLOGY**  
METALS AUSTRALIA LIMITED

**ASX Announcement**

**22 June 2022**

ACN: 612 531 389

T: 08 6489 1600

F: 08 6489 1601

E: [investors@tmtlimited.com.au](mailto:investors@tmtlimited.com.au)

Suite 9, 330 Churchill Avenue,  
Subiaco WA 6008

[www.tmtlimited.com.au](http://www.tmtlimited.com.au)

**Directors**

Michael Fry:  
**Chairman**

Ian Prentice:  
**Managing Director**

Jacqueline Murray:  
**Director**

Sonu Cheema:  
**Director and Company Secretary**

**Issued Capital**

209,824,557 ("TMT") Fully Paid  
Ordinary Shares

16,150,000 – Unquoted Options –  
various exercise prices and dates

5,525,000 Performance Rights

**ASX Code: TMT**

**FRA Code: TN6**



## TMT TO PARTICIPATE AT 2022 GOLD COAST INVESTMENT SHOWCASE

Technology Metals Australia Limited (ASX: **TMT**) (**Technology Metals, or the Company**), is pleased to announce its participation at the Gold Coast Investment Showcase on 22 and 23 June 2022. Managing Director, Ian Prentice, will present at the conference on the Company and recent Murchison Technology Metals Project updates to the investment community. A copy of the investor presentation follows.

Since 2007 the Gold Coast Investment Showcase has built an impressive reputation of providing a unique environment for some of Australia's most successful and exciting ASX listed companies to engage up-front with investors.



The Company invites shareholders and investors, if unable to attend the conference in person, to follow the link below to watch the presentation.

Event: **2022 Gold Coast Investment Showcase - Thursday Session 2**

Date: **23 June 2022**

Timeslot: **11:45 AM Brisbane Time**

Registration Link: [Webinar Registration - Zoom](#)

This announcement has been authorised by the Board of Technology Metals Australia Limited.

*For, and on behalf of, the Board of the Company,*

Ian Prentice  
**Managing Director**  
**Technology Metals Australia Limited**



**TECHNOLOGY**  
METALS AUSTRALIA LIMITED

# Technology metals for a cleaner future

Gold Coast Investment Showcase  
June 2022



ASX:TMT

# Disclaimer

## Disclaimer

This presentation has been prepared by Technology Metals Australia Limited ("Company"). It does not purport to contain all the information that a prospective investor may require in connection with any potential investment in the Company. You should not treat the contents of this presentation, or any information provided in connection with it, as financial advice, financial product advice or advice relating to legal, taxation or investment matters.

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Nothing in this material should be construed as either an offer to sell or a solicitation of an offer to buy or sell securities. It does not include all available information and should not be used in isolation as a basis to invest in the Company.

## Future matters

This presentation contains reference to certain intentions, expectations, future plans, strategy and prospects of the Company.

Those intentions, expectations, future plans, strategy and prospects may or may not be achieved. They are based on certain assumptions, which may not be met or on which views may differ and may be affected by known and unknown risks. The performance and operations of the Company may be influenced by a number of factors, many of which are outside the control of the Company. No representation or warranty, express or implied, is made by the Company, or any of its directors, officers, employees, advisers or agents that any intentions, expectations or plans will be achieved either totally or partially or that any particular rate of return will be achieved.

Given the risks and uncertainties that may cause the Company's actual future results, performance or achievements to be materially different from those expected, planned or intended, recipients should not place undue reliance on these intentions, expectations, future plans, strategy and prospects. The Company does not warrant or represent that the actual results, performance or achievements will be as expected, planned or intended.

## 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 Aaron Meakin. Mr Aaron Meakin is a Principal Consultant of CSA Global Pty Ltd and is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr Aaron Meakin 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 Aaron Meakin consent 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 Daniel Grosso an employee of CSA Global Pty Ltd. Mr Grosso takes overall responsibility for the Report as Competent Person. Mr Grosso 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, Daniel Grosso has reviewed the Ore Reserve statement and given permission for the publication of this information in the form and context within which it appears.

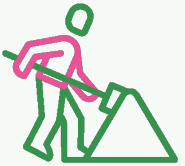
The information in this report that relates to the Processing and Metallurgy for the Yarrabubba and Gabanintha projects is based on and fairly represents, information and supporting documentation compiled by Mr Brett Morgan a full-time employee of Technology Metals Australia.. Mr Morgan is a Member of 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 which he is undertaking, to qualify as a 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.

# Why invest in TMT?

World class critical minerals in a Tier 1 jurisdiction



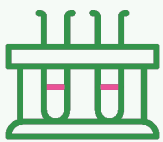
## Murchison Technology Metals Project

- Large, long-life high purity vanadium production
- Development Decision expected Q4 2022



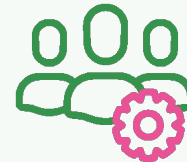
## Globally significant project

- Critical to energy storage & emissions reduction
- 7% of global production
- Strategically important alternate source to China / Russia



## Part of the future energy solution

- MoU to develop Australian electrolyte sector
- Quality Japanese partner, LE System



## Quality management team

- Experienced Board & Management team
- Expertise in financing, building & operating mines



