



**TECHNOLOGY**  
METALS AUSTRALIA LIMITED

ASX Announcement

8 August 2018

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**

Sonu Cheema:  
**Director and Company Secretary**

#### Issued Capital

33,125,001 ("TMT") Fully Paid Ordinary Shares

22,500,000 Fully Paid Ordinary Shares classified as restricted securities

14,675,000 Unquoted Options exercisable at \$0.25 on or before 31 December 2019 – 13,700,000 classified as restricted securities

3,000,000 Unquoted Options exercisable at \$0.35 on or before 12 January 2021

6,666,666 – Quoted Options ("TMTO") exercisable at \$0.40 on or before 24 May 2020

3,333,334 - Unquoted Options exercisable at \$0.40 on or before 24 May 2020 vest on 15 September 2018

**ASX Code: TMT, TMTO**

**FRA Code: TN6**

# COMMENCEMENT OF DFS AND DRILLING AT GABANINTHA

## HIGHLIGHTS

- DEFINITIVE FEASIBILITY STUDY COMMENCED ON 31 JULY 2018.
- HIGH QUALITY TEAM OF EXPERIENCED INDUSTRY EXPERT CONSULTANTS ENGAGED TO DELIVER DFS IN JUNE QUARTER 2019.
- STAGE 1 FOLLOW UP DRILLING PROGRAM COMMENCED ON 5 AUGUST 2018.
- DRILLING DESIGNED TO DELIVER GEOTECHNICAL DATA, EXTEND INDICATED RESOURCE AND PROVIDE ADDITIONAL SAMPLE FOR METALLURGICAL TESTWORK.
- STAGE 1 PROGRAM CONSISTS OF ~6,600M OF DRILLING, DIVIDED BETWEEN 2,700M OF DIAMOND DRILLING AND 3,900M OF RC DRILLING.

## BACKGROUND

Technology Metals Australia Limited (ASX: TMT) ("**Technology Metals**" or the "**Company**") is pleased to announce the commencement of the definitive feasibility study ("**DFS**") at its Gabanintha Vanadium Project ("**Gabanintha**" or "**Project**"). The commencement of the DFS follows the delivery in June 2018 of the pre-feasibility study ("**PFS**") on the development of the Gabanintha Vanadium Project, based on the Indicated Mineral Resource of 21.6 Mt at 0.9% V<sub>2</sub>O<sub>5</sub> in the Northern Block of tenements, which confirmed the Project to be a high value, relatively low risk and technically strong development opportunity<sup>1</sup>.

The level of detail and high quality of the PFS has enabled this rapid transition to the DFS. The DFS is scheduled for completion in the June quarter 2019.

The stage 1 drilling program, which has commenced in step with the commencement of the DFS, is designed to provide the initial data in support of the Project enhancement opportunities identified in the PFS, such as upgrading the Indicated Resource, geotechnical assessment aimed at enabling steeper pit walls and the generation of additional diamond core sample for the ongoing metallurgical testwork program.

**Managing Director Ian Prentice commented:** "This is a very exciting time for the Company as we transition from the outstanding PFS result in to the DFS stage, aimed at rapidly progressing this globally significant vanadium Project along the development pathway".

<sup>1</sup> – Technology Metals Australia – ASX Announcement dated 21 June 2018, TMT Delivers Robust Gabanintha Pre-Feasibility Study; Direct Progression to Definitive Feasibility Study.

