



**TECHNOLOGY**  
METALS AUSTRALIA LIMITED

ASX Announcement

28 July 2020

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Directors

Michael Fry:  
Chairman

Ian Prentice:  
Managing Director

Sonu Cheema:  
Director and Company Secretary

Issued Capital

122,400,000 ("TMT") Fully Paid  
Ordinary Shares

8,250,000 – Unquoted Director and  
Employee Options exercisable at  
\$0.20 on or before 10 May 2023

9,599,834 – Unquoted Options –  
various exercise prices and dates

ASX Code: TMT

FRA Code: TN6



# STOCKPAL MINES UNEARTHED WEBINAR PRESENTATION

Technology Metals Australia Limited (ASX: TMT) ("Technology Metals" or the "Company") is pleased to announce its participation at the StockPal Mines Unearthed webinar.

Managing Director Ian Prentice will provide an update on the status of the development of the Company's Gabanintha Vanadium Project in Western Australia on Tuesday 28 July 2020 from 10:50 am AWST.

We invite you to join the free Webinar by registering using the following link, [TMT Webinar Registration](https://us02web.zoom.us/webinar/register/3815941204358/WN_Y1jT6lnUROu8KsXkcpTxQQ) <sup>1</sup>.

A copy of the investor presentation to be delivered during the Webinar is attached.

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

<sup>1</sup> [https://us02web.zoom.us/webinar/register/3815941204358/WN\\_Y1jT6lnUROu8KsXkcpTxQQ](https://us02web.zoom.us/webinar/register/3815941204358/WN_Y1jT6lnUROu8KsXkcpTxQQ)

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

Sonu Cheema

Director and Company Secretary  
Technology Metals Australia Limited

- ENDS -



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METALS AUSTRALIA LIMITED

# **The World's Next Vanadium Mine**

## **GABANINTHA VANADIUM PROJECT**

**StockPal Mines Unearthed Webinar – 28 July 2020**

**Investor Presentation**

personal use only



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# Important Information

## 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 Ian Prentice. Mr Prentice is Managing Director of the Company and a member of the Australian Institute of Mining and Metallurgy. Mr Prentice 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 Prentice 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 Grant Louw. Mr Louw is a Principal Consultant with CSA Global and a Member of the Australian Institute of Geoscientists. Mr Louw has sufficient experience relevant to the styles of mineralisation and types of deposits which are covered in this report and to the activity which he is 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 Louw 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 that relates to Ore Reserves is based on information compiled by Mr Daniel Grosso and reviewed by Mr Karl van Olden, both employees of CSA Global Pty Ltd. Mr van Olden takes overall responsibility for the Report as Competent Person. Mr van Olden 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, Karl van Olden 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 Gabanintha project is based on and fairly represents, information and supporting documentation compiled by Mr Brett Morgan and reviewed by Mr Damian Connelly, both employees of METS Engineering Group Pty Ltd. Mr Connelly takes overall responsibility for the Report as Competent Person. Mr Connelly 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 which he is 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'. The Competent Person, Damian Connelly consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

All currency amounts are in AUD\$ unless stated otherwise.





# TMT Vision: To be a Low Cost, High Purity Producer of Choice

## GABANINTHA VANADIUM PROJECT

- Tier one mining project in tier one location
- Large, high grade resource – fresh ore at surface – industry leading end-to-end recovery
- High quality DFS completed – included pilot plant scale testwork
- Offtake agreements well progressed – including take-or-pay over 2,000Tpa  $V_2O_5$
- Advanced engagement on Project funding



# Corporate Overview

**TMT**

ASX Code

**\$3.2m**

Cash  
(as at 30 June 2020)

**\$22.0m**

Market Cap  
(as at 27 July 2020)

**122.4m**

Total Shares  
on Issue

**9.60m**

Unlisted Options  
(various exercise)

**8.25m**

Unlisted Options \*  
(\$0.20 – 10/05/23)

**Holder**

**Holdings**

Great Southern Flour Mills P/L

12.2%

Mr Chris Retzos

6.4%

Buxiao Yu

5.3%

Colin David Iles

4.4%

Station Nominees P/L

4.1%

\* Director and employee options – 50% vest on grant of mining licence, 50% vest on Gabanintha FID

# Board and Management



**Ian Prentice**  
Managing Director



**David English**  
Project Director

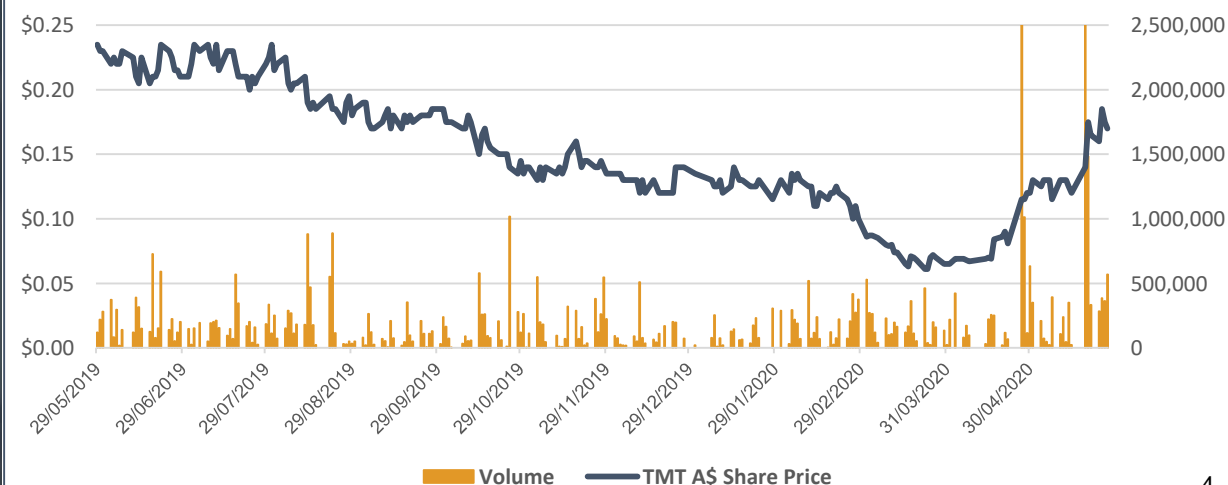


**Michael Fry**  
Non-Exec Chairman



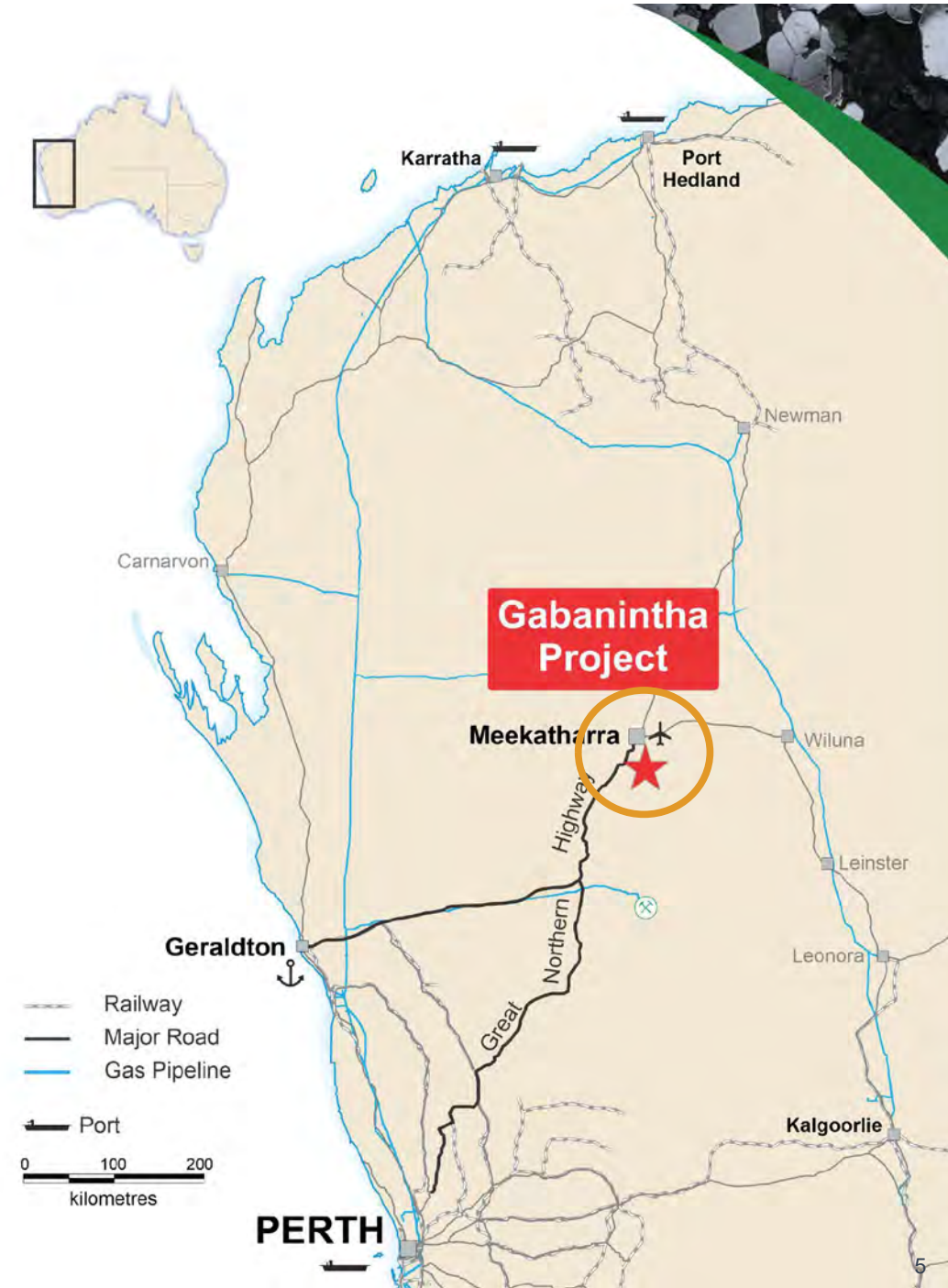
**Sonu Cheema**  
Non-Exec Director / Co Secretary

**TMT 12 Month Share Price Performance**



# Pre-eminent Location

- **Excellent infrastructure** – sealed National Highway from Perth passes within 30km of the project.
- **Gas pipeline** – MOU with DDG Operating (AGIG) to develop Build Own Operate proposal.
- **Water** supply from northern paleochannel borefield in TMT tenure proximal to plant location.
- **Integrated** mining, beneficiation and processing facility maximises benefits for all stakeholders.
- Access to **ports** (Geraldton and/or Fremantle) via sealed highway.
- **Regionally and nationally** significant development project.





