



## TECHNOLOGY METALS AUSTRALIA LIMITED

ASX Announcement

31 July 2018

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### 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  
("TMT0") 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, TMT0

FRA Code: TN6

# QUARTERLY ACTIVITIES REPORT & APPENDIX 5B

FOR THE QUARTER ENDING 30 JUNE 2018

The Board of Technology Metals Australia Limited (ASX: **TMT**) ("Technology Metals" or the "**Company**") is pleased to provide an update on activities for the quarter ending 30 June 2018.

### HIGHLIGHTS

- Pre-Feasibility Study on the Gabanintha Vanadium Project confirmed the Project to be high value, relatively low risk and technically strong<sup>1</sup> and supported a decision to progress directly to a Definitive Feasibility Study
- Project metrics compare very favourably to global peers with targeted annual production of up to 13,000 tpa of high purity (+99%) V<sub>2</sub>O<sub>5</sub> over an initial 13 year processing life and estimated operating costs of US\$4.27/lb V<sub>2</sub>O<sub>5</sub>.
- Capital expenditure estimate of A\$380m with a rapid capital payback of <2.5 years from commissioning, including a 6 month ramp up period.
- Pre tax NPV of A\$1.3 billion (A\$850 million post tax) and IRR of 55% (43% post tax) using an average V<sub>2</sub>O<sub>5</sub> price of US\$13/lb and AUD:USD exchange rate of 0.75.
- Study was based on Indicated Mineral Resource component (21.6Mt at 0.9% V<sub>2</sub>O<sub>5</sub>) of Global Mineral Resource of 119.9Mt V<sub>2</sub>O<sub>5</sub> and delivered a maiden Probable Reserve of 16.7Mt at 0.96% V<sub>2</sub>O<sub>5</sub>.
- Downstream processing testwork delivered a V<sub>2</sub>O<sub>5</sub> product with a purity in excess of 99% and confirmed the Gabanintha ore is amenable to conventional salt roast / water leach processing.
- Acquisition of strategic tenement at Gabanintha enhances optionality and flexibility with regard to the development of the Project.
- Vanadium prices are approaching US\$20/lb V<sub>2</sub>O<sub>5</sub> with continued tightness of supply in China and demand growth from the new Rebar standards.
- As at the end of June 2018 the Company had cash of \$2.71 million and as at 30 July 2018 the Top 20 shareholders held 56.8% of the fully paid ordinary shares.

**Chairman, Michael Fry commented:** "The delivery of the outstanding Pre-Feasibility Study result, combined with the confirmation of scope for a premium high purity vanadium pentoxide product and securing the strategic tenement at Gabanintha has the Company extremely well positioned as we progress to a Definitive Feasibility Study on one of the highest grade, best quality, large scale vanadium development projects in the World in a period of tightening vanadium supplies".

1 – PFS has been developed to a confidence level of -15% to +25%

## SUMMARY

During the June 2018 Quarter the result of the pre-feasibility study (“PFS”) on the development of the Gabanintha Vanadium Project was announced, confirming the Project to be a high value, relatively low risk and technically strong development opportunity. The PFS was based on the Indicated Mineral Resource of 21.6 Mt at 0.9%  $V_2O_5$  in the Northern Block of tenements out of a global Indicated and Inferred Mineral Resource of 119.9 Mt at 0.8%  $V_2O_5$ . The PFS mining and production schedule of 19.2 Mt at 0.96%  $V_2O_5$  includes 13% Inferred Mineral Resources and a mine plan based on the development of two open pits; the North Pit and the Main Pit.

It is anticipated that the Project production profile will ramp up to approximately 13,000 tpa high purity (+99%)  $V_2O_5$  delivering a rapid capital payback of about 2.5 years from commencement of commissioning (including a six (6) month ramp up period). The Project delivers an anticipated pre-tax NPV in the region of \$1,277 million over a projected 13 year mine life, with an IRR of 55%, and an estimated life of mine operating costs of US\$4.27/lb  $V_2O_5$ . These project metrics compare very favourably to global peers.

Given these outcomes, the Board has resolved to proceed immediately with the commencement of a Definitive Feasibility Study (“DFS”).

The PFS also enabled the estimation of a maiden Probable Ore Reserve for the Project of 16.7Mt at 0.96%  $V_2O_5$ , representing a very high +77% tonnage conversion from Indicated Resource.

Downstream processing testwork has confirmed the Gabanintha ore as being amenable to conventional salt roast / water leach processing, delivering a final  $V_2O_5$  product with a purity in excess of 99%. The solution produced from the leaching testwork is regarded as extremely clean and low in solution impurities. A larger composite sample is currently being processed with the aim of generating final product to be provided to potential vanadium end-users.