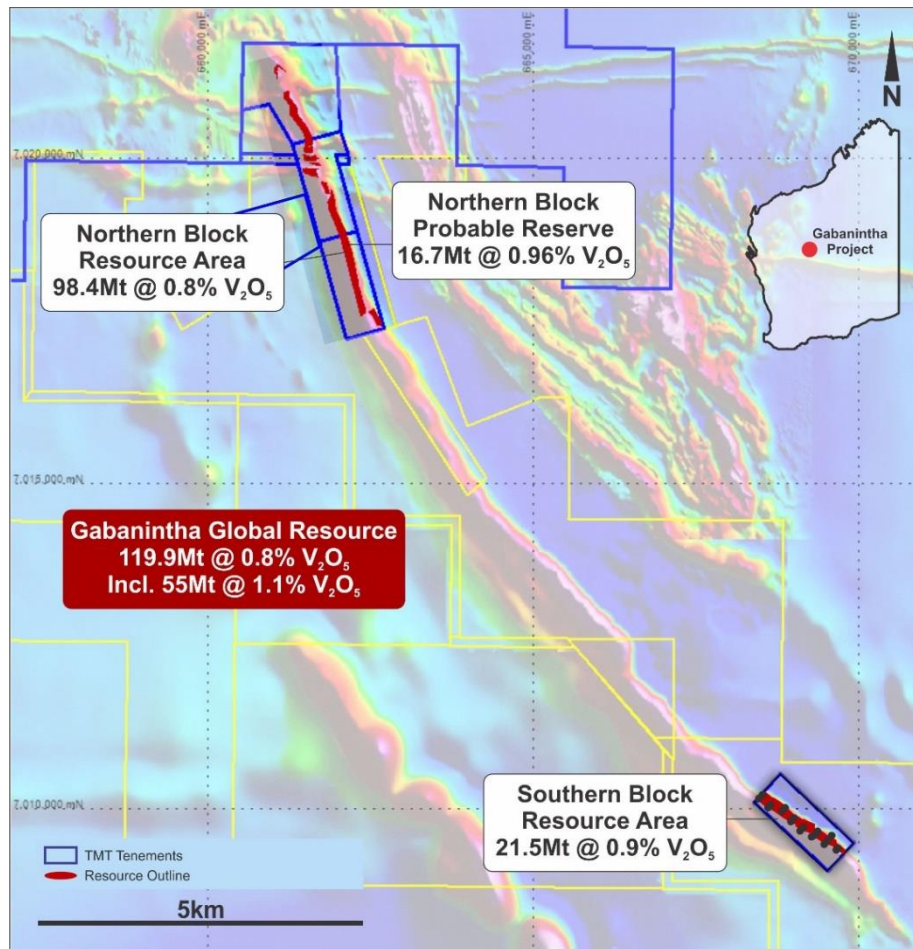


Figure 1: Gabanintha Vanadium Project Layout

## DEFINITIVE FEASIBILITY STUDY

The Gabanintha pre-feasibility study ("PFS") completed in June 2018, based on the Indicated Mineral Resource contained within the Northern Block of tenements and developed to a confidence level of -15% to +25%, confirmed the Project to be a high value, relatively low risk and technically strong development opportunity. The outstanding results, level of detail and high quality of the PFS has enabled the Company to transition directly to the commencement of a definitive feasibility study ("DFS") on the development of the Project.

The DFS formally commenced on Tuesday 31 July 2018 with the engagement of a high quality team of experienced industry expert consultants focused on delivering a high quality outcome in a time frame to support the rapid development of this outstanding project. The DFS is being managed on behalf of the Company by Wave International ("Wave"), an independent resource development / engineering consultant, as the lead consultant supported by a range of industry leading consultants with considerable expertise in their fields. The other consultants engaged in the preparation of the DFS are:

- METS Engineering for ongoing metallurgical testwork, product assessment and mineral processing, supported by a range of accredited laboratories.
- CSA Global for resource and mining study work, supported by third party geotechnical engineering consultants, and
- Integrate Sustainability for environmental, heritage, health, safety and statutory approvals advice and support.

The DFS will:

- further develop the processing flowsheet,
- update plant engineering and site / infrastructure assessments, specifying and requesting tenders on major long lead items,
- revise open pit mine design incorporating updated geotechnical data and scheduling based on detailed geometallurgical data,
- provide an updated ore reserve estimate within and expanded global mineral resource,
- progress environmental and heritage studies in support of advancing mining lease grant and statutory approvals, and
- provide revised capital and operating cost estimates to a DFS level of accuracy and an updated Project financial model.

The Company and its team of experienced industry expert consultants are focused on delivering a very high quality DFS aimed at rapidly progressing the development of the globally significant Gabanintha Vanadium Project, with the DFS scheduled for completion in the June quarter 2019.

### STAGE 1 DRILLING PROGRAM

The stage 1 follow up drilling program designed to provide the initial data in support of the Project enhancement opportunities identified in the PFS commenced on 5 August 2018. This program, which is aligned with the commencement of the DFS, consists of approximately 6,600m of drilling across the Northern Block of tenements and the Southern Tenement.

