



TECHNOLOGY
METALS AUSTRALIA LIMITED

**VANADIUM BATTERY
TECHNOLOGY
FOR A CLEANER FUTURE**

**JTSI-JETRO WEBINAR
SEPTEMBER 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 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 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.

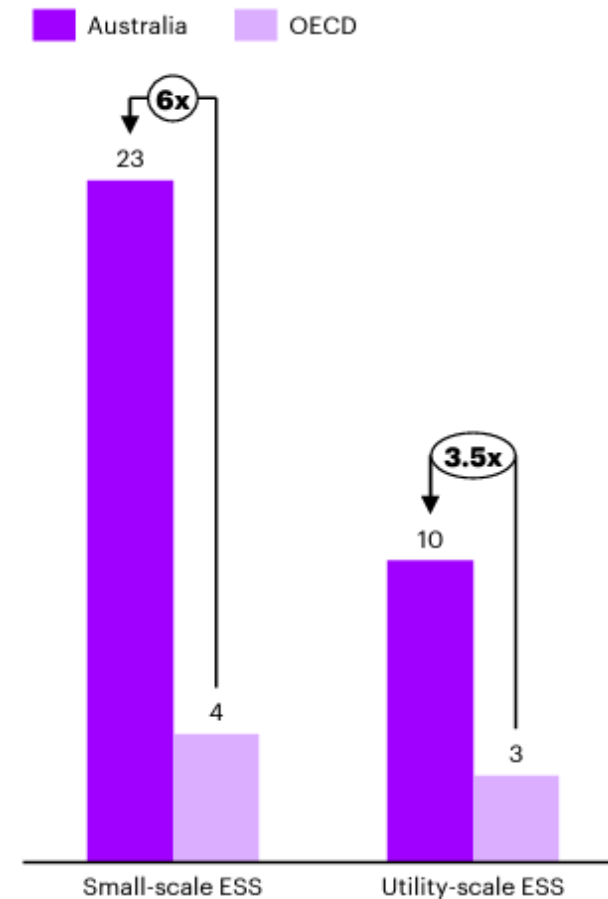
Pursuant to LR-5-19-2 production target and financial forecast: The material assumptions as per the ASX release on 21 August 2019 continue to apply and have not materially changed.

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.

Clean energy transition requires batteries

- Australian mining industry a key supplier of raw materials for batteries – e.g., lithium, nickel, copper, vanadium
- Federal and State government commitments and strategies for reduction of emissions leading to emerging renewables and battery industries
- Wind power generated 20% of WA's electricity over the past year, also rapid uptake in domestic solar power generation - require **more batteries to balance the grid**
- Australia forecast to comprise **7% of global stationary battery installation**

