



**TECHNOLOGY**  
METALS AUSTRALIA LIMITED

**ASX Announcement**

**1 October 2019**

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#### **Directors**

Michael Fry:  
**Chairman**

Ian Prentice:  
**Managing Director**

Sonu Cheema:  
**Director and Company Secretary**

#### **Issued Capital**

87,554,167 ("TMT") Fully Paid  
Ordinary Shares

14,888,750 – Quoted Options  
("TMTO") exercisable at \$0.40 on or  
before 24 May 2020

20,598,334 – Unquoted Options –  
various exercise prices and dates

**ASX Code: TMT, TMTO**

**FRA Code: TN6**



# **OFFTAKE MOU WITH LEADING CHINESE VANADIUM NITROGEN PRODUCER**

## **HIGHLIGHTS**

- MEMORANDUM OF UNDERSTANDING EXECUTED WITH SHAANXI FENGYUAN VANADIUM TECHNOLOGY DEVELOPMENT CO, LTD.
- FENGYUAN IS ONE OF CHINA'S LEADING PRODUCERS OF VANADIUM NITROGEN ALLOY (VN) WITH PRODUCTION CAPACITY OF 10,000 TPA VN.
- MOU ESTABLISHES THE FRAMEWORK FOR A BINDING V<sub>2</sub>O<sub>5</sub> OFFTAKE AGREEMENT COVERING 3,000 TPA OF TMT'S PROPOSED AVERAGE 12,800 TPA V<sub>2</sub>O<sub>5</sub> PRODUCTION.
- THE AGREEMENT IS INTENDED TO BE FINALISED IN THE COMING MONTHS.
- CONVERSION OF CNMNC MOU TO A BINDING AGREEMENT PROGRESSING WELL WITH SHORT EXTENSION OF TERM AGREED TO FACILITATE ITS CONCLUSION.
- TMT NOW HAS APPROXIMATELY 40% OF PROPOSED AVERAGE ANNUAL PRODUCTION COVERED UNDER OFFTAKE MOU'S.

## **BACKGROUND**

Technology Metals Australia Limited (ASX: **TMT**) ("**Technology Metals**" or the "**Company**") is pleased to announce the execution of a non-binding Memorandum of Understanding ("**MoU**") with Shaanxi Fengyuan Vanadium Technology Development Co., Ltd. ("**Fengyuan**") in relation to establishing a binding V<sub>2</sub>O<sub>5</sub> offtake agreement over vanadium production from the Gabanintha Vanadium Project ("**Project**" or "**GVP**").

Fengyuan, headquartered in Shanyang County, Shaanxi Province, Peoples Republic of China, a high-tech vanadium – nitrogen ("**VN**") alloy producer operates the World's most advanced VN alloy production technology. Fengyuan has capacity to produce 10,000 Tpa of VN, requiring approximately 14,300 Tpa of V<sub>2</sub>O<sub>5</sub> feedstock.

TMT and Fengyuan have agreed to use their best endeavours to negotiate a definitive and binding offtake agreement ("**Agreement**") for the supply and purchase of vanadium pentoxide (**V<sub>2</sub>O<sub>5</sub>**) product that the Company intends to produce from the Project.

In addition, the Company has held constructive discussions with CNMNC on converting the previously announced MOU to a binding Agreement. The parties are highly encouraged with progress achieved and have mutually agreed to extend the term of the MOU until 30 November 2019.

**Managing Director Ian Prentice commented:** "We are very excited to have now entered into two offtake MOU's with leading Chinese vanadium alloy producers over a total of 5,000 Tpa of the proposed average 12,800 Tpa production. Discussions with prospective development partners are progressing extremely well following the delivery of the very high quality DFS on the development of the globally significant GVP combined with the very high purity of the V<sub>2</sub>O<sub>5</sub> product".

## KEY TERMS DEFINED IN THE TMT – FENGYUAN MOU

The MoU between TMT and Fengyuan establishes a framework for ongoing discussions and negotiations aimed at delivering a definitive and binding offtake agreement ("**Agreement**") over the coming months. Key terms that have been defined and agreed upon in the MoU are:

- Initial minimum annual quantity of  $V_2O_5$  to be purchased of 3,000Tpa on a take-or-pay basis,
- Fengyuan to purchase such quantity of product that is available, up to 3,000Tpa, during the ramp-up and commissioning phase of the Project,
- Pricing to be negotiated based on the Metal Bulletin  $V_2O_5$  Pricing Index (or similar) incorporating a floor and ceiling price structure,
- Sales to be based on CIP at Fengyuan's selected port of choice in China, and
- Minimum term of five (5) years with an option to renew for an additional five (5) years.

The next steps to progress towards finalising the Agreement include due diligence to be completed by both parties in conjunction with further refinement and agreement of the key off take terms.

The MoU is effective until 31 December 2019 unless the parties mutually agree to formally terminate or extend the term.