# August 2019 DFS - Outcomes<sup>1</sup>

## MASSIVE MAGNETITE RESOURCE

**71.2Mt**  
@ 1.1%  $V_2O_5$



## MINING RESERVE

**29.6Mt**  
@ 0.88%  $V_2O_5$



## PROCESSING PLANT



**27.9Mlb**  
 $V_2O_5$  pa

## HIGH PURITY PRODUCT



**>99%  $V_2O_5$**

## OPEX

**US\$4.04**  
/ lb  $V_2O_5$



## MINE LIFE

**+16years**



## PRE PRODUCTION CAPITAL COSTS

**US\$318M**  
**A\$454M**



## PAYBACK

**<3.2years**



<sup>1</sup>Refer TMT ASX announcement dated 21 August 2019 for full details of the Definitive Feasibility Study

# Major Use is in Steel – Batteries Rapidly Emerging

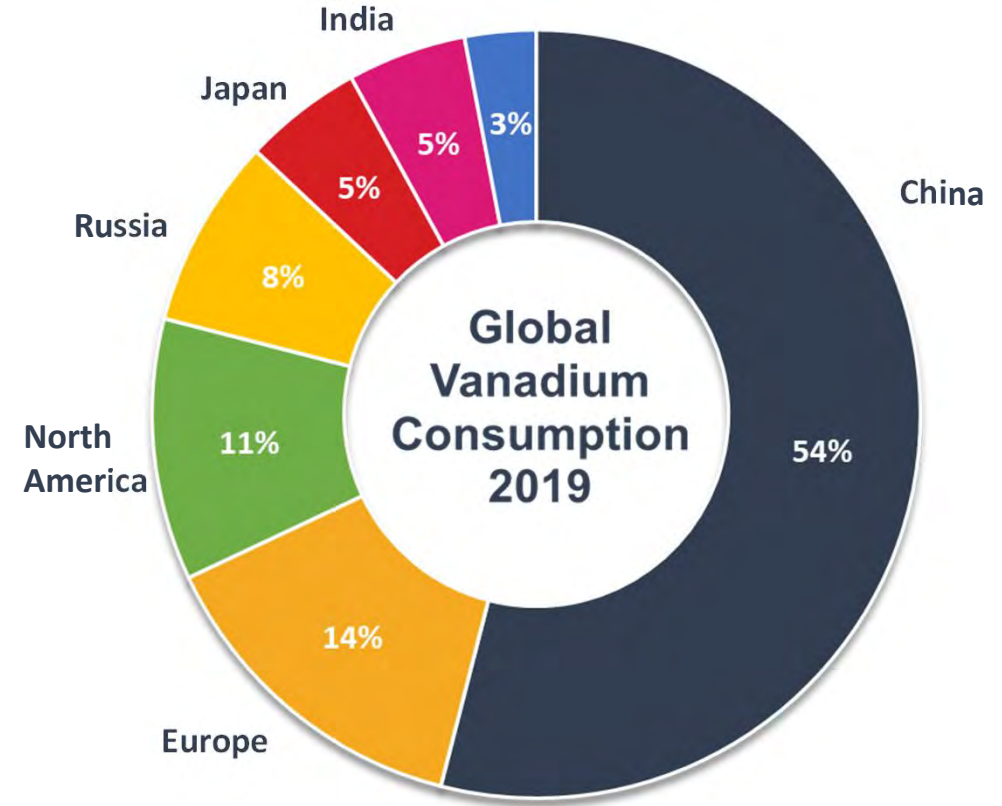
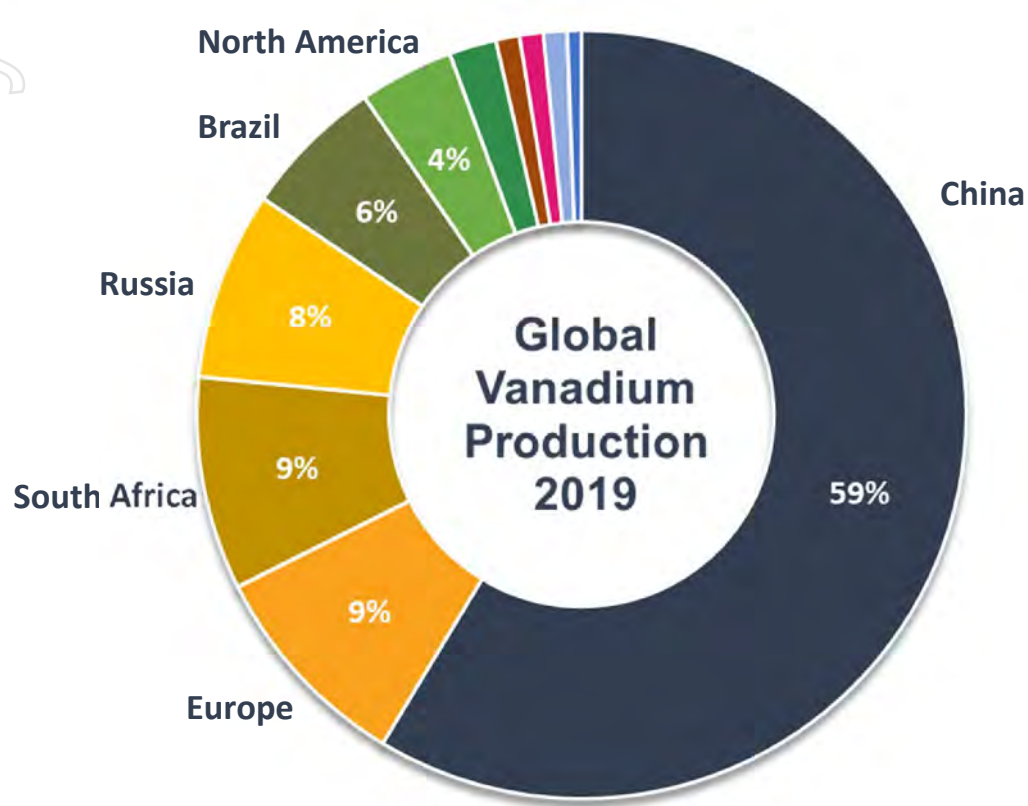