# Corporate overview

## Capital Structure



**TMT**  
ASX Code

**\$19.1m**  
Cash  
(as at 31 March 2022)

**\$70m**  
Market Cap  
(As at 21 June 2022)

**209.8m**  
Shares on Issue

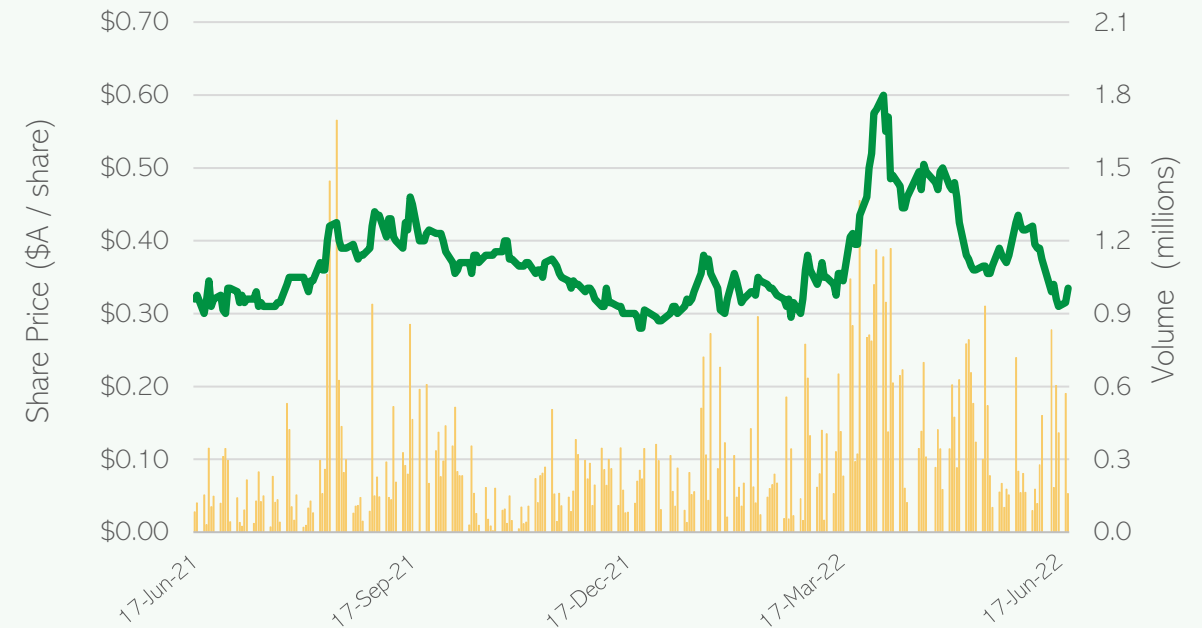
**16.2m**  
Unlisted Options<sup>1</sup>  
(Various exercise)

**5.52m**  
Performance Rights<sup>2</sup>

### Resource Capital Fund VII L.P. cornerstone shareholder

Holder Name	Holding (%)
Resource Capital Fund VII L.P.	17.7%
BNP Paribas Nominees	7.9%
Great Southern Flour Mills	6.7%
Retzos Group	5.2%
<b>TOTAL TOP 20</b>	<b>55.5%</b>
Board and Management holdings (fully diluted)	7.9%

\*Based on issued capital as at 21 June 2022



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

<sup>2</sup> 50% vest on MTMP FID, 50% vest on first production

# 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.



**Dave 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.



**Sonu Cheema**  
Non-Exec Dir/CoSec

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.



**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.

Mrs 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.

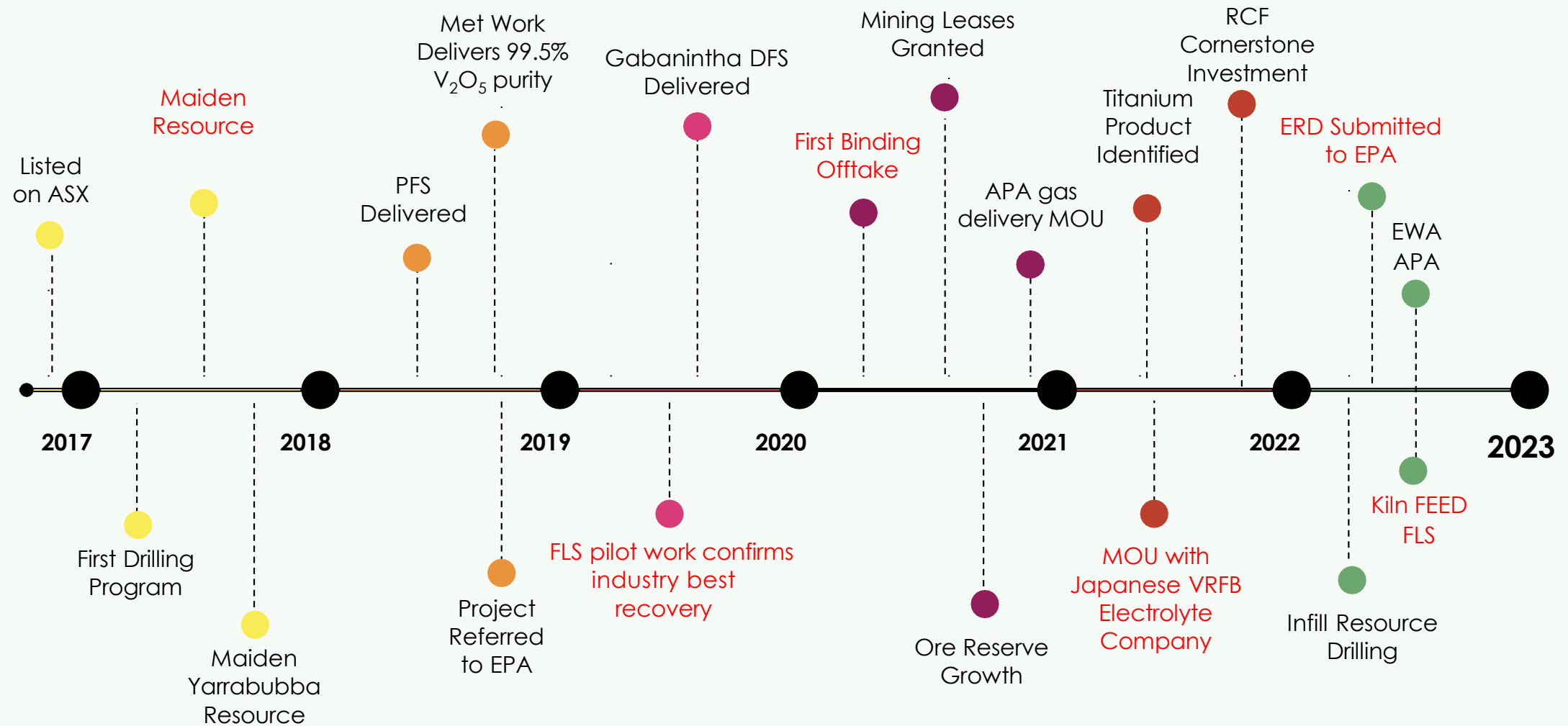


**John McDougall**  
Exploration Manager

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.