## ABOUT SHAANXI FENGYUAN VANADIUM TECHNOLOGY DEVELOPMENT CO., LTD

Shaanxi Fengyuan Vanadium Technology Development Co., Ltd is ranked amongst the top three (3) VN producers in China, with a production capacity of 10,000 tonnes of VN per annum, requiring approximately 14,300 tonnes per annum of  $V_2O_5$  feedstock. Fengyuan produced 5,000 tonnes VN in 2018 based on consumption of approximately 7,200 tonnes of  $V_2O_5$ .

Fengyuan utilises the World's most advanced VN alloy production technology and in 2014 was recognised as high and new technology enterprise (HNTE) in China.

Fengyuan is majority owned by Shaanxi Yongheng Vanadium Group (Yongheng), a high tech private enterprise focused on vanadium smelting, purchase and sale of vanadium products, vanadium industry technology research development and production of vanadium refined chemical products. Yongheng was established in 1998 and is located in the High-Tech Development Zone of Shanyang County, Shaanxi Province, Peoples Republic of China. Yongheng was one of the earliest companies to enter in to the Chinese vanadium industry.

## TMT – CNMNC MOU – EXTENSION OF TERM

TMT and CNMC (Ningxia) Orient Group Co., Ltd. (CNMNC), a top ten producer of vanadium alloys in China and a controlled subsidiary of China Nonferrous Metal Mining (Group) Co., Ltd. ("**CNMNC**"), entered in to an offtake MOU in May 2019. The parties have been engaged in constructive discussions on conversion of the MOU into a binding offtake Agreement. These discussions have been progressing extremely well, with both parties committed to delivering a mutually beneficial outcome reflecting the terms agreed in the MOU. As such the parties have mutually agreed to extend the term of the MOU through until 30 November 2019 to enable the orderly progression through to a binding offtake Agreement.

## 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.

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

Ian Prentice

**Managing Director**

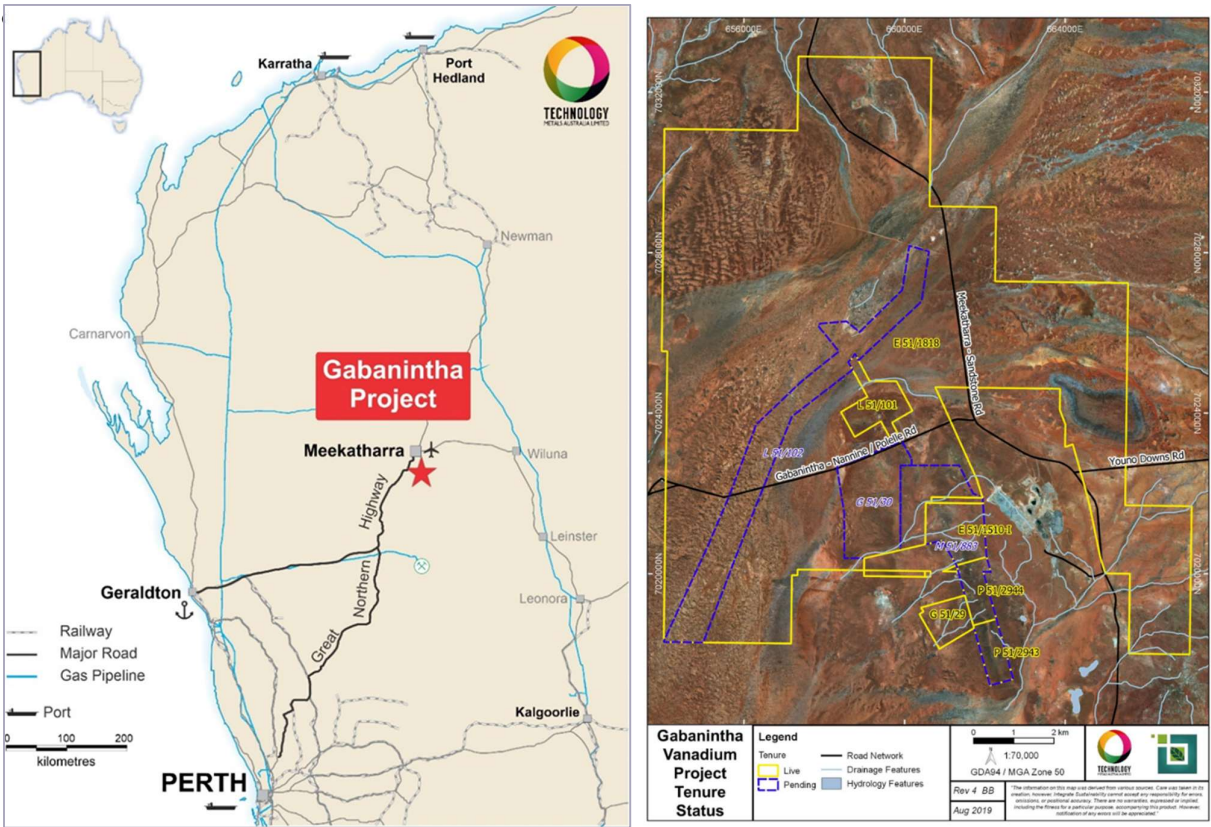
**Technology Metals Australia Limited**

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**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 has been 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 ten granted tenements and three applications (including two Mining Leases) divided between the Northern Block of Tenements (11 tenements) and the Southern Tenement (2 tenements). 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.