## VANADIUM CONSUMPTION BY END USE



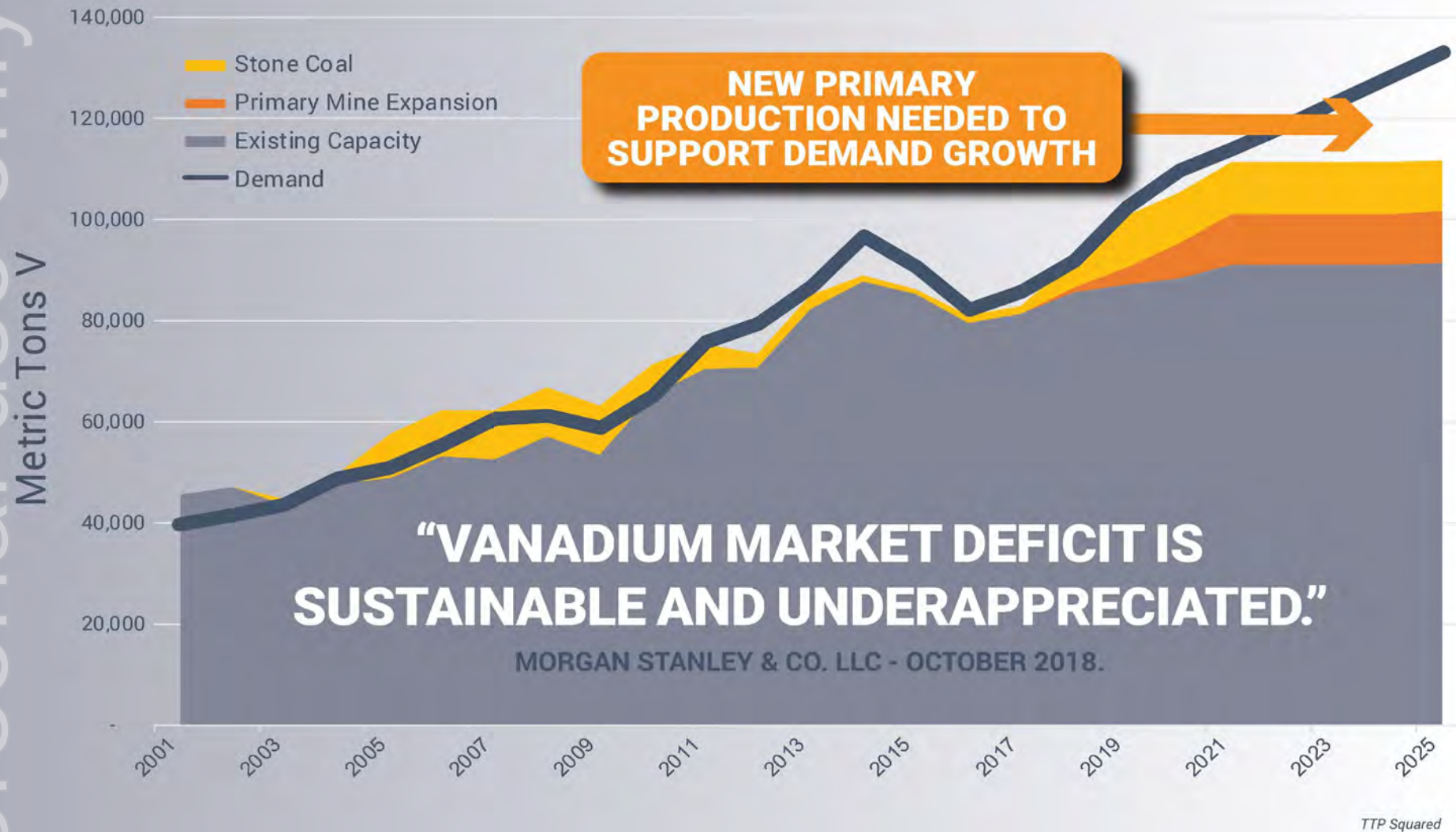


# Vanadium Supply / Demand



- Europe, North America, Japan and India net importers.
- Indian consumption set to grow significantly in near to mid term.
- Currently no production from Australia

# The Emerging Deficit



Consumption forecast to increase to 135,300t V by 2028 delivering a forecast deficit of 27,700t V (49,450t V<sub>2</sub>O<sub>5</sub>) without production expansions and new mine developments.

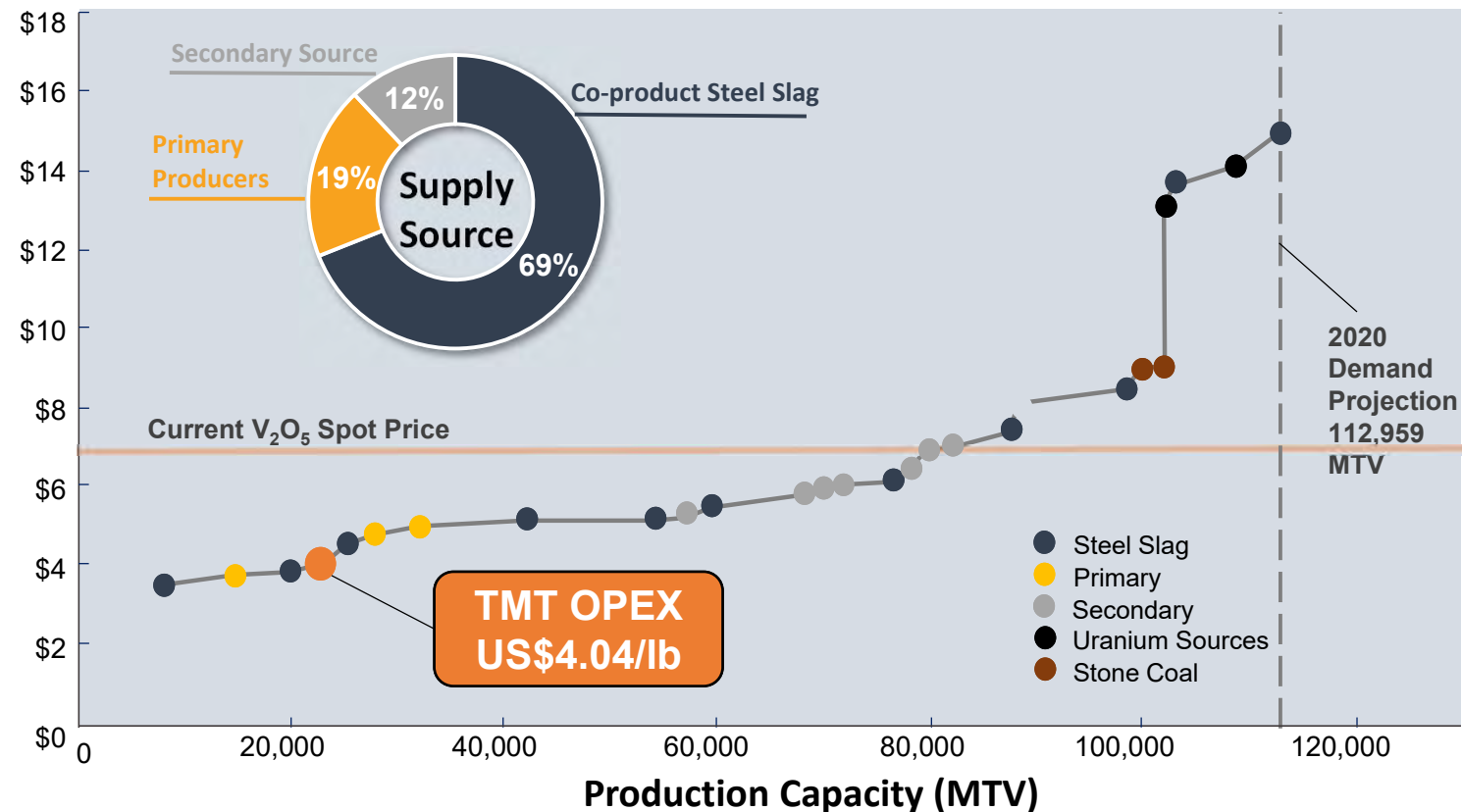
(Source: Roskill, 2019)



# Vanadium Market Dynamics

- China net importer of vanadium in late 2019 – first time in 10 years.
- Price environment removed some of the higher cost / highly polluting Chinese supply.
- Tightening domestic Chinese market due to increased consumption in steel.
- COVID-19 impacts – expecting further stimulus spending on infrastructure.
- Current pricing very supportive of VRFB roll out – Dalian, Hokkaido batteries!
- Gabanintha lowest quartile costs at US\$4.04/lb\* V<sub>2</sub>O<sub>5</sub>.
- All In Sustaining Cost estimate of US\$5.75/lb V<sub>2</sub>O<sub>5</sub>.

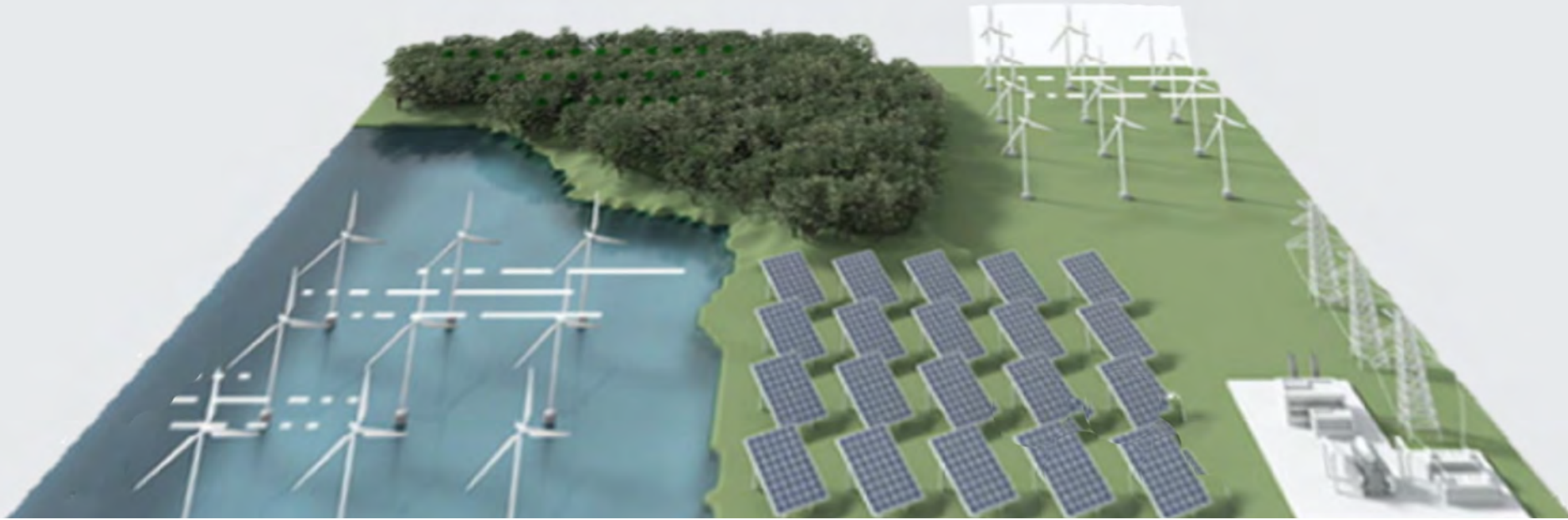
## V<sub>2</sub>O<sub>5</sub> Cash Cost Curve (Forecast CY2020)



Source: TTP Squared

\* TMT operating costs do not incorporate any revenue benefits that may be generated from by-product credits, such as base metal production

# VRFBs – The Solution for Grid Storage



- Grid scale stationary storage solutions – peak shaving, regulating load frequency, driving grid efficiency.
- Ideally suited to renewable energy – contributing to the efficient roll out of green energy – able to time-shift large amounts of previously generated energy.
- Lifespan of +20 years with very high cycle life (up to 20,000 cycles) and no capacity loss.
- Can discharge to 100% with no performance degradation with excellent long term charge retention.
- Only one battery element – vanadium is anode and cathode – unique among flow batteries.
- Easily scalable into large MW applications; expandable by simply adding more electrolyte storage capacity.
- Non-flammable – enhanced safety.