This program is designed to:

- extend the Northern Block Mineral Resource estimate both along strike and at depth to increase the overall resource size and the Indicated Mineral Resource category / Probable Reserve estimate (see Figure 2;
- upgrade, and convert part of, the Southern Tenement Inferred Mineral Resource estimate to the Indicated Resource category;
- provide geotechnical data, in particular for the footwall portions of the designed pits, to provide sufficient geotechnical data that is expected to enable a steepening of the designed open pit walls, thereby dramatically decreasing the overall strip ratio; and
- generate additional diamond core sample for the ongoing metallurgical testwork program.

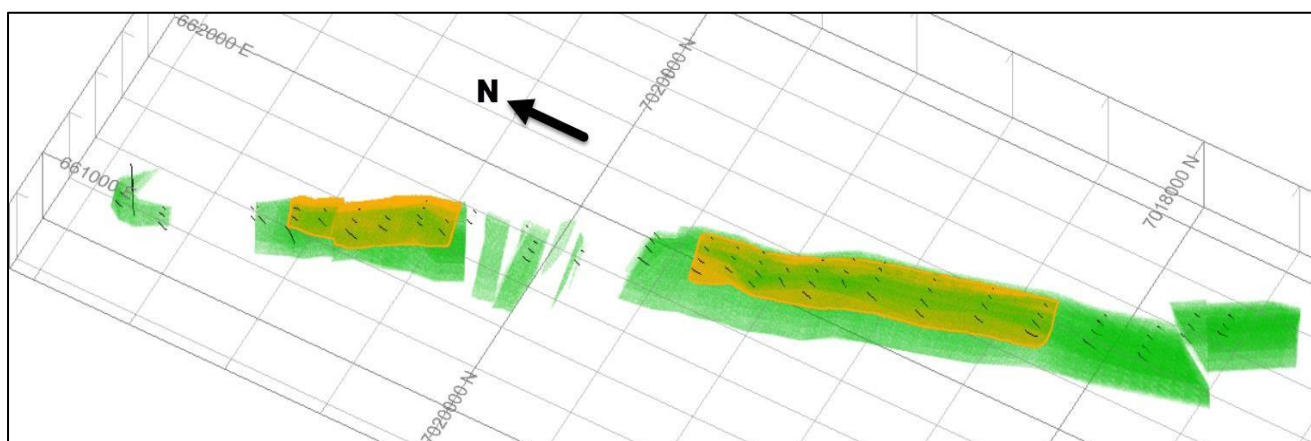


Figure 2: Northern Block Mineral Resource (Indicated – orange, Inferred – green)

The stage 1 drilling program is expected to consist of approximately 2,700m of PQ diamond core and 3,900m of RC drilling. The diamond drilling contractors have mobilised to site and commenced drilling on Sunday 5 August, with the RC drilling contractors expected to mobilise to site within the week.

Drilling on the Northern Block of tenements is planned to consist of:

- 15 diamond holes (4 pre collared), including 12 holes collecting geotechnical footwall data and 2 holes specifically targeting the western proposed pit walls for a total of 2115m
- 17 RC holes and 4 RC pre-collars for 3065m of resource infill and extension drilling.

Drilling at the Southern Tenement is planned to consist of:

- 4 diamond holes, including 3 holes collecting geotechnical data, for a total of 610m, and
- 8 RC holes for 845m of resource infill and extension drilling.

This initial phase of drilling is expected to be completed over a 6 to 8 week period.



## ABOUT VANADIUM

Vanadium is a hard, silvery grey, ductile and malleable speciality metal with a resistance to corrosion, good structural strength and stability against alkalis, acids and salt water. The elemental metal is rarely found in nature. The main use of vanadium is in the steel industry where it is primarily used in metal alloys such as rebar and structural steel, high speed tools, titanium alloys and aircraft. The addition of a small amount of vanadium can increase steel strength by up to 100% and reduces weight by up to 30%. Vanadium high-carbon steel alloys contain in the order of 0.15 to 0.25% vanadium while high-speed tool steels, used in surgical instruments and speciality tools, contain in the range of 1 to 5% vanadium content. Global economic growth and increased intensity of use of vanadium in steel in developing countries will drive near term growth in vanadium demand.