Number of MWh per million people, 2020



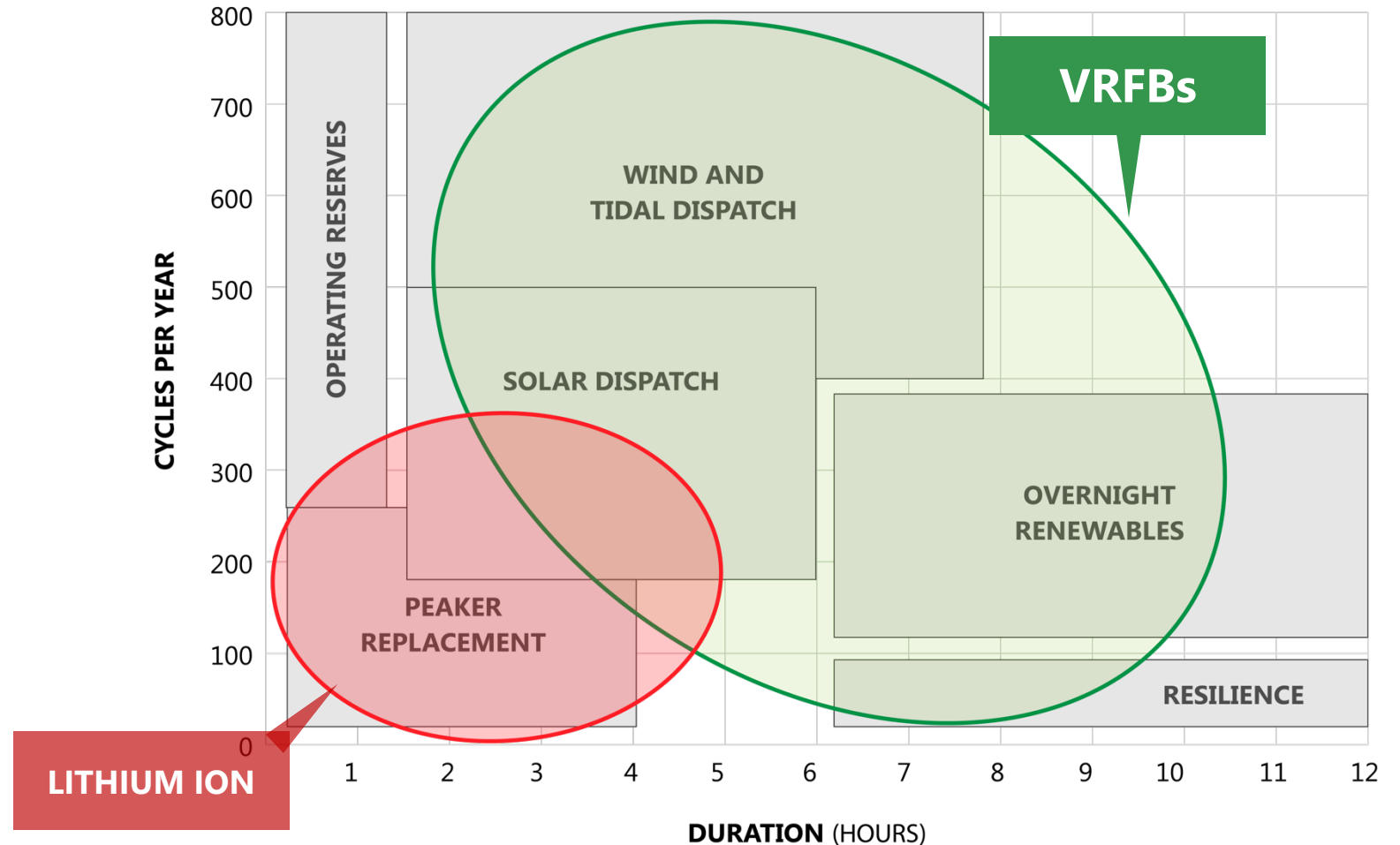
Source: FBICRC/Accenture Future Charge Report

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?

Safe, stable, reliable, low cost, long life performance



SAFETY

Water based and totally non-flammable, non-combustible, and non-toxic



LOW ENERGY COST

Over its 20+ year lifespan, vanadium batteries offer the lowest cost per kWh stored (LCOE)



EASY TO EXPAND CAPACITY

Battery capacity easily expandable by adding more storage tanks



NO DEGRADATION

Performance remains constant with excellent long term charge retention



SUSTAINABILITY

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



LONG LIFE

Can easily last more than 20 years with very high cycle life (up to 20,000 cycles)