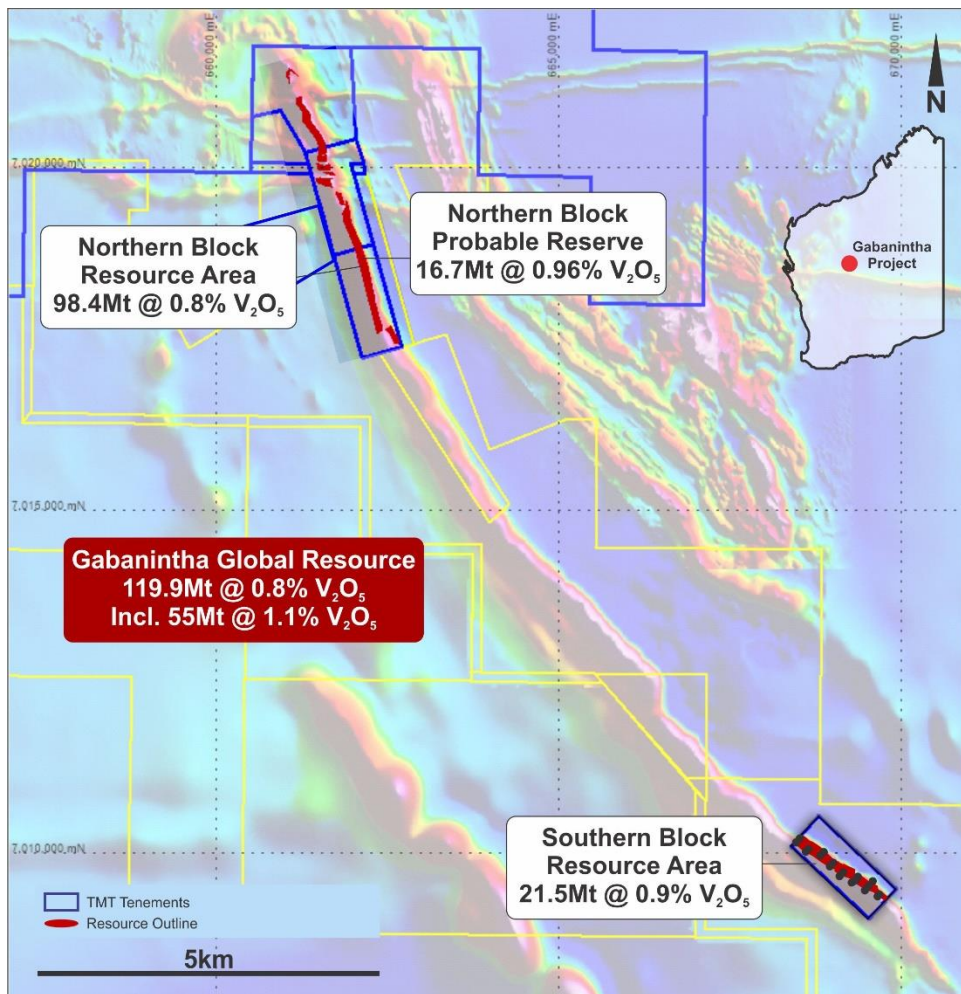


Figure 1: Gabanintha Vanadium Project Layout

## GABANINTHA PRE-FEASIBILITY STUDY

The results of the Gabanintha pre-feasibility study (“PFS”) completed 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, were reported during the quarter. The other consultants involved in the preparation of the PFS included:

- METS Engineering for ongoing metallurgical testwork, product assessment and mineral processing.
- CSA Global for resource and mining study work, involving the generation of conceptual open pit designs, a preliminary mining and production schedule, mining capital and operating cost estimates, and initial ore reserve estimate, and
- Integrate Sustainability for environmental, heritage, health, safety and statutory approvals advice and support.

The PFS, based on the mineral resources contained within the Northern Block of tenements and developed to a confidence level of -15% to +25%, confirms the Project to be a high value, relatively low risk and technically strong development opportunity for the Company. Given these outcomes, the Board has resolved to proceed immediately with the commencement of a Definitive Feasibility Study (“DFS”).

The scope of the PFS involved developing the processing flowsheet, completing basic plant engineering and site / infrastructure assessments, specifying and quoting on major long lead items, providing capital and operating cost estimates to the pre-feasibility study and generate a Project financial model.



Figure 2: Gabanintha Project – Schematic Processing Plant Layout

The PFS mining and production schedule of 19.2 Mt at 0.96%  $V_2O_5$  is based on the maiden Ore Reserve of 16.7 Mt at a mined grade of 0.96%  $V_2O_5$ , which is contained within the currently defined Indicated Mineral Resource of 21.6 Mt at 0.9%  $V_2O_5$  in the Northern Block of tenements, and includes 13% Inferred Mineral Resources. The total Gabanintha Project comprises a global Indicated and Inferred Mineral Resource of 119.9 Mt at 0.8%  $V_2O_5$ . The mine plan revolves around the development of two open pits; the North Pit and the Main Pit.

It is anticipated that the Project will commence in 2021, ramping up to an approximately 13,000 tpa high purity (+99%)  $V_2O_5$  operation with a rapid capital payback of about 2.5 years from commencement of commissioning and includes a six (6) month ramp up period. The low risk of this WA-based project allows the assumption of a discount rate of 10%, providing an anticipated pre-tax NPV in the region of \$1,277 million over a projected 13 year mine life, with an IRR of 55%.