# Track record of delivery





# Environment, social & governance

Building a globally relevant resources company with a focus on emissions reduction



## Environment

- Constructive consultation with WA EPA supporting progress on the GVP ERD.
- Early engagement with Traditional Owners and Pastoralists to minimise impacts.
- Promote energy efficiency and minimise water usage.
- Policy of mitigation, minimisation and rehabilitation.



## Social / Community

- Policy in place to support local procurement and employment wherever practical.
- Support community events and activities – developing a social licence to operate.
- Generate training, business and work opportunities for Traditional Owners.
- Pursue downstream processing options to ensure value add and skills development.



## Governance

- Instilling a culture of high ethical standards throughout the group and its activities.
- Aim to always operate in a safe and respectful manner.
- Focus on active risk management throughout the business.
- Develop, nurture and maintain our people.



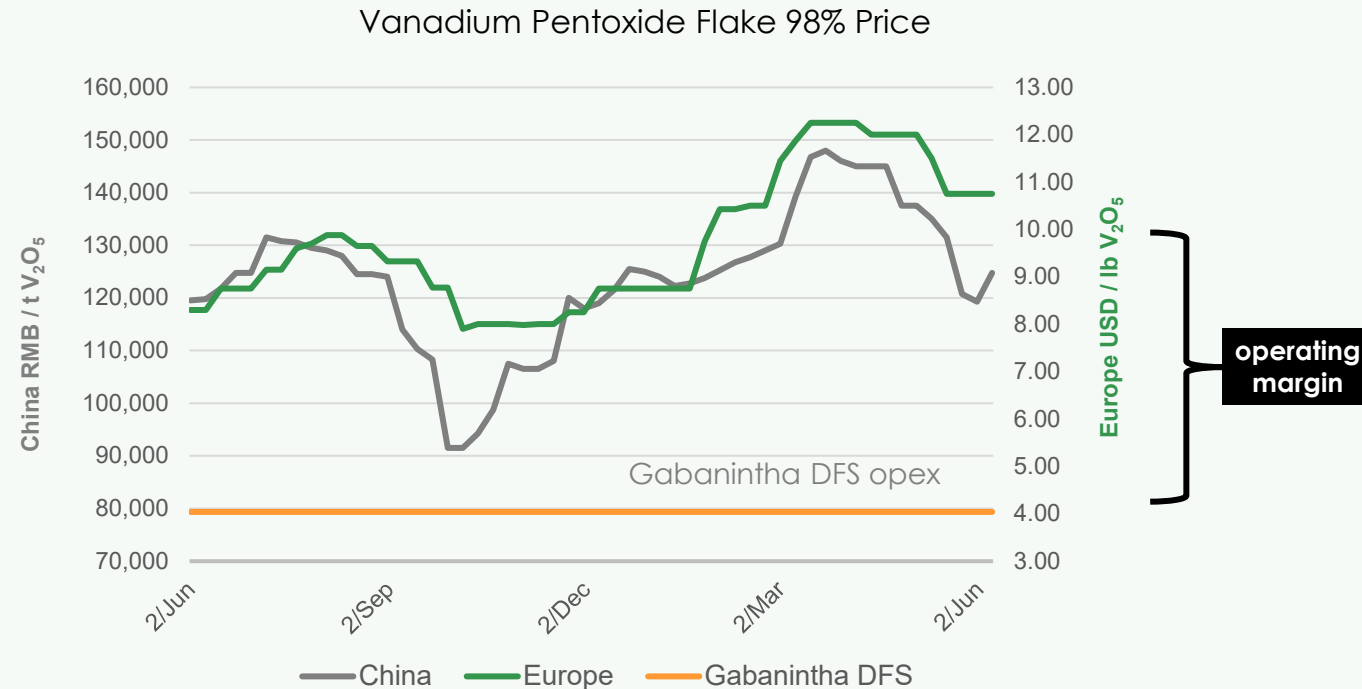
# Vanadium

## A critical mineral supporting net zero

- Enables higher quality, stronger steel, lowering emissions
- Chinese industry reduced 2019 CO<sub>2</sub> emissions by 1.5% by including vanadium in rebar<sup>1</sup>
- Large-scale batteries (VRFB) support renewable energy & grid stability

**“We see significant growth in demand for vanadium - which we foresee due to its growing use in high grade steel and flow batteries.”**