RELIABLE PERFORMANCE

Work in harsh environmental conditions without loss of performance

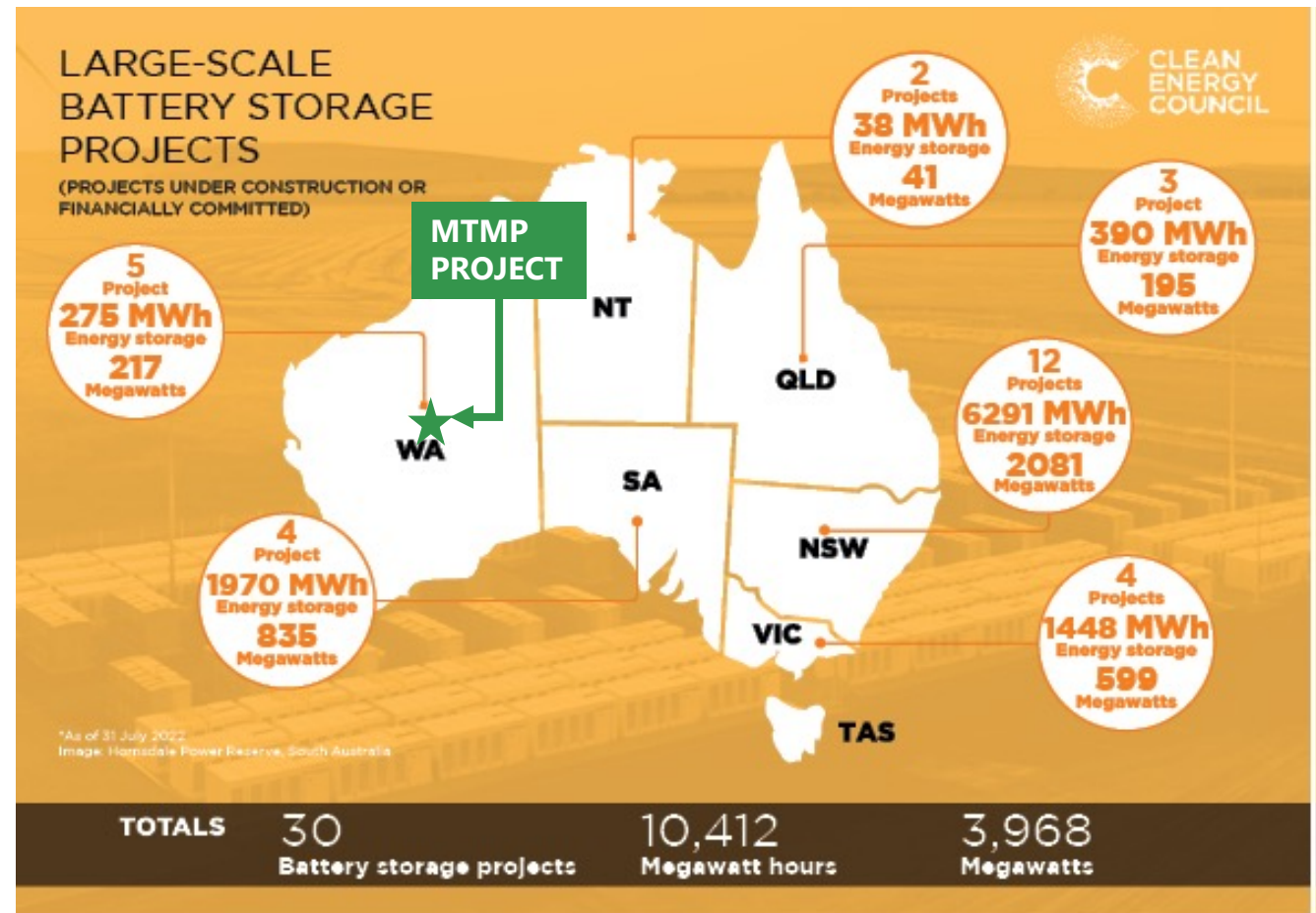


SINGLE CHEMICAL ELEMENT

Use multiple forms of vanadium to store and release charge – eliminating need for any other elements

Australia's own vanadium supply for vanadium redox flow batteries

- Australia possesses 18% of world economic resources of vanadium*
- TMT's vanadium project, **the Murchison Technology Metals Project (MTMP)**, is located in mid-west Australia
- **A politically and geographically stable jurisdiction** with supportive government and highly skilled workers
- **Ready access** to key infrastructure
- **Availability of land** for value-adding downstream vanadium electrolyte processing
- Poised to supply increasing market demand