Table 1 below provides the material physical assumptions and outputs on which the PFS and Ore Reserves on the wholly owned Gabanintha Project is based.

<b>Targeted V<sub>2</sub>O<sub>5</sub> Production Rate</b>	Tonnes Per Annum	13,000
<b>Targeted Production Commencement</b>	Year	2021
<b>Estimated Mine / Processing Life</b>	Years	13
<b>Life of Mine Production</b>	Tonnes V <sub>2</sub> O <sub>5</sub>	129,000
<b>Processing Rate</b>	Mtpa	1.6 - 1.9
<b>Estimated mineralisation to be mined</b>	Mt	19.2
<b>Average Diluted Mining Grade</b>	% V <sub>2</sub> O <sub>5</sub>	0.96
<b>Average Strip Ratio</b>		5.6

Table 1: Gabanintha PFS – Material Physical Assumptions and Anticipated Outputs

Table 2 provides the key financial assumptions and forecasts used in the PFS and the resultant financial outputs.

<b>Commodity Price Forecast</b>	US\$/lb V <sub>2</sub> O <sub>5</sub>	13
<b>Exchange Rate Assumption</b>	A\$: US\$	0.75
<b>Total Revenue</b>	A\$m	4,935
<b>Total EBITDA</b>	A\$m	3,070
<b>Total Capital Expenditure</b>	A\$m	380
<b>Total Operating Expenditure</b>	A\$m	1,600
<b>Average Operating Costs</b>	US\$/lb V <sub>2</sub> O <sub>5</sub>	4.27
<b>Discount Rate Assumption</b>	%	10
<b>Net Present Value (pre-tax)</b>	A\$m	1,277
<b>Internal Rate of Return (pre-tax)</b>	%	55
<b>Net Present Value (post-tax)</b>	A\$m	850
<b>Internal Rate of Return (post-tax)</b>	%	43
<b>Anticipated Payback on Capital from Commencement of Production</b>	Years	<2.5

Table 2: Gabanintha PFS – Material Financial Assumptions and Anticipated Outputs

## COMMODITY PRICE PROJECTIONS

The estimated life of mine revenue projections from the PFS are based on forecast V<sub>2</sub>O<sub>5</sub> sales prices sourced from Merchant Research & Consulting Ltd, a UK based market research company specialising in the chemical sector and related industries. These forecasts take into account the anticipated vanadium market developments and healthy demand scenarios. Based on the Merchant Research and Co. forecasts, the weighted average V<sub>2</sub>O<sub>5</sub> sales price for the Project revenue projections is US\$13/lb, ranging from US\$11/lb in 2020 through to a high of US\$14.74/lb in 2026 and down to US\$12.73/lb by the end of the forecast period in 2027.

The forecast V<sub>2</sub>O<sub>5</sub> sales prices compare very favourably to current market prices, with European V<sub>2</sub>O<sub>5</sub> prices of US\$19.00 to US\$19.65/lb and Chinese V<sub>2</sub>O<sub>5</sub> prices of US\$18.00 to US\$18.30/lb as at 27 July 2018 (source: FerroAlloyNet).

Commodity price is a key sensitivity for the PFS financial projections. A sensitivity analysis completed by Wave (see Table 3) shows that a 20% increase in expected sales price, to US\$15.30/lb (approximately 20% lower than current prices) could potentially deliver a post-tax NPV of up to \$1,200 million and an IRR of 54.2%.

Impact of Change in Price	(20.00%)	(10.00%)	Base Case	10.00%	20.00%
Revenue (A\$)	3,948.1	4,441.6	4,935.1	5,428.6	5,922.1
EBITDA (A\$)	2,132.8	2,601.6	3,070.4	3,539.3	4,008.1
NPV 10% Post Tax (A\$)	499.0	673.9	848.8	1,023.7	1,200.4
IRR Post Tax (A\$)	31.3%	37.4%	43.2%	48.8%	54.2%

Table 3: Vanadium Sales Price Sensitivity Analysis – Post Tax

The implementation of the new Chinese Rebar standards, which will see vanadium intensity of use in steel increasing from the current 0.048kg/T of steel towards the levels of intensity of use in North America and Europe (0.078kg/T to 0.097kg/T), is the driver of the current strength in the vanadium market.

### MAIDEN ORE RESERVE ESTIMATE

The Company engaged CSA Global to provide an Ore Reserve statement prepared by a Competent Person in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code (2012 Edition)). The Ore Reserve estimate was 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, as reported to the ASX on 7 March 2018, and resulted in a Probable Reserve estimate of 16.7 Mt at 0.96% V<sub>2</sub>O<sub>5</sub>. (see Table 4). This represents a very high +77% tonnage conversion from Indicated Resource to Probable Reserve.

The Ore Reserve estimation was completed as the final stage of the PFS including the economic assumptions and the appropriate mining and development studies. See ASX announcement of 21 June 2018, "TMT Delivers Robust Gabanintha Pre Feasibility Study; Direct Progression to Definitive Feasibility Study" for full details of the Ore Reserve estimation.

Table 4: 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

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.



## HIGH PURITY +99% VANADIUM PENTOXIDE PRODUCT FROM