Sir Mick Davis, former Xstrata plc CEO



**V in Steel**



Less steel produced



Longer service life



Lower weight

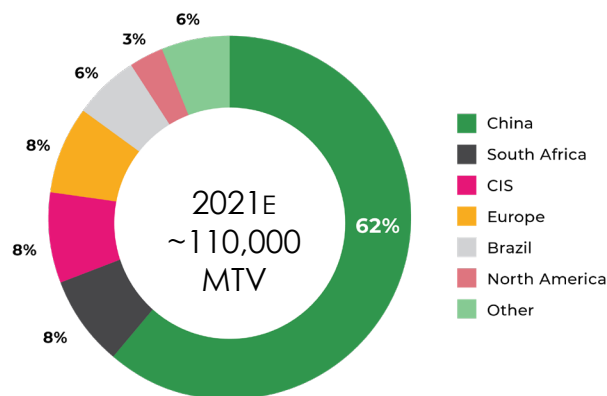


Higher capacity

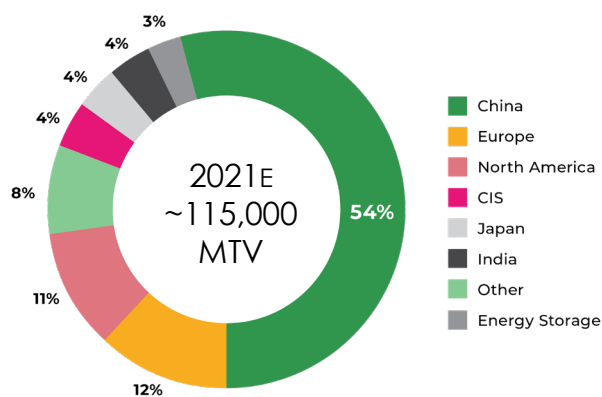
**CO<sub>2</sub>**  
SAVINGS  
IN TOTAL

# A market in need of new supply

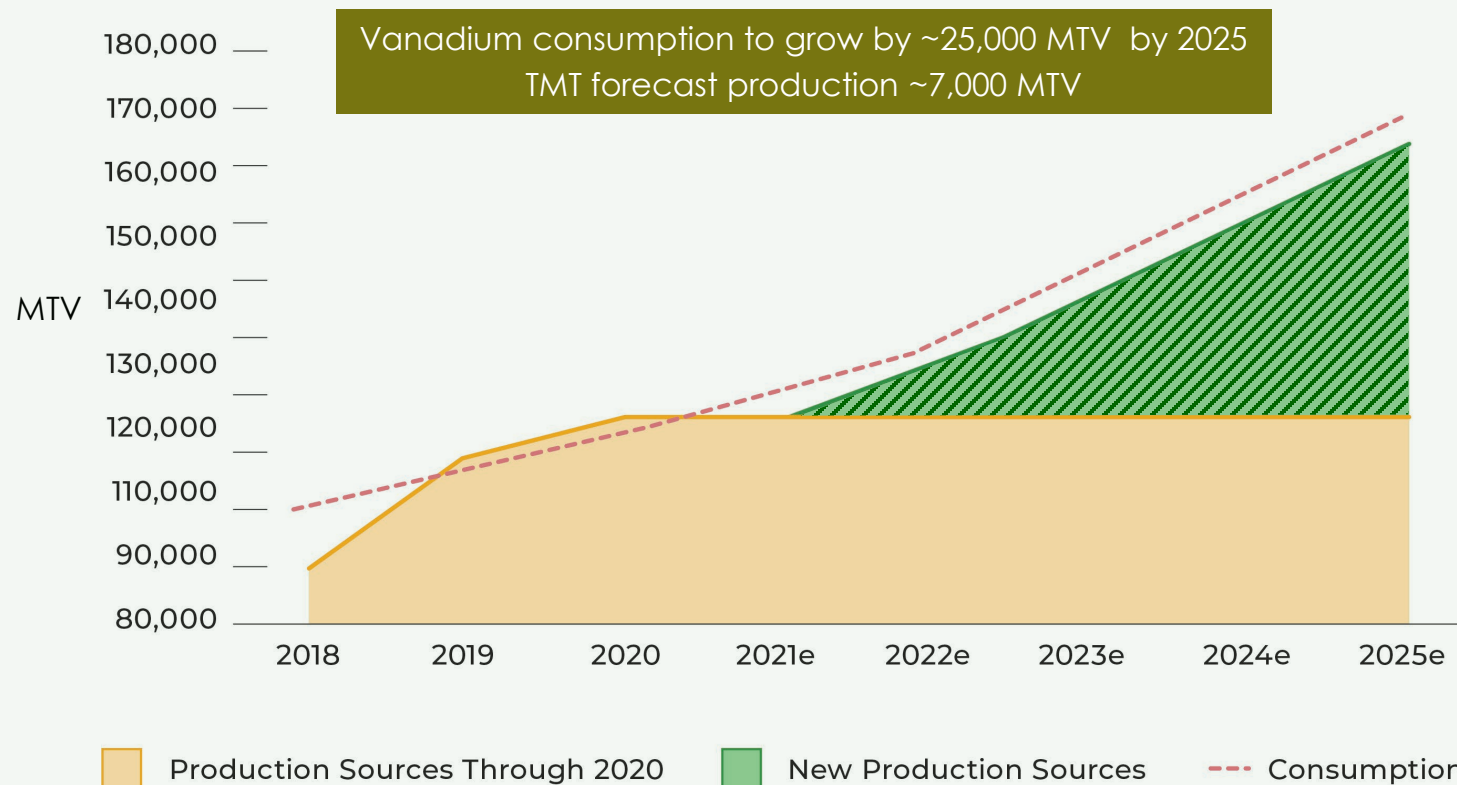
Vanadium **Production** by region



Vanadium **Consumption** by region



Forecast supply and demand



Source: TTP Squared Inc.

# Vanadium Redox Flow Batteries

Enabling the future of green energy  
– safe, stable, long duration storage



## No Degradation

Performance remains constant with excellent long term charge retention



## Low Energy Cost

Over its 20+ year lifespan, VRFB technology offers the lowest cost per kWh stored (LCOE)



## Safety

The vanadium electrolyte is water based and is totally non-flammable



## Sustainability

The vanadium is fully reusable and recyclable at end of the battery life



## Long Life

VRFB's can easily last more than 20 years with very high cycle life (up to 20,000 cycles)