An emerging and likely very significant use for vanadium is the rapidly developing energy storage (battery) sector with the expanding use and increasing penetration of the vanadium redox batteries ("VRB's"). VRB's are a rechargeable flow battery that uses vanadium in different oxidation states to store energy, using the unique ability of vanadium to exist in solution in four different oxidation states. VRB's provide an efficient storage and re-supply solution for renewable energy – being able to time-

shift large amounts of previously generated energy for later use – ideally suited to micro-grid to large scale energy storage solutions (grid stabilisation). Some of the unique advantages of VRB's are:

- a lifespan of 20 years with very high cycle life (up to 20,000 cycles) and no capacity loss,
- rapid recharge and discharge,
- easily scalable into large MW applications,
- excellent long term charge retention,
- improved safety (non-flammable) compared to Li-ion batteries, and
- can discharge to 100% with no damage.

Global economic growth and increased intensity of use of vanadium in steel in developing countries will drive near term growth in vanadium demand.

The global vanadium market has been operating in a deficit position for the past five years (source: TTP Squared Inc), with a forecast deficit of 9,700 tonnes in 2017. As a result, vanadium inventories have been in steady decline since 2010 and they are forecast to be fully depleted in 2017 (source: TTP Squared Inc). Significant production declines in China and Russia have exacerbated this situation, with further short term production curtailment expected in China as a result of potential mine closures resulting from environmental restrictions and the banning of the import of vanadium slag.

The tightening supplies of vanadium are resulting in a global shortage, with prices appreciating dramatically since mid 2017, with the vanadium pentoxide prices have increased further in 2018 to in excess of US\$19/lb V<sub>2</sub>O<sub>5</sub>, from a low of less than US\$4/lb V<sub>2</sub>O<sub>5</sub> in early 2017.

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

Ian Prentice

**Managing Director**

**Technology Metals Australia Limited**

- ENDS -

### **About Technology Metals Australia Limited**

**Technology Metals Australia Limited (ASX: TMT)** was incorporated on 20 May 2016 for the primary purpose of identifying exploration projects in Australia and overseas with the aim of discovering commercially significant mineral deposits. The Company's primary exploration focus is on the Gabanintha Vanadium Project located 40 km south east of Meekatharra in the mid-west region of Western Australia with the aim to develop this project to potentially supply high-quality V<sub>2</sub>O<sub>5</sub> flake product to both the steel market and the emerging vanadium redox battery (VRB) market.

The Project consists of seven granted tenements (and two Mining Lease applications). Vanadium mineralisation is hosted by a north west – south east trending layered mafic igneous unit with a distinct magnetic signature. Mineralisation at Gabanintha is similar to the Windimurra Vanadium Deposit, located 270km to the south, and the Barrambie Vanadium-Titanium Deposit, located 155km to the south east. The key difference between Gabanintha and these deposits is the consistent presence of the high grade massive vanadium – titanium – magnetite basal unit, which results in an overall higher grade for the Gabanintha Vanadium Project.

Data from the Company's 2017 drilling programs (85 RC holes (for 8,386 m) and 13 HQ diamond holes (for 1,235.5 m) at the Northern Block and 23 RC holes (for 2,232 m) at the Southern Tenement) has been used by independent geological consultants CSA Global to generate a global Inferred and Indicated Mineral Resource estimate, reported in accordance with the JORC Code 2012 edition, for the Project. The Resource estimate confirmed the position of the Gabanintha Vanadium Project as one of the highest grade vanadium projects in the world.