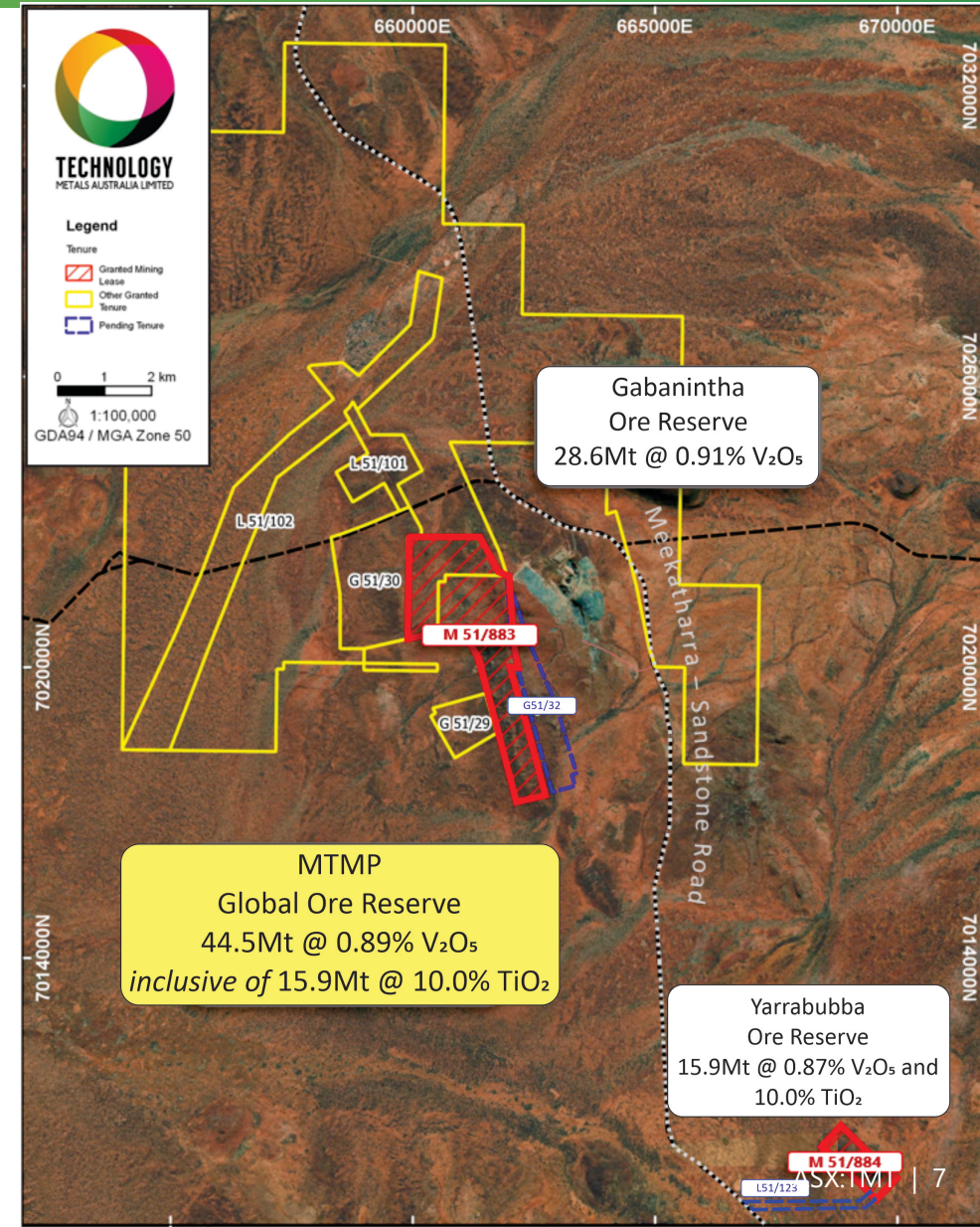
Source: Clean Energy Council

One of the largest single Vanadium Projects globally

- Global Ore Reserve of 44.5Mt @ 0.89% V₂O₅
- Conventional process flowsheet underpinned by extensive pilot test work
- Traditional open pit mining
- Mine life +25 years
- Production capacity ~12,500tpa V₂O₅ (~96,500tpa ilmenite*)



Yarrabubba Deposit looking North



PARTNERSHIP WITH LE SYSTEM



- **TMT subsidiary vLYTE** focused on adding value to the high-quality MTMP vanadium and support the development of VRFB
- Memorandum of Understanding (MoU) in place with leading Japanese vanadium electrolyte company **LE System Co., Ltd** since 2021
- LE System was established in 2011 and commissioned its commercial scale vanadium electrolyte plant in Namie, Fukushima Prefecture, Japan in October 2021
- The plant can produce ~5,000m³ of vanadium electrolyte p/a, equivalent to ~100MWh energy storage capacity

PARTNERSHIP WITH LE SYSTEM

- Agreement between TMT and LE System to investigate vanadium electrolyte production capacity in Australia
- Assessment of suitable locations for multiple vanadium electrolyte plants proximal to proposed large scale renewable energy production centres
- TMT to have access to LE System's technical knowledge under a proposed technology licensing agreement
- TMT and LE System continuing to discuss vanadium supply plan (offtake) to assist LES's electrolyte production in Japan to meet increasing market demand