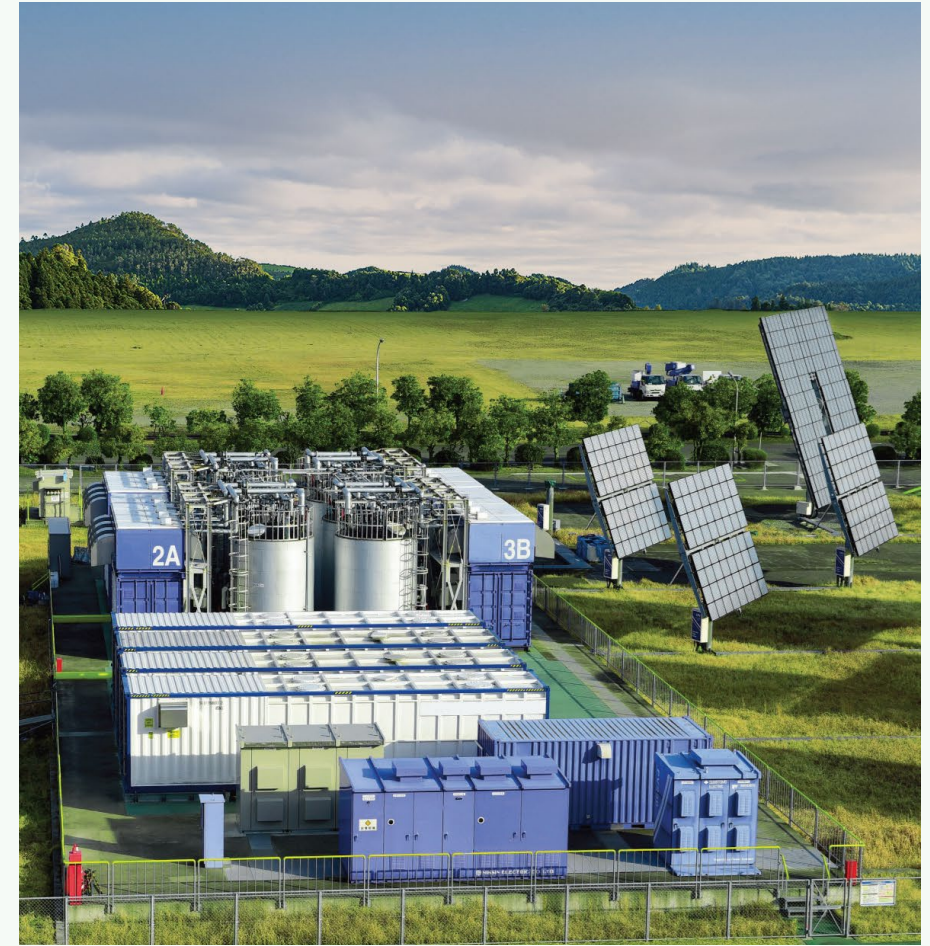
# Storage and Renewables

## The Opportunity for VRFB's

- Renewable energy is low cost but intermittent and can cause stress on traditional electricity networks.
- Short-term Energy Storage (1-4hrs) (eg Hornsdale / Tesla Battery) are generally on standby ready to step in to keep the grid stable
- Opportunity for Long duration Energy Storage (>4hrs) solutions to store solar / wind energy and use during high demand (evenings).
- *Vanadium Redox Flow Batteries (VRFBs) are a solution.*

***Long Duration Energy Storage is needed to make “solar power available when the sun isn't shining and keeping wind energy on tap when there's no breeze”***

***– June 2022, USA Department of Energy***



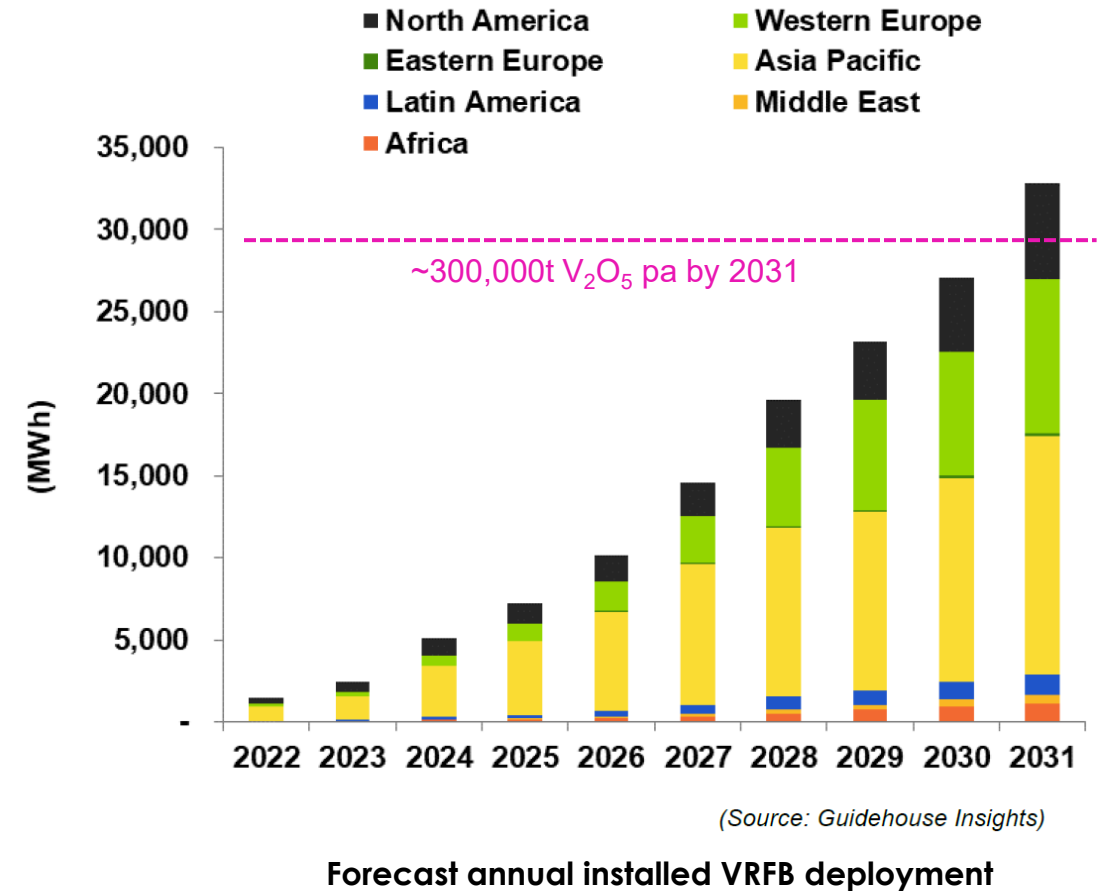
A 3 MWh Sumitomo Electric VRFB System Japan. Source: Sumitomo



# Storage and VRFB Demand

## Game Changer for Vanadium

- 1 MWh of VRFB capacity requires ~10 t of  $V_2O_5$ . VRFB deployment is increasing, currently 179 in operation across the globe (source: vanitec.org)
- China has committed to 1,500 MWh of VRFB's - **(15,000t  $V_2O_5$ )**
- The Energy Superhub Oxford (ESO) – largest Li-VRFB hybrid battery in the world (50MW). VRFB discharging daily and Li engaged when large demand occurs.
- **VRFB deployment is expected to reach ~30GWh by 2031, requiring >300,000t of  $V_2O_5$  !<sup>1</sup>**