# GABANINTHA VANADIUM PROJECT

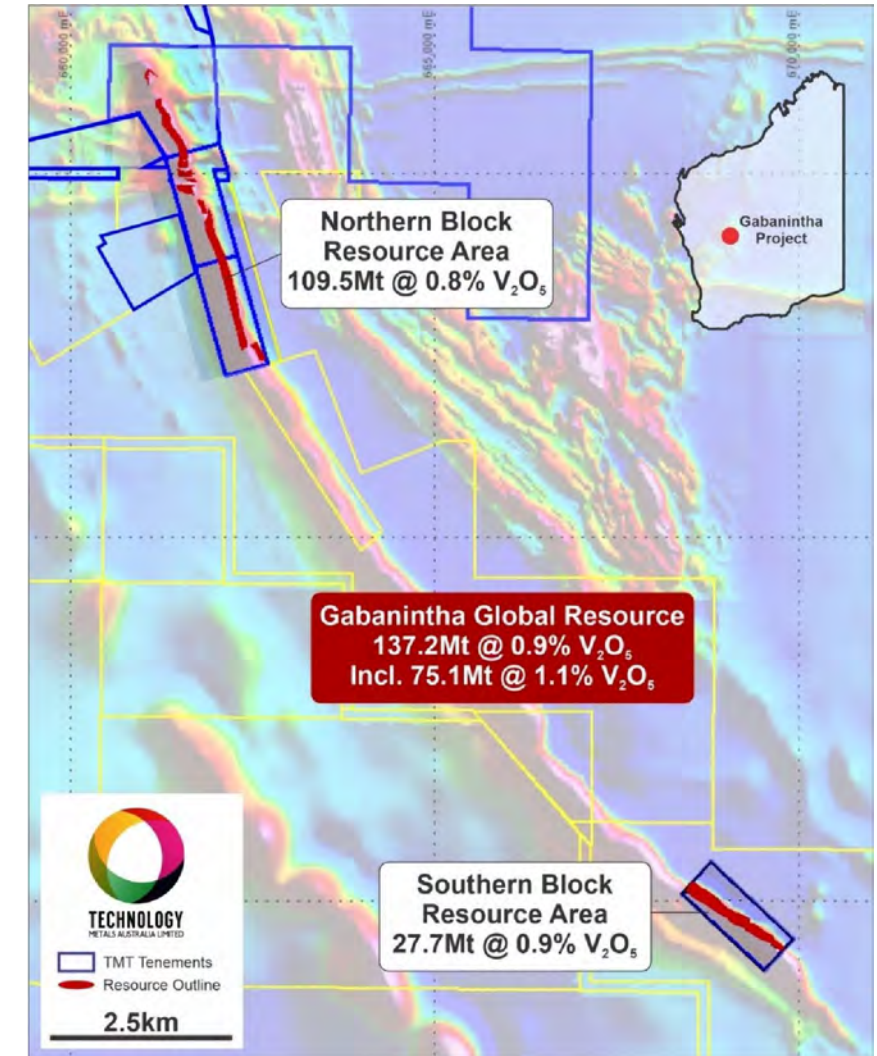
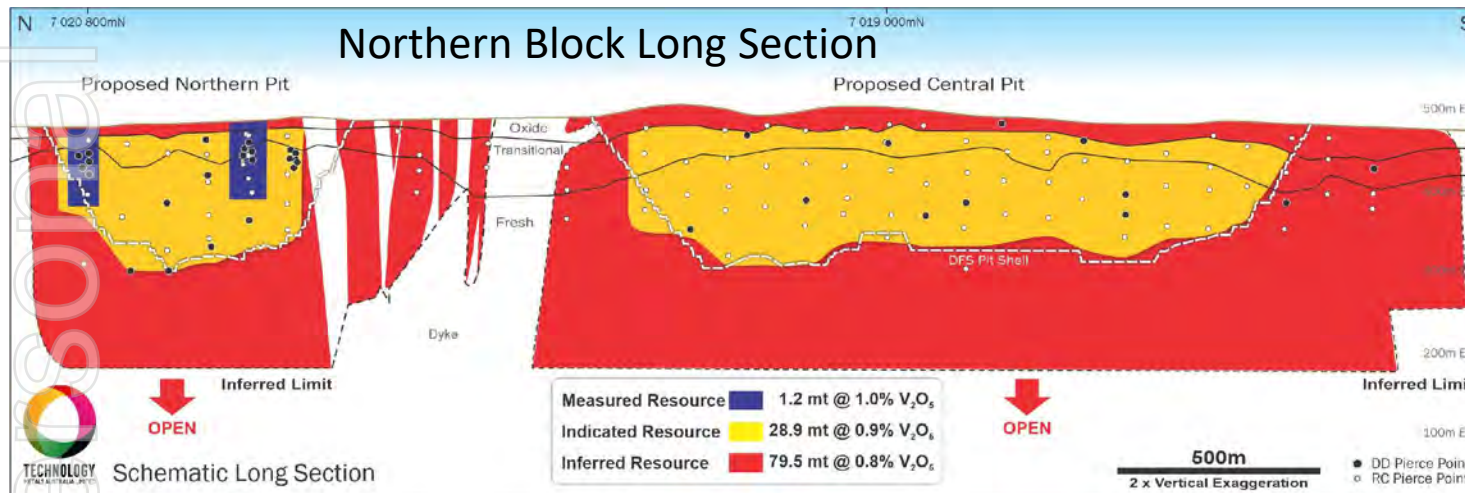


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# World Class Resource – Simple Open Pit Mining

- DFS mine life of 16 years based on Northern Block Ore Reserve of 29.6Mt at 0.88%  $V_2O_5$ .
- Southern Tenement Resource update expands Project Resource to 137.2Mt at 0.9%  $V_2O_5$ .
- High grade component increased to 75.1Mt at 1.1%  $V_2O_5$ .
- Northern Block open pits limited by drilling at depth and on strike to the south.





# Southern Tenement = Opportunity

- Southern Tenement resource update delivers maiden Indicated Resource of 9.6Mt @ 1.0% V<sub>2</sub>O<sub>5</sub>.
- Increases Project Measured and Indicated Resource by 32%.
- Provides clear scope to extend mine life – target of >20 year initial mine life.
- Reserve update underway to incorporate Southern Tenement.
- Metallurgical testwork has delivered the Project's highest average vanadium grades in magnetic concentrate of up to 1.64% - up to 1.73% in individual samples.
- Opportunity to provide flexibility to the operating schedule to maximise early cash.

Material Type	Mass Rec (%)	Fe		V <sub>2</sub> O <sub>5</sub>		SiO <sub>2</sub>		Al <sub>2</sub> O <sub>3</sub>	
		Grade (%)	Dist'n (%)	Grade (%)	Dist'n (%)	Grade (%)	Dist'n (%)	Grade (%)	Dist'n (%)
Massive Fresh	71.9%	60.7	87%	1.48	92%	1.07	15%	1.85	29%
Massive Transition	58.4%	61.5	70%	1.61	77%	1.71	21%	1.34	21%
Hangingwall Fresh	33.9%	61.8	65%	1.64	80%	2.26	4%	1.34	4%
Hangingwall Transition	21.8%	58.3	46%	1.52	60%	2.41	2%	1.29	2%
Footwall Fresh	42.2%	60.2	72%	1.50	86%	2.53	7%	1.07	7%