GVP Location and Tenure

Data from the Company's 2017 and 2018 drilling programs including 111 RC holes and 53 HQ and PQ diamond holes 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 confirms the position of the Gabanintha Vanadium Project as one of the highest grade vanadium projects in the world.

Global Mineral Resource estimate for the Gabanintha Vanadium Project as at 27 March 2019

Material Type	Classification	Tonnage (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>1.0</b>	<b>44.7</b>	<b>6.2</b>	<b>10.4</b>	<b>11.4</b>	<b>0.0</b>	<b>0.009</b>	<b>0.2</b>
	<b>Indicated (North)</b>	<b>18.5</b>	<b>1.1</b>	<b>49.1</b>	<b>5.2</b>	<b>5.8</b>	<b>12.9</b>	<b>-0.1</b>	<b>0.007</b>	<b>0.2</b>
	Inferred (North)	41.0	1.1	47.7	5.6	7.1	12.6	0.3	0.008	0.2
	Inferred (South)	10.4	1.1	49.1	4.9	5.9	12.6	-0.4	0.004	0.3
	<b>Total Inferred</b>	<b>51.5</b>	<b>1.1</b>	<b>48.0</b>	<b>5.5</b>	<b>6.9</b>	<b>12.6</b>	<b>0.1</b>	<b>0.007</b>	<b>0.2</b>
	<b>Massive Global</b>	<b>71.2</b>	<b>1.1</b>	<b>48.2</b>	<b>5.4</b>	<b>6.7</b>	<b>12.7</b>	<b>0.1</b>	<b>0.007</b>	<b>0.2</b>
Disseminated / Banded Magnetite	<b>Indicated (North)</b>	<b>10.3</b>	<b>0.6</b>	<b>28.6</b>	<b>13.1</b>	<b>25.5</b>	<b>7.5</b>	<b>3.0</b>	<b>0.030</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)	11.1	0.6	30.2	11.9	23.4	7.7	2.4	0.012	0.4
	<b>Total Inferred</b>	<b>49.6</b>	<b>0.6</b>	<b>27.8</b>	<b>12.5</b>	<b>26.5</b>	<b>7.1</b>	<b>3.1</b>	<b>0.024</b>	<b>0.2</b>
	<b>Diss / Band Global</b>	<b>59.9</b>	<b>0.6</b>	<b>27.9</b>	<b>12.6</b>	<b>26.4</b>	<b>7.2</b>	<b>3.1</b>	<b>0.025</b>	<b>0.2</b>
<b>Combined</b>	<b>Global Combined</b>	<b>131</b>	<b>0.9</b>	<b>39.0</b>	<b>8.7</b>	<b>15.7</b>	<b>10.1</b>	<b>1.4</b>	<b>0.015</b>	<b>0.2</b>

\* Note: The Mineral Resource was estimated within constraining wireframe solids using a nominal 0.9% V<sub>2</sub>O<sub>5</sub> lower cut-off grade for the basal massive magnetite zone 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 Resource is 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

Data from the global Mineral Resource and the recently completed DFS on the GVP were used by independent consultants CSA Global to generate a Proven and Probable Ore Reserve estimate based on the Measured and Indicated Mineral Resource of 30.1 Mt at 0.9% V<sub>2</sub>O<sub>5</sub> located within the Northern Block of tenements at Gabanintha.

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	1.1	0.96	0.01
Probable	28.5	0.88	0.25
<b>Total</b>	<b>29.6</b>	<b>0.88</b>	<b>0.26</b>

- Note: Includes allowance for mining recovery (98% for massive magnetite ore and 95% for banded and disseminated ore) and mining dilution applied as a 1 metre dilution skin; resulting in a North Pit dilution for massive magnetite ore of 13% at 0.45% V<sub>2</sub>O<sub>5</sub>, and North Pit dilution for banded and disseminated ore of 29% at 0.0% V<sub>2</sub>O<sub>5</sub>; a Central Pit dilution for massive magnetite ore of 10% at 0.46% V<sub>2</sub>O<sub>5</sub>, and Central Pit dilution for banded and disseminated ore of 20% at 0.0% V<sub>2</sub>O<sub>5</sub>.)
- Rounding errors may occur

Capital Structure	
Fully Paid Ordinary Shares on Issue	87.554m
Unquoted Options (\$0.25 – 31/12/19 expiry)	14.59m
Unquoted Options (\$0.35 – 12/01/21 expiry)	2.75m
Quoted Options (\$0.40 – 24/05/20 expiry)	14.889m
Unquoted Options (\$0.40 – 24/05/20 expiry)	3.258m

**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 it has a reasonable basis for its forward-looking statements are; 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 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