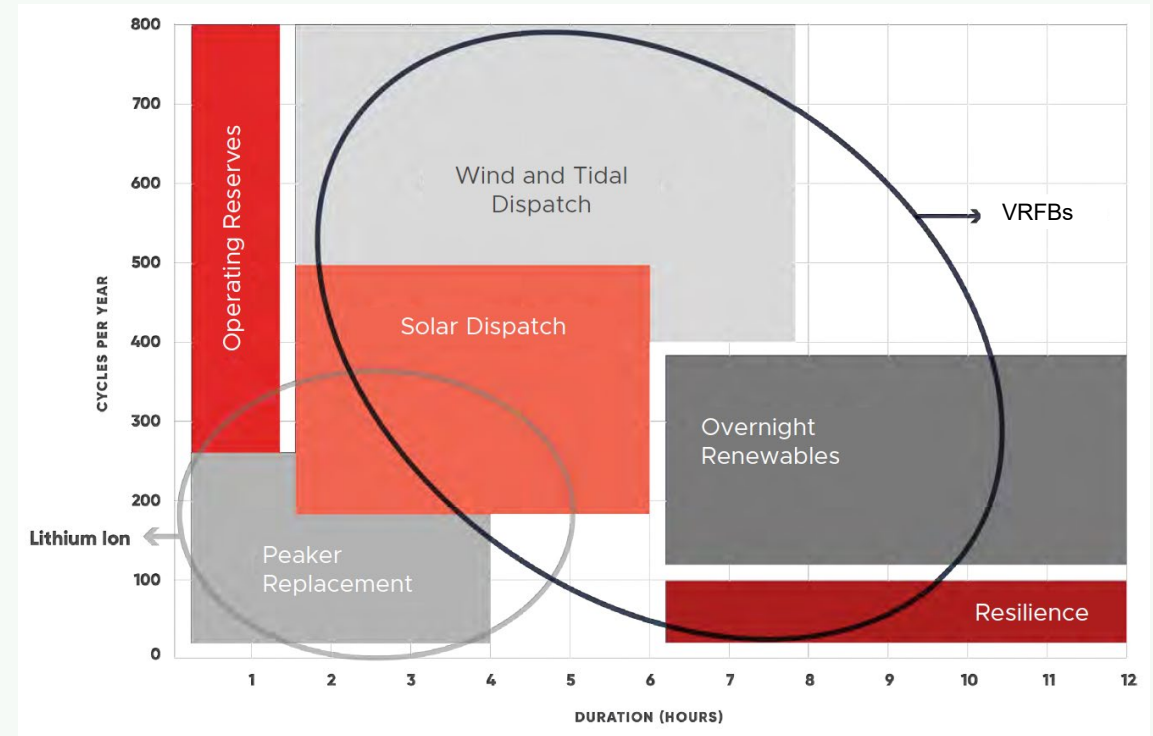


# TMT's electrolyte strategy

Australian made vanadium electrolyte for a cleaner future



- TMT committed to VRFB's which have a distinct value proposition for long duration, high cycle usage – **vLYTE subsidiary established**.
- vLYTE investigating value-adding opportunities for the VRFB industry.
- Working with Japanese electrolyte producer, LE System, to establish local production of vanadium electrolyte using TMT's vanadium products.
- Targeting world competitive vanadium electrolyte costs based on lowest quartile MTMP vanadium production costs.
- Downstream processing adds value to TMT and Australia.