GOVERNMENT SUPPORT FOR INDUSTRY

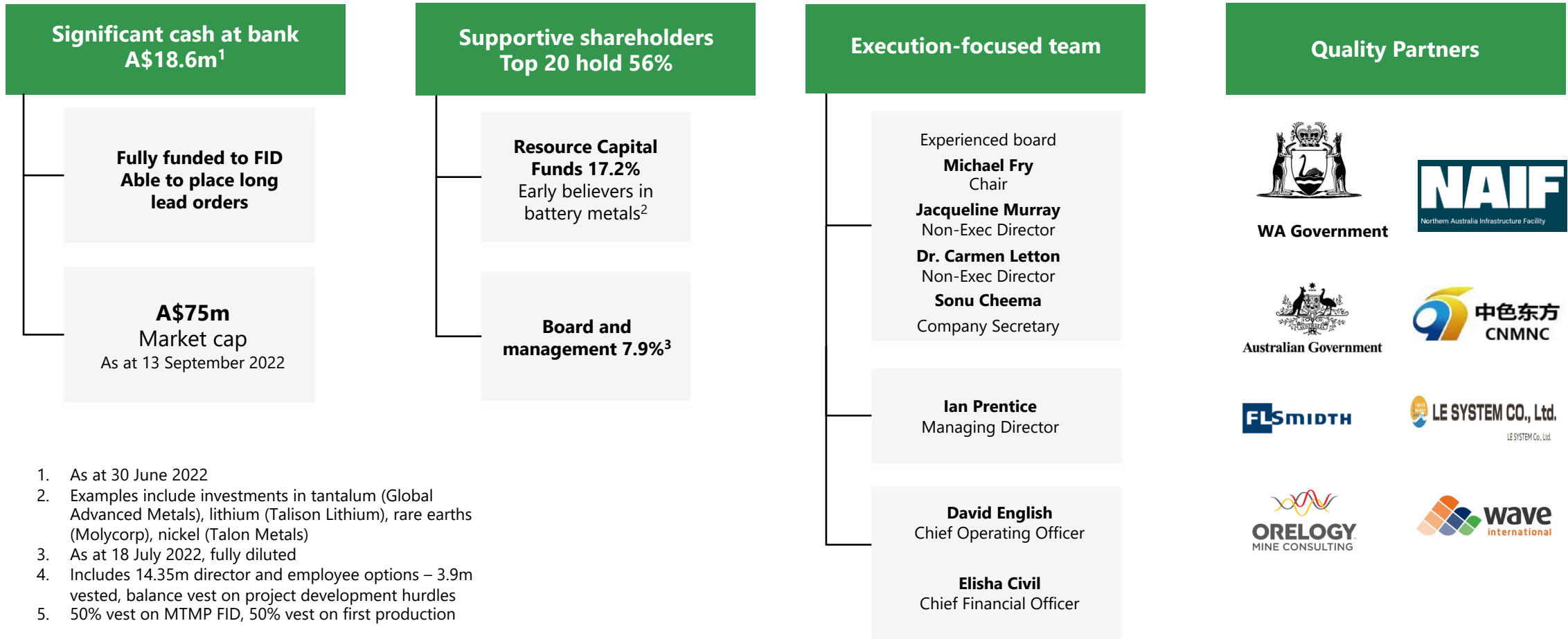


- Australian government-backed Future Battery Industries Cooperative Research Centre (FBICRC) a collaborative network of industry, researchers and government to grow Australia's role in the global battery value chain
- TMT a key investor in the **FBICRC's "Development of Electrolyte Project"** which will study ways to enhance the performance of VRFBs
- WA Government's Future Battery and Critical Minerals Industries Strategy committed to battery precursor manufacturing and other value-add activities in WA

POISED TO COMMENCE CONSTRUCTION IN 2023

ASX:TMT

Focused on execution success to maximise returns to shareholders



1. As at 30 June 2022
2. Examples include investments in tantalum (Global Advanced Metals), lithium (Talisson Lithium), rare earths (Molycorp), nickel (Talon Metals)
3. As at 18 July 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



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