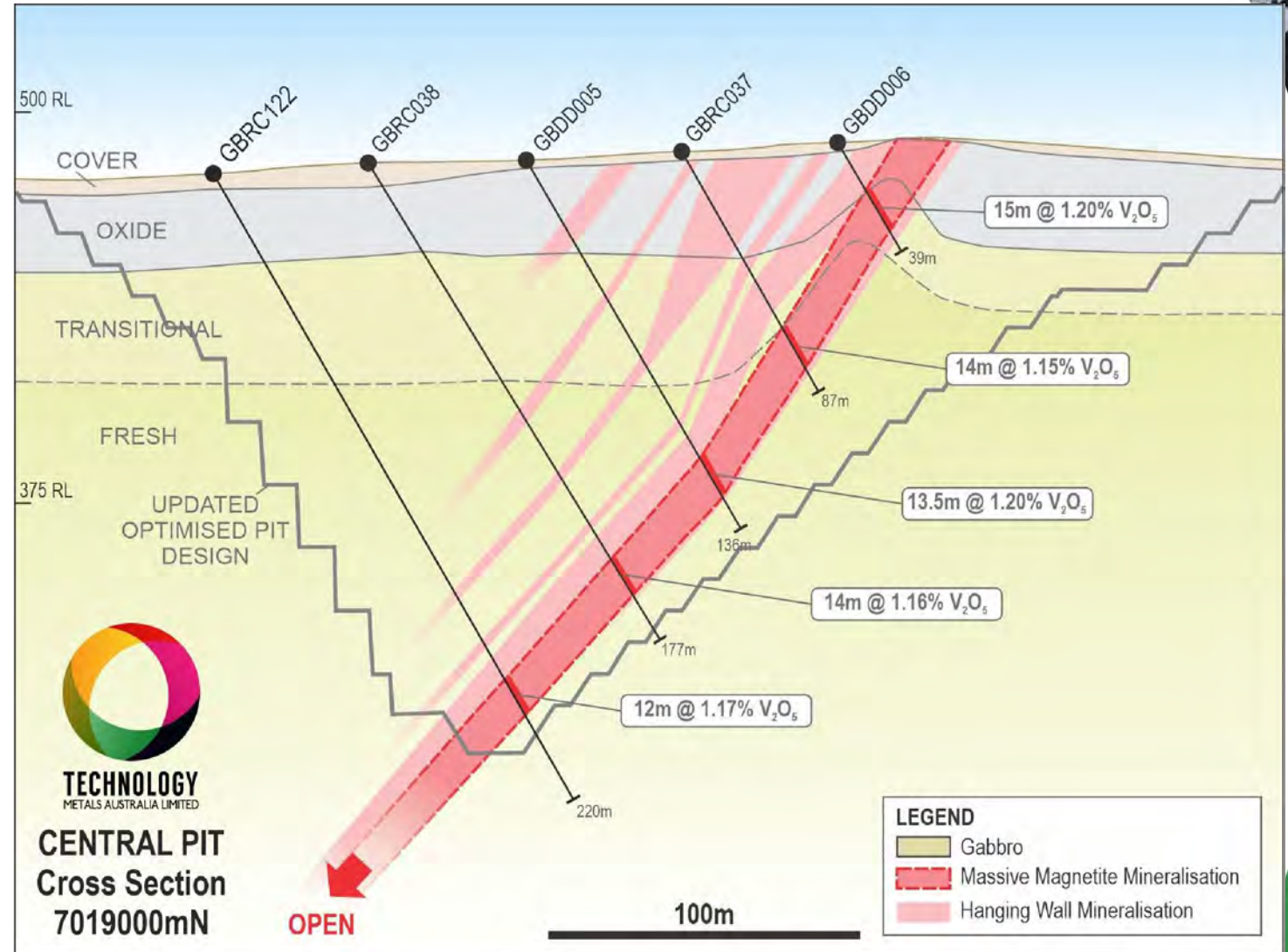
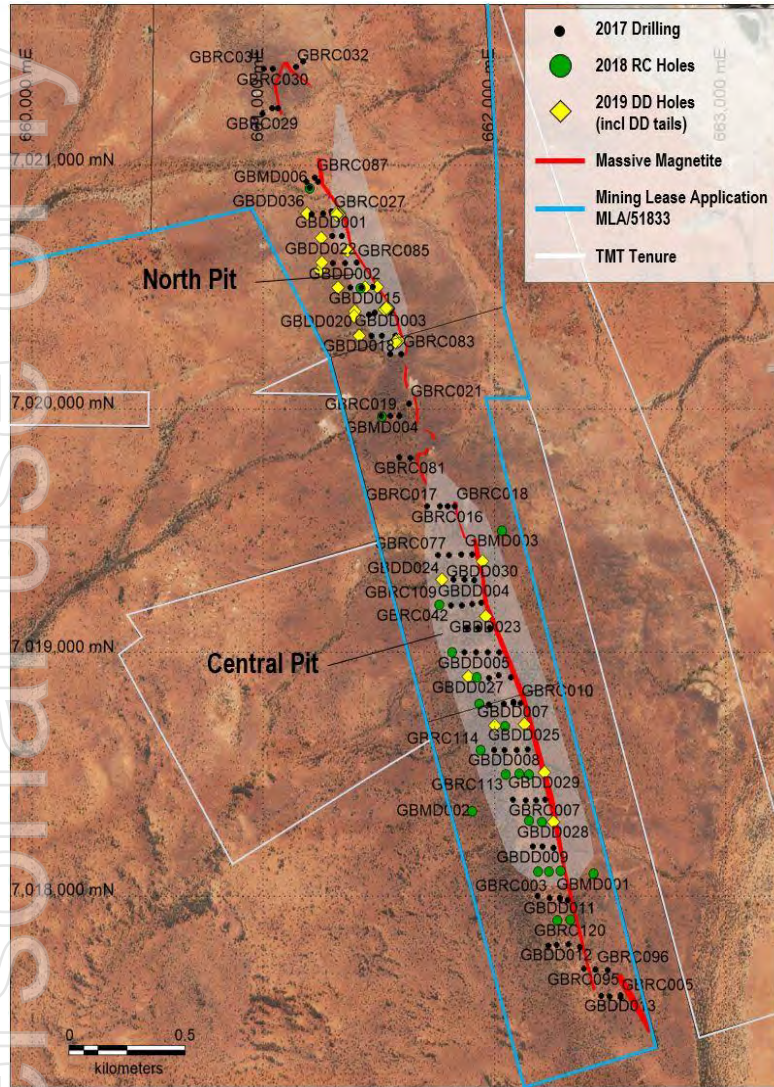
Summary Results of Southern Tenement DTR Testing – Average Results Across a Range of Material Types<sup>1</sup>

<sup>1</sup>Refer TMT ASX announcement dated 29 April 2020 for full details of the Southern tenement Metallurgical Testwork



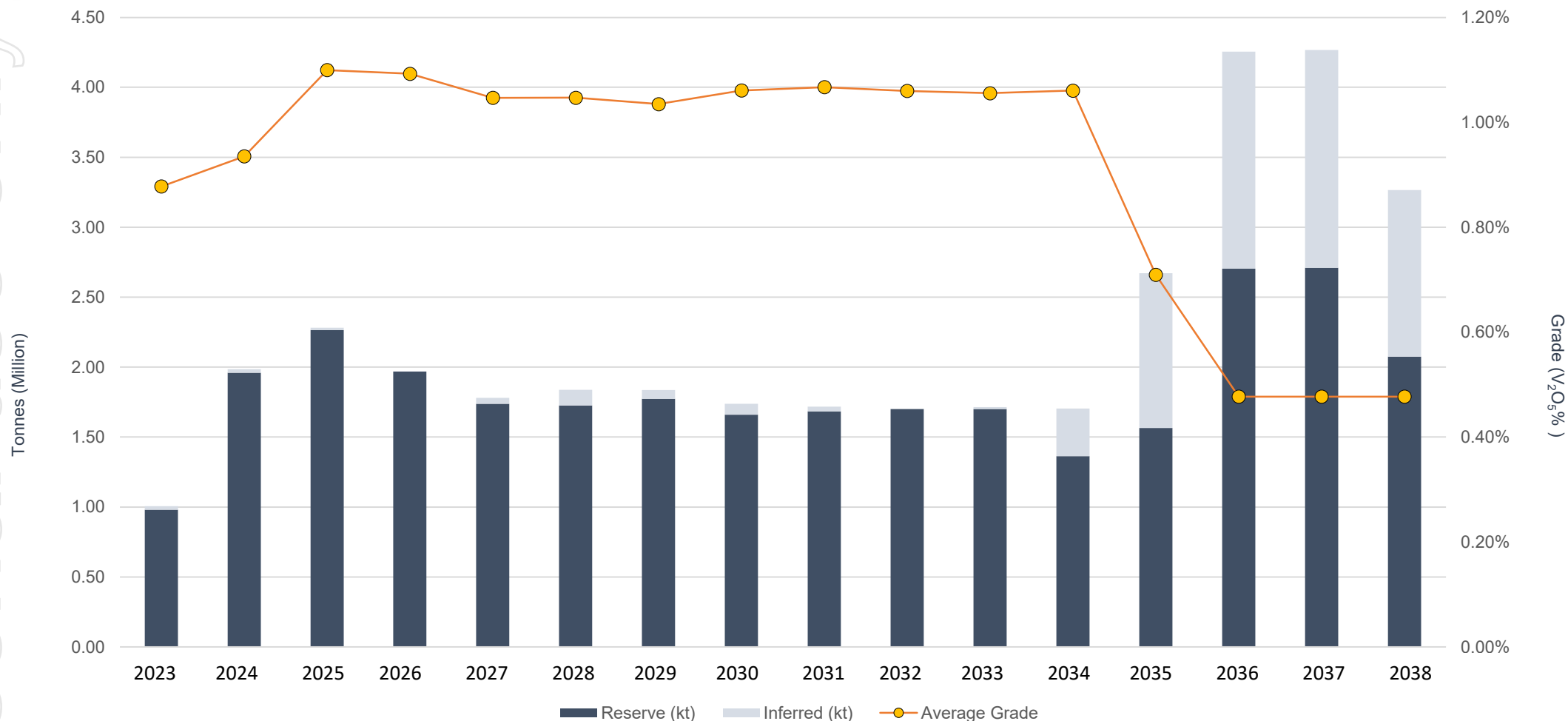
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# Shallow Oxidation – Consistent High Grade Basal Unit





# ROM Feed in Excess of 1%<sup>1</sup>



Annual Crusher Feed Showing Feed Grade and Tonnage plus Distribution of Inferred Mineral Resources  
(Process feed post 2034 sourced from low grade stockpiles built up over LOM – to be displaced with high grade feed from Southern Tenement)

<sup>1</sup>Refer TMT ASX announcement dated 21 August 2019 for full details of the Definitive Feasibility Study