VRFBs ideal for use in medium-long duration applications. Source: Invinity



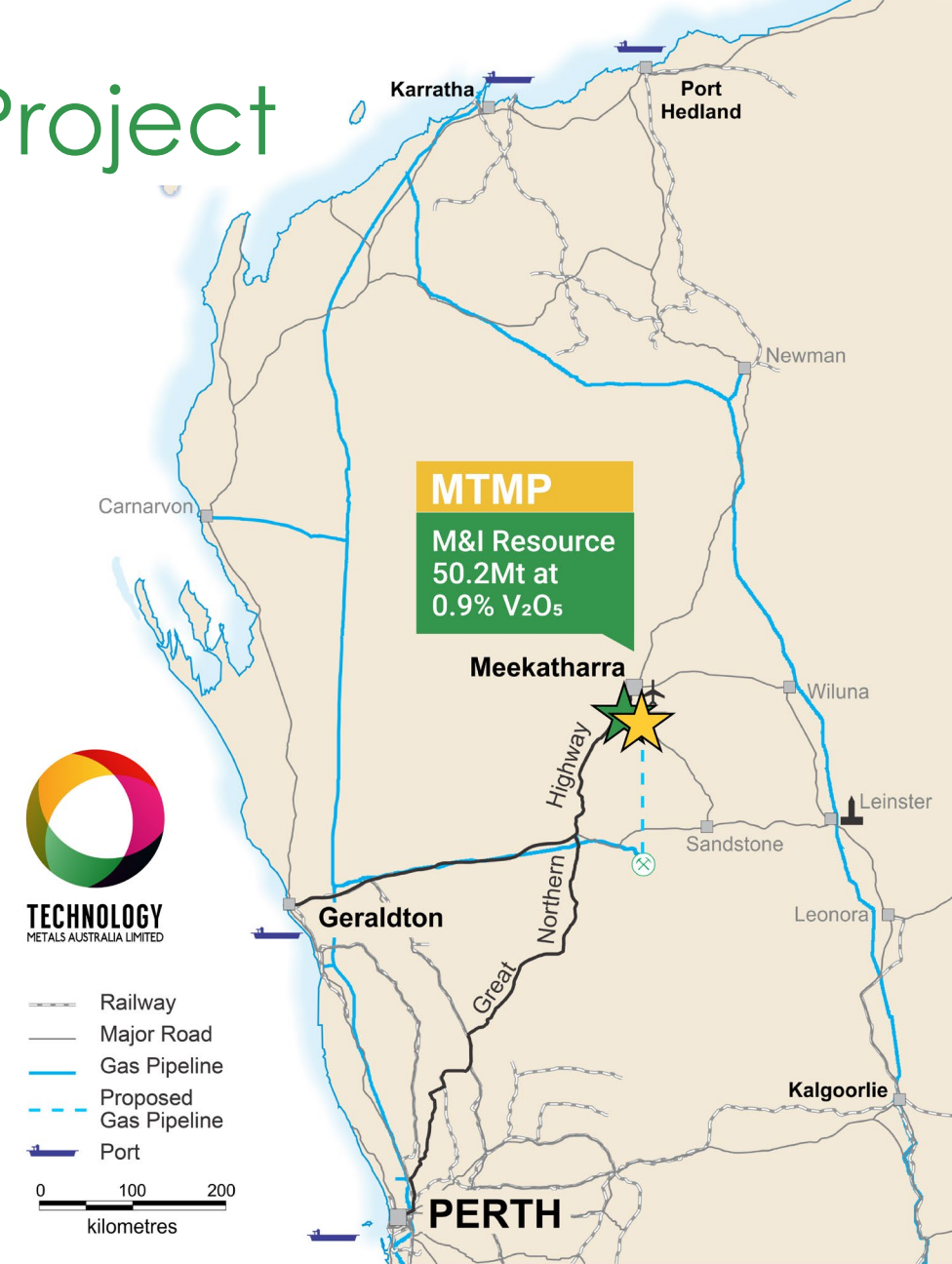
**LE SYSTEM CO., Ltd.**



# Murchison Technology Metals Project

## Significant Project Advantages

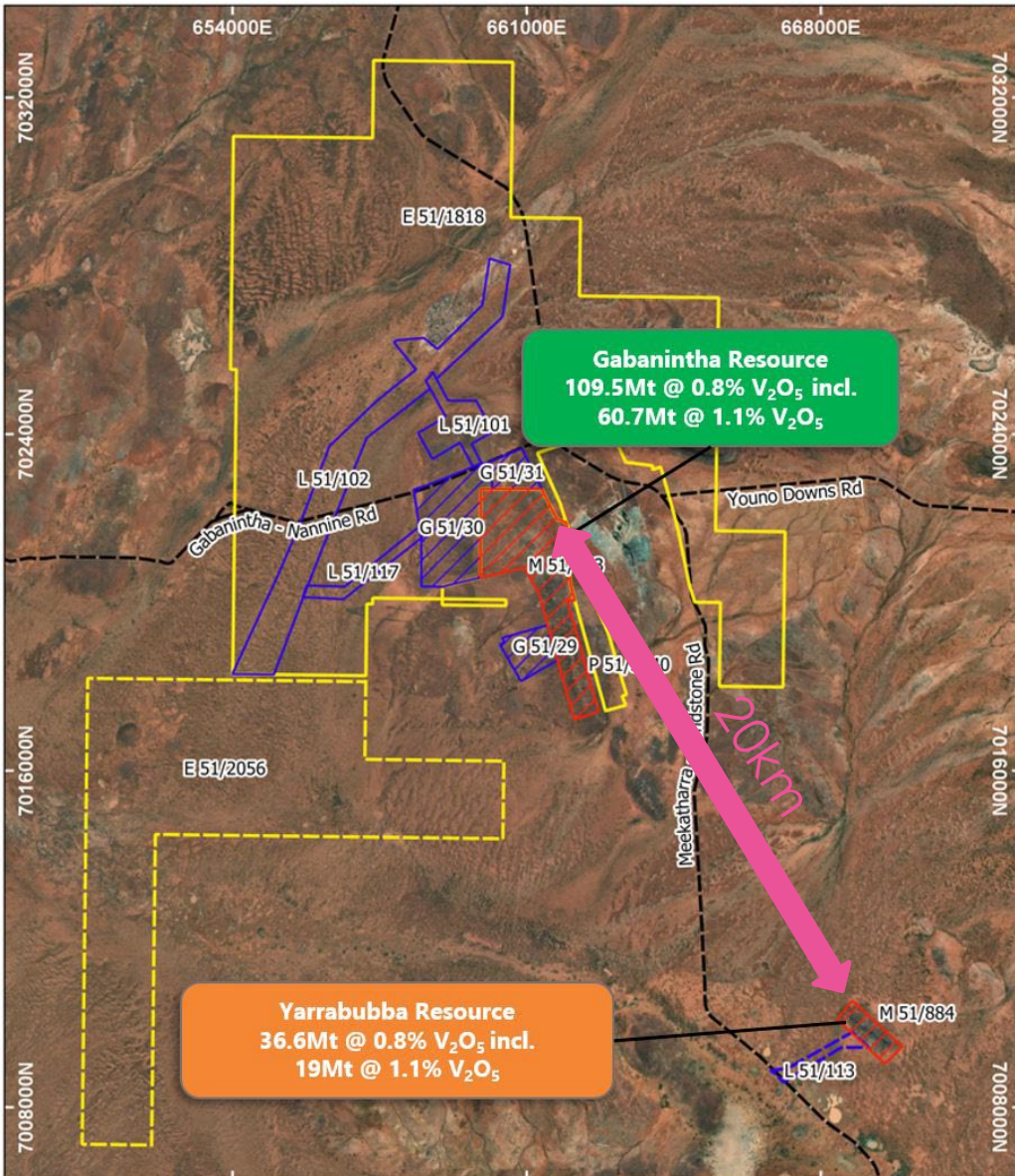
- Mining leases granted; environmental approvals well advanced
- High-quality, high-grade resource of 79.8Mt at 1.1%  $V_2O_5$
- Lowest cost quartile – conventional salt roast water leach process
- Shallow weathering → delivers high recoveries from start
- Premium purity product (>99%) supporting move to Net Zero
- Titanium product reduces costs
- Solar farm part of hybrid power generation solution
- Fully funded to FID and ordering of long lead items





# Murchison Technology Metals Project

Targeting +25 year life based on M&I mineral resource of 50.2Mt at 0.9%  $V_2O_5$



## Gabanintha Vanadium

- Large, long-life high purity vanadium project
- Lowest cost quartile at US\$4.04/lb  $V_2O_5$
- Average annual EBITDA of A\$255 million
- Key environmental approvals well advanced
- Site of integrated processing facility

## Yarrabubba Vanadium

- High grade  $V_2O_5$  in magnetite concentrate
- Titanium product from tails stream
- Potential to materially enhance project economics
- Very shallow weathering
- Thick high-grade zones at surface

## Implementation Phase Delivering

- Flowsheet and layout locked down
- MTMP Ore Reserve update – life of mine production profile
- Engagement with key long lead item suppliers
- Commercial competitive tenders to deliver market pricing
- Deliver bankable financial model for project delivery