Table 1: Global Mineral Resource estimate for the Gabanintha Vanadium Project as at 5 March 2018

Technology Metals Gabanintha Vanadium Project - Global Mineral Resources as at March 2018										
Material	Classification	Tonnage (Mt)	V2O5%	Fe%	Al2O3%	SiO2%	TiO2%	LOI%	P%	S%
Massive magnetite	Indicated	14.5	1.1	49.2	5.1	5.8	12.8	-0.2	0.007	0.2
	Inferred	40.5	1.1	48.3	5.5	6.5	12.7	0.2	0.007	0.2
	<b>Indicated + Inferred</b>	<b>55.0</b>	<b>1.1</b>	<b>48.5</b>	<b>5.4</b>	<b>6.3</b>	<b>12.7</b>	<b>0.1</b>	<b>0.007</b>	<b>0.2</b>
Disseminated magnetite	Indicated	7.1	0.6	29.9	12.6	24.4	7.8	2.9	0.032	0.1
	Inferred	57.7	0.6	27.2	13.7	26.7	7.2	4.0	0.024	0.2
	<b>Indicated + Inferred</b>	<b>64.9</b>	<b>0.6</b>	<b>27.5</b>	<b>13.5</b>	<b>26.4</b>	<b>7.2</b>	<b>3.9</b>	<b>0.025</b>	<b>0.2</b>
<b>Combined</b>	<b>Indicated + Inferred</b>	<b>119.9</b>	<b>0.8</b>	<b>37.1</b>	<b>9.8</b>	<b>17.2</b>	<b>9.7</b>	<b>2.1</b>	<b>0.016</b>	<b>0.2</b>

\* Note: The Mineral Resource was estimated within constraining wireframe solids using a nominal 0.9% V2O5 lower cut-off for the Massive magnetite zone and using a nominal 0.4% V2O5 lower cut-off for the banded and disseminated mineralisation zones. The Mineral Resource is quoted from all classified blocks within these wireframe solids above a lower cut-off grade of 0.4% V2O5. Differences may occur due to rounding.

Data from the Global Mineral Resource and the recently completed PFS on the Gabanintha Vanadium Project were used by independent consultants CSA Global to generate a maiden Probable Ore Reserve estimate based on the Indicated Mineral Resource of 21.6 Mt at 0.9% V<sub>2</sub>O<sub>5</sub> located within the Northern Block of tenements at Gabanintha.

Table 2: Ore Reserve Estimate as at 31 May 2018

Reserve Category	Tonnes (Mt)	Grade V <sub>2</sub> O <sub>5</sub> %	Contained V <sub>2</sub> O <sub>5</sub> Tonnes (Mt)
Proven	-	-	-
Probable	16.7	0.96	0.16
<b>Total</b>	<b>16.7</b>	<b>0.96</b>	<b>0.16</b>

- Includes allowance for mining recovery (95%) and mining dilution (10% at 0.0 %V<sub>2</sub>O<sub>5</sub>)
- Rounding errors may occur

Capital Structure	
Tradeable Fully Paid Ordinary Shares	33.125m
Escrowed Fully paid Ordinary Shares <sup>1</sup>	22.5m
Fully Paid Ordinary Shares on Issue	55.625m
Unquoted Options <sup>2</sup> (\$0.25 – 31/12/19 expiry)	14.675m
Unquoted Options (\$0.35 – 12/01/21 expiry)	3.0m
Unquoted Options <sup>3</sup> (\$0.40 – 24/05/20 expiry)	10.0m

1 – 22.5 million fully paid ordinary shares will be tradeable from 21 December 2018.

2 – 13.7 million unquoted options are subject to restriction until 21 December 2018.

3 – 3,333,334 options vest to eligible employees and consultants on 15 September 2018.

### Forward-Looking Statements

This document includes forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Technology Metal Australia Limited's planned exploration programs, corporate activities and any, and all, statements that are not historical facts. When used in this document, words such as "could," "plan," "estimate," "expect," "intend," "may", "potential," "should" and similar expressions are forward-looking statements. Technology Metal Australia Limited believes that its forward-looking statements are reasonable; however, forward-looking statements involve risks and uncertainties and no assurance can be given that actual future results will be consistent with these forward-looking statements. All figures presented in this document are unaudited and this document does not contain any forecasts of profitability or loss.

### Competent Persons Statement

The information in this report that relates to Exploration Results are based on information compiled by Mr Ian Prentice. Mr Prentice is a 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 Aaron Meakin. Mr Meakin is a Principal Consultant with CSA Global and a Member of the Australian Institute of Mining and Metallurgy. Mr Meakin 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 Meakin 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 Damian Connelly who is a Fellow of The Australasian Institute of Mining and Metallurgy and a full time employee of METS. Damian Connelly 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 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**"). 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.