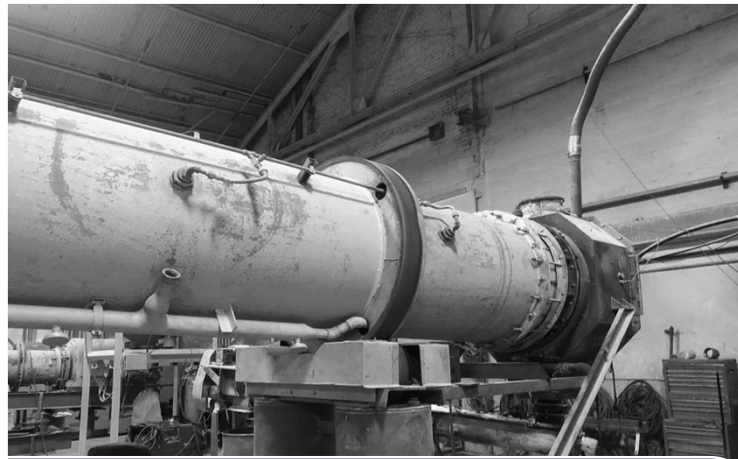
# Pilot Test Work De-Risks Project and Confirms Scalability



## CONFIRMS VERY HIGH YIELD TO MAGNETIC CONCENTRATE

11.5T bulk sample processed through Crushing Milling Beneficiation pilot plant

Confirmed very high yield to magnetic concentrate with low deleterious elements



## PILOT SCALE KILN TESTWORK CONFIRMS VERY HIGH RECOVERY RATES

7.5T of magnetic concentrate processed through pilot scale rotary kiln delivered average vanadium recovery of 88.6%

Confirms end-to-end vanadium recovery of 77% for fresh massive magnetite ore



## DFS INCORPORATES KILN DESIGN AND OPERATING PARAMETERS

Pilot scale continuous salt roast / kiln testwork completed by kiln experts FLSmidth

FLSmidth provided kiln design and operating parameter inputs for DFS





# Offtake Agreements – Binding and MoU

## CNMNC a subsidiary of China Nonferrous Metal Mining Group Company.

- Binding take-or-pay offtake for **2,000Tpa** (4.4Mlb pa) ~16% of annual production.
- Three year term with three-year extension.
- Pricing referenced to the published European and Chinese domestic prices.
- Progressing discussions with sister company, **NFC**, on EPC and scope for funding solutions.

## Shaanxi Fengyuan offtake MOU over 3,000Tpa.

- Take-or-pay ~24% of annual production.
- Five-year term with five-year extension.

## Big Pawa offtake MOU over 1,000Tpa take-or-pay and up to 5,000 Tpa

Offtake discussions progressing with a range of other counterparties across a range of industries and jurisdictions.



6,000 to 10,000 tonnes of TMT's proposed production of 12,800Tpa  $V_2O_5$  covered under Binding Offtake and MoU



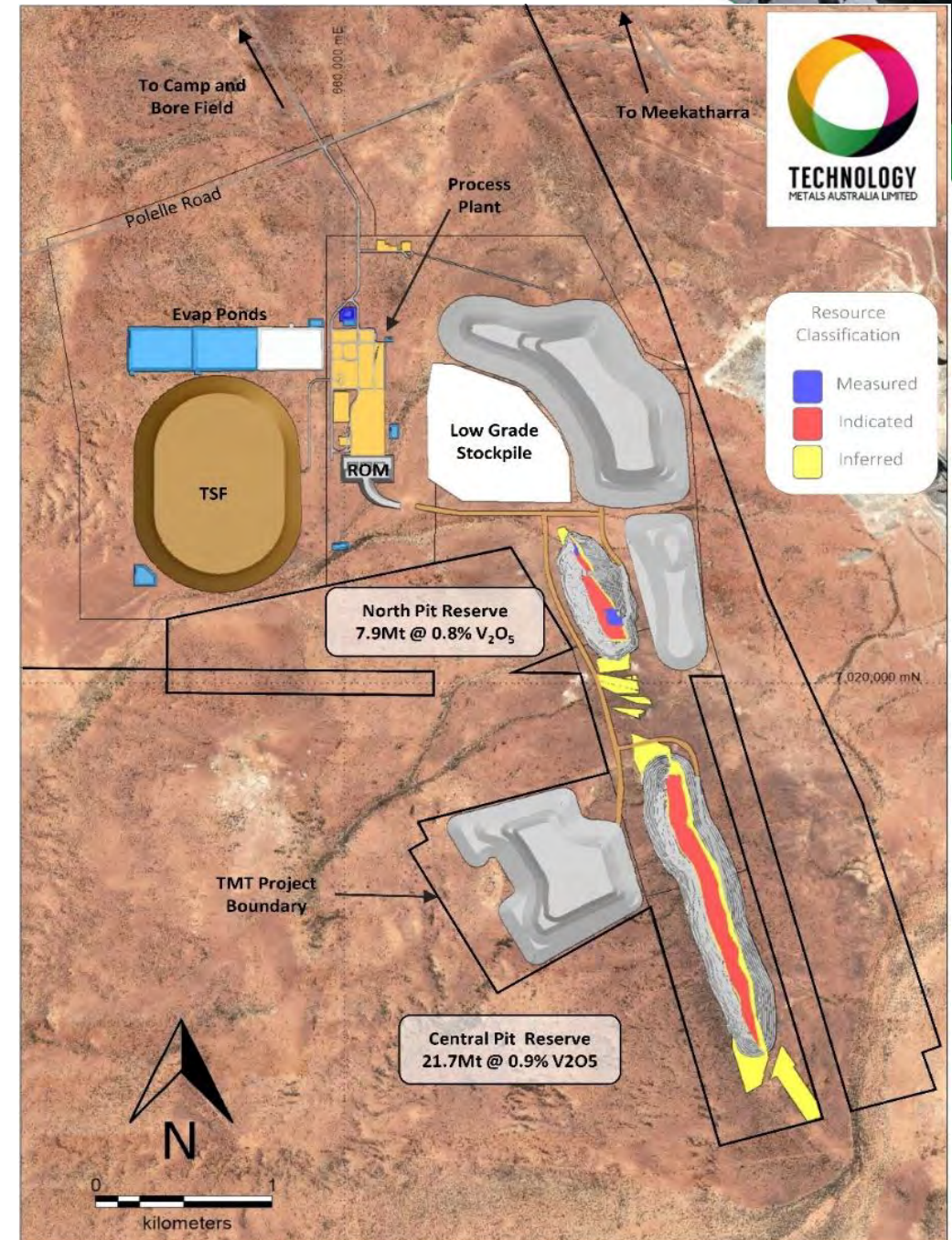
# Project Development Activities

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## MINE LIFE



- Southern Tenement reserve estimation – target mine life extension to **>20 years**.
- Expanding offtake volumes, vanadium market engagement, VRFB strategy.
- Western Australian Government Lead Agency Support
  - Mining licence grant.
  - Environmental approvals.
  - Future battery industry strategy.
- Northern Australia Infrastructure Facility (NAIF) engagement – part of strategic funding approach.
- Equipment vendor engagement – FLSmith kiln supply agreement.
- MOU with AGIG to progress development of gas pipeline infrastructure





# Investment Case

- ✓ **Leveraged** to structural change in the vanadium industry.
- ✓ **Delivering** offtake and partner engagement underpinned by high quality DFS.
- ✓ **Globally Significant** low cost, large scale and long life vanadium project.
- ✓ **Stable** operating environment with excellent infrastructure and access to services.
- ✓ **Team in place** focused on progressing the project to maximise shareholder value.

ASX: TMT; FRA: TN6







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**FOLLOW US AS WE CREATE  
VALUE FOR SHAREHOLDERS**



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# APPENDICES



# One of The Highest Grade Deposits in the World\*

- Global combined resource of **137.2Mt at 0.9% V<sub>2</sub>O<sub>5</sub>**
- High grade resource of **75.1Mt at 1.1% V<sub>2</sub>O<sub>5</sub>** in consistent basal massive magnetite
- Northern Block **Proven and Probable Reserve of 29.6Mt at 0.88% V<sub>2</sub>O<sub>5</sub>** at extremely high 98% tonnage conversion
- Measured and Indicated Resource expanded by 32% to **39.6Mt at 0.9% V<sub>2</sub>O<sub>5</sub>** – reserve update pending