ASX:TMT

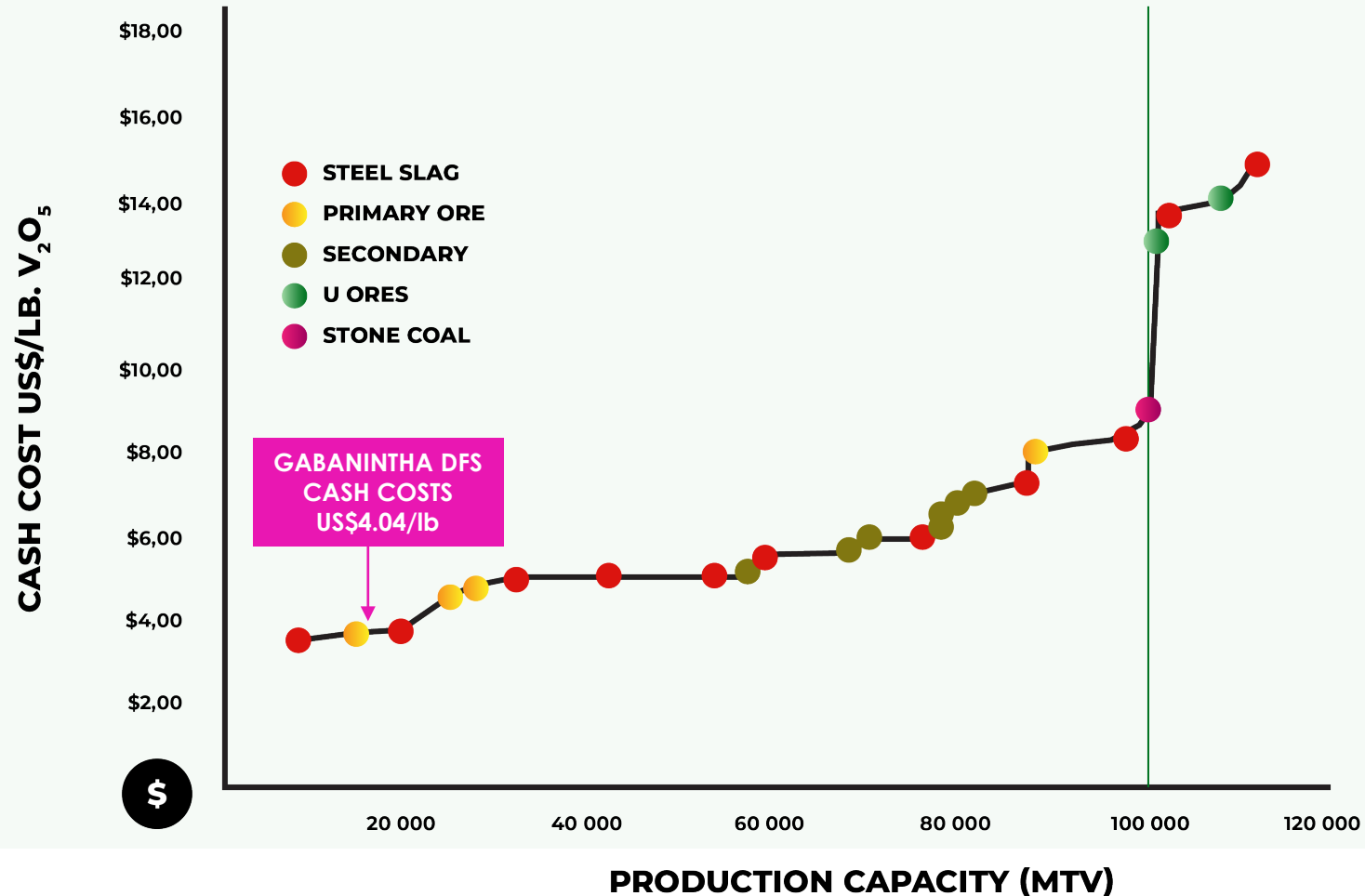
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# Lowest quartile cash costs

Titanium product credits expected to reduce costs

## 2020 V<sub>2</sub>O<sub>5</sub> CASH COST CURVE



# Murchison Technology Metals Project

## Key project partners



Australian Government

### Federal Government

Northern Australia  
Infrastructure Facility (NAIF)  
Export Finance Australia (EFA)  
Critical Minerals Facilitation  
Office (CMFO)



### WA Government

Lead Agency Support  
Future Battery Industry  
CRC  
Supporting downstream  
processing.



### WA EPA

Environmental  
approvals  
Constructive  
consultation



### APA

Gas transportation  
agreement. Early  
Works agreement  
executed  
Lower gas  
transportation costs;  
access to emerging  
Perth Basin gas fields.



### FLSmidth

Equipment vendor  
engagement  
Kiln supply  
agreement executed.  
FEED study underway





### Offtake

Ongoing market  
engagement for  
product offtake /  
funding options  
CNMNC, LE Systems

# Timetable & news



- Granted Mining leases 
- Base Case (GAB) Design / DFS 

## INTEGRATION STUDY

- Resource Upgrade Drilling 
- Plant Layout / Design Lockdown 
- Ore Reserve Update

Production Schedule – V<sub>2</sub>O<sub>5</sub> and Ilmenite

## IMPLEMENTATION PHASE

- FLS FEED 
- APA – Gas Supply Early Works 

Resource Upgrade M+I

## Environmental (EPA) approval process

- Offtake / Customer Engagement
- Implementation Ore Reserve
- Development Decision
- Financial Close / Project Development

Q3 2022

Q3 2022

Q3 2022

Q3 2022

H2 2022

Q4 2022

Q4 2022

H1 2023

# A Brighter Future is Right Here

## Globally Significant

project with outstanding economics  
located in a Tier 1 jurisdiction

## Strategic Investor

RCF VII with long-term focus on  
supporting project development

## Critical Project

to deliver critical green minerals that  
support a cleaner future

## Delivering

on project development  
underpinned by high quality  
technical work

## Team in place

focused on a development strategy to  
maximise shareholder value

## Stable

operating environment with  
excellent infrastructure and access





**TECHNOLOGY**  
METALS AUSTRALIA LIMITED

**Ian Prentice**  
Managing Director

 [ian@tmtlimited.com.au](mailto:ian@tmtlimited.com.au)

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Suite 9, 330 Churchill Ave  
Subiaco WA 6008, AUSTRALIA

**Ph:** +61 8 6489 1600

**Fax:** +61 8 6489 1601

 [www.tmtlimited.com.au](http://www.tmtlimited.com.au)

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