**MINING  
RESERVE**

**29.6Mt  
@ 0.88% V<sub>2</sub>O<sub>5</sub>**

Material Type	Classification	Mt	V <sub>2</sub> O <sub>5</sub> %	Fe%	Al <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %	TiO <sub>2</sub> %	LOI%	P%	S%
Massive Magnetite	<b>Measured (North)</b>	<b>1.2</b>	<b>1</b>	<b>44.7</b>	<b>6.2</b>	<b>10.4</b>	<b>11.4</b>	<b>0</b>	<b>0.009</b>	<b>0.2</b>
	Indicated (North)	18.5	1.1	49.1	5.2	5.8	12.9	-0.1	0.007	0.2
	Indicated (South)	7.3	1.1	49.2	5.1	5.8	12.6	-0.6	0.004	0.3
	<b>Total Indicated</b>	<b>25.8</b>	<b>1.1</b>	<b>49.1</b>	<b>5.1</b>	<b>5.8</b>	<b>12.8</b>	<b>-0.3</b>	<b>0.007</b>	<b>0.2</b>
	Inferred (North)	41	1.1	47.7	5.6	7.1	12.6	0.3	0.008	0.2
	Inferred (South)	7.1	1.1	46.9	5.6	7.4	12.1	0.5	0.005	0.3
	<b>Total Inferred</b>	<b>48.1</b>	<b>1.1</b>	<b>47.6</b>	<b>5.6</b>	<b>7.2</b>	<b>12.5</b>	<b>0.3</b>	<b>0.008</b>	<b>0.2</b>
	<b>Massive Global</b>	<b>75.1</b>	<b>1.1</b>	<b>48.1</b>	<b>5.5</b>	<b>6.8</b>	<b>12.6</b>	<b>0.1</b>	<b>0.007</b>	<b>0.2</b>
Disseminated / Banded Magnetite	Indicated (North)	10.3	0.6	28.6	13.1	25.5	7.5	3	0.03	0.2
	Indicated (South)	2.3	0.7	33.1	9.5	20.6	8.5	2.3	0.014	0.3
	<b>Total Indicated</b>	<b>12.6</b>	<b>0.6</b>	<b>29.5</b>	<b>12.5</b>	<b>24.6</b>	<b>7.7</b>	<b>2.8</b>	<b>0.027</b>	<b>0.2</b>
	Inferred (North)	38.5	0.5	27.1	12.7	27.4	6.9	3.3	0.027	0.2
	Inferred (South)	11	0.6	27.7	13	25.9	7	2.7	0.015	0.3
	<b>Total Inferred</b>	<b>49.5</b>	<b>0.5</b>	<b>27.2</b>	<b>12.8</b>	<b>27.1</b>	<b>6.9</b>	<b>3.2</b>	<b>0.024</b>	<b>0.2</b>
	<b>Diss / Band Global</b>	<b>62.1</b>	<b>0.6</b>	<b>27.7</b>	<b>12.7</b>	<b>26.6</b>	<b>7.1</b>	<b>3.1</b>	<b>0.025</b>	<b>0.2</b>
<b>Combined</b>	<b>Global Combined</b>	<b>137.2</b>	<b>0.9</b>	<b>38.9</b>	<b>8.7</b>	<b>15.7</b>	<b>10.1</b>	<b>1.5</b>	<b>0.015</b>	<b>0.2</b>
*Note: The Mineral Resources were estimated within constraining wireframe solids using a nominal 0.9% V <sub>2</sub> O <sub>5</sub> % lower cut-off grade for the massive magnetite zones and using a nominal 0.4% V <sub>2</sub> O <sub>5</sub> % lower cut-off grade for the banded and disseminated mineralisation zones. The Mineral Resources are quoted from all classified blocks within these wireframe solids above a lower cut-off grade of 0.4% V <sub>2</sub> O <sub>5</sub> %. Differences may occur due to rounding.										

\* – Refer TMT ASX announcements dated 29 March 2019 and 1 July 2020 for full details of the mineral resource estimation.





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# August 19 DFS – Processing<sup>1</sup>

1. **Crushing & Screening** - ROM ore is crushed down to an 80% passing size of 8mm
2. **Grinding & Wet Magnetic Separation** - material ground down to an 80% passing size of 0.25mm, followed by wet magnetic separation to remove finely liberated gangue from the vanadium-bearing magnetite
3. **Roasting** – the vanadium-bearing magnetite concentrate is roasted with sodium-based salt to convert  $V_2O_5$  to water soluble sodium metavanadate. Pilot scale kiln testwork by FLSmidth informed engineering and operating parameters
4. **Leaching & Precipitation** - sodium metavanadate is leached out of the roasted product with water followed by re-precipitation of vanadium into ammonium metavanadate
5. **De-ammoniation & Calcination** - the ammonia is removed from the precipitated product to form a vanadium pentoxide powder / flake product
6. **Packaging** - package the saleable product to meet the requirements for offtake



**HIGH PURITY  
PRODUCT**



**>99%  $V_2O_5$**

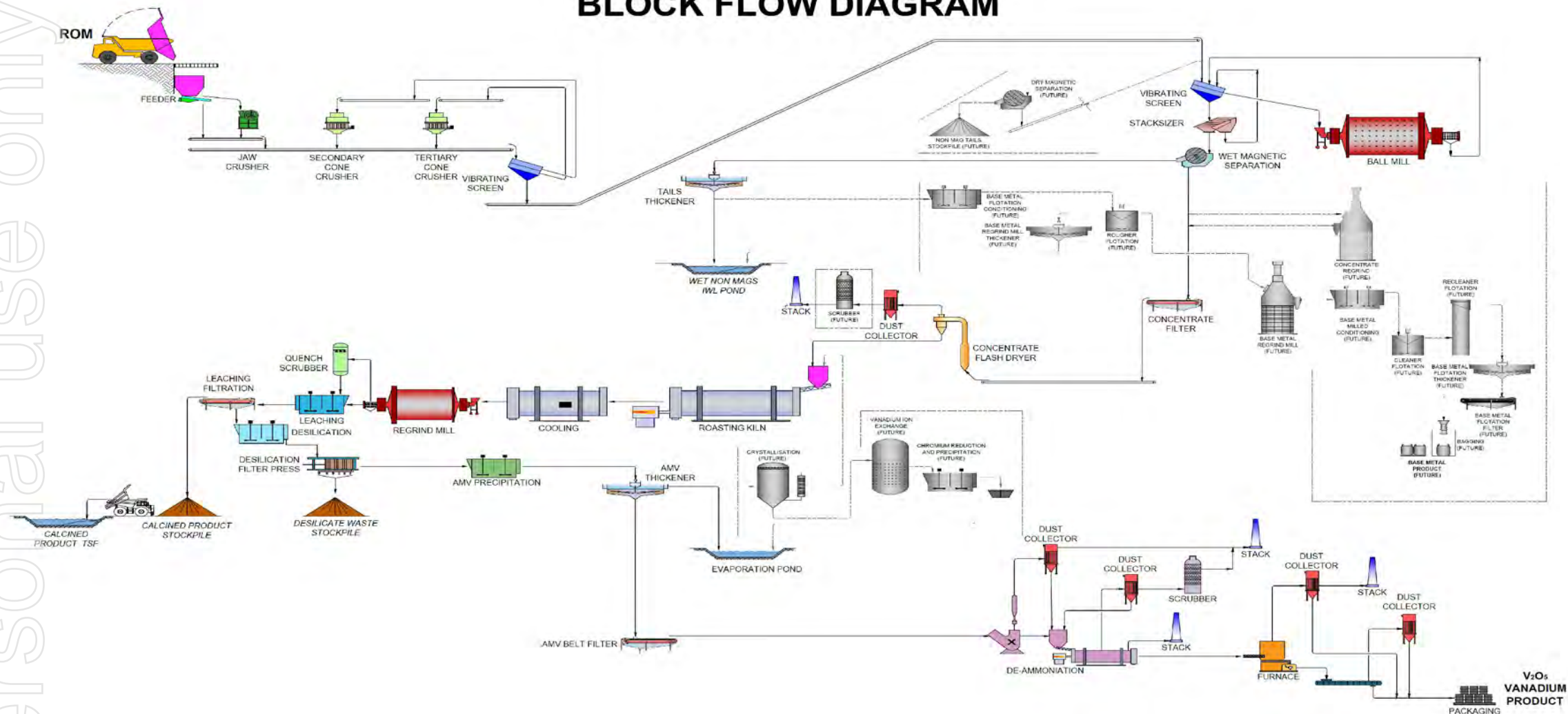
<sup>1</sup>Refer TMT ASX announcement dated 21 August 2019 for full details of the Definitive Feasibility Study



TECHNOLOGY  
METALS AUSTRALIA LIMITED

# Processing Flow Sheet

## BLOCK FLOW DIAGRAM



Schematic Flow Sheet Block Diagram



# August 19 DFS

## – Material Physical Assumptions & Anticipated Outputs\*

PRODUCTION



Key Metric	Unit	DFS
Average V <sub>2</sub> O <sub>5</sub> Production Rate	MIb Per Annum	27.9
Targeted Production Commencement	Year	2022
Estimated Mine / Processing Life	Years	+16
Life of Mine Production	MIb V <sub>2</sub> O <sub>5</sub>	447.1
Processing Rate – ROM (Yrs 1 – 12)	Mtpa	1.7 - 2.3
Estimated mineralisation to be mined	Mt	35.7
Average LOM Strip Ratio		4.3
Average Diluted Mining Grade (LOM)	% V <sub>2</sub> O <sub>5</sub>	0.83
Average Plant Feed Grade (Yrs 1 -12)	% V <sub>2</sub> O <sub>5</sub>	1.04
Average Yield to Mag Con (Yrs 1 – 12) <sup>1</sup>	%	71
Average V Recovery (Yrs 1 – 12) <sup>1</sup>	%	70

Conservative throughput and recovery ramp up assumptions of +2 years.

Operating parameters based on the lower end of the range of parameters defined from pilot scale test work.

Kiln pilot scale test work completed by industry leading kiln supplier FLSmidth.



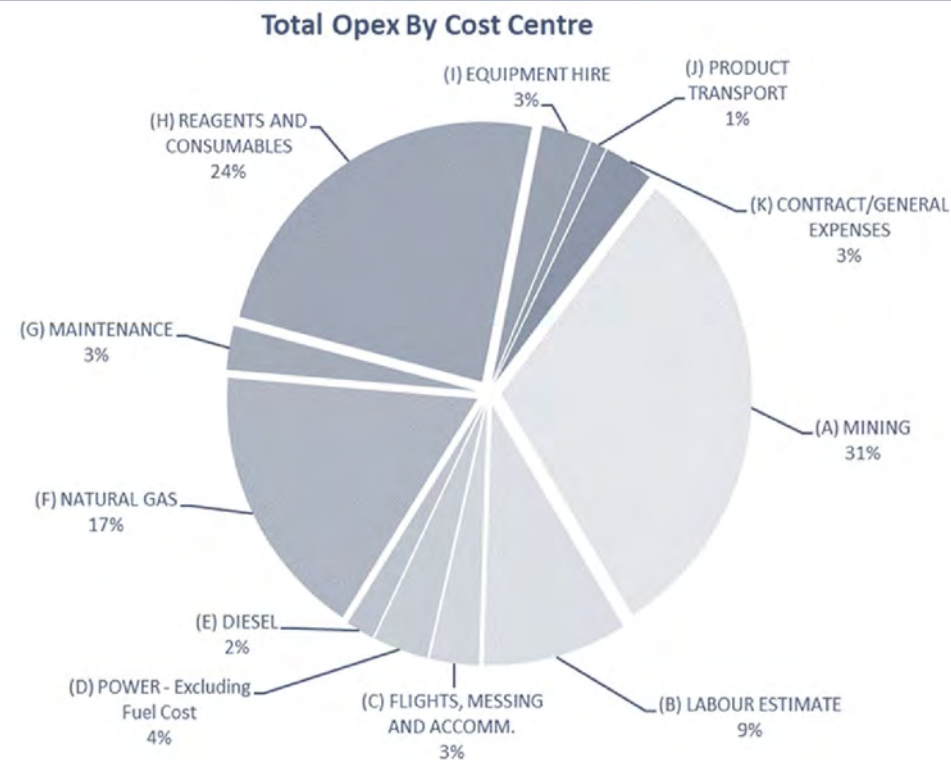
<sup>1</sup>Includes two year ramp up period, and blended transitional / partly oxidised feed in the early years

\*Refer TMT ASX announcement dated 21 August 2019 for full details of the Definitive Feasibility Study

# Process Plant Capex and Operating Cost Breakdown

GVP DFS <sup>1</sup> Major Capital Areas	Total (A\$)
Mining	185,107
Process Plant	169,269,827
Tailings Facility	21,568,006
Infrastructure	45,940,142
Services	28,660,977
Other Items (Spares, First Fills etc.)	6,354,685
Indirects (EPCM, Owners Costs, Insurances etc.)	132,341,850
<b>CAPEX EXCLUDING CONTINGENCY</b>	<b>\$404,320,593</b>
<b>CONTINGENCY</b>	<b>\$49,485,583</b>
<b>CAPEX INCLUDING CONTINGENCY</b>	<b>\$453,806,176</b>

## GVP Operating Cost Estimate Breakdown



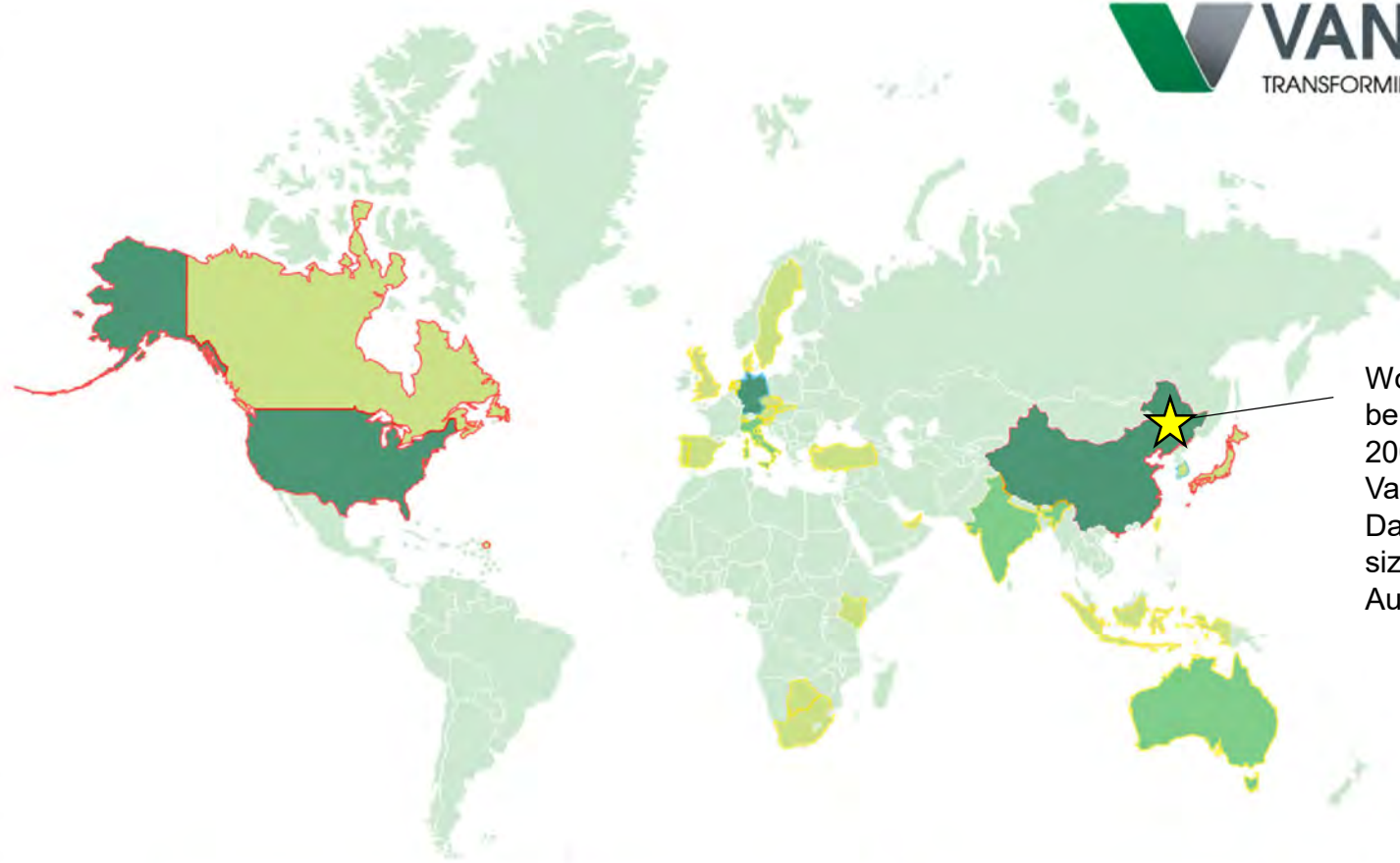
<sup>1</sup>Refer TMT ASX announcement dated 21 August 2019 for full details of the Definitive Feasibility Study



# Globally - 113 VRFB Installations and growing

Country	VRFBs	kW	kWh
Australia	7	945	4,629.90
Barbuda	1	3,000	12,000.00
Botswana	1	112	560.00
Canada	3	2,500	10,000.00
China	17	15,825	48,005.00
Czech Rep.	3	47	209.90
Denmark	3	40	260.00
Germany	15	1,530	86,190.00
India	4	155	740.15
Indonesia	2	400	500.00
Italy	5	631	2,610.00
Japan	5	2,330	7,481.00
Netherlands	1	10	80.00
Portugal	5	5	60.00
Singapore	1	250	2,000.00
Slovenia	1	10	45.00
South Africa	2	745	2,950.00
South Korea	5	1,250	4,900.00
Spain	4	220	800.00
Sweden	1	800	1,800.00
Switzerland	2	210	460.00
U. Kingdom	5	805	5,180.00
USA	17	7,418	33,173.70
Austria	1	14	84.00
Kenya	1	140	84.00
Slovakia	2	107	640.00
UAE	1	10	40.00
Taiwan	1	125	750.00
Turkey	1	10	40.00

Last updated 30- 04 - 2019



World's Largest Battery will be Rongke Power's 200MW/800MWh Vanadium Flow Battery in Dalian China (Double the size of Australia's South Australian Li-ion battery)

113 VRFB Installations globally

39,664 kW of power

209,800 kWh of energy

Number of VRFBs  
 ● 1 - 5 VRFBs    ● 6 - 10 VRFBs    ● > 11 VRFBs

Size of VRFBs in Kilowatts  
 ● 1 - 1000 kW    ● 1001 - 2000 kW    ● > 2000 kW

# Australia – 6 Installations, 50MW Battery in Development

- Australia is adopting VRFBs as a viable alternative to lithium-iron batteries for large scale stationary storage applications.
- A large 50MW/200MWh VRFB battery linked to a 50MW solar farm to be built as part of the Pangea Storage Project in Port Augusta, South Australia.
- This will be an important point of reference for VRFBs, increasing exposure and proving long lived grid scale application <https://www.cellcubeenergystorage.com/cube-press-release-5142019>.

Size	Location	Company	Year	Site	Standalone / Network
30kW, 130kWh	Sydney, NSW	CellCube	2015	University of NSW	Standalone
10kW, 100kWh	Busselton, WA	VSUN	2016	Native tree nursery	Standalone
25kW, 100kWh	Perth, WA	Protean Energy	2018	Industrial site	Standalone
80kW, 320kWh	Meredith, VIC	VSUN	2019	Dairy Farm	Standalone
20kW, 80kWh	Packenham, VIC	VSUN	2019	Orchard	Standalone
180kW, 900kWh	Melbourne, VIC	RedT	2018	Monash University	Network
In Construction / Planned					
<b>50MW, 200MWh</b>	<b>Port Augusta, SA</b>	<b>CellCube</b>	<b>2020</b>	<b>Pangea Storage Project</b>	<b>Network</b>
Unknown	East Pilbara, WA	VSUN	2020	Strelly Community School	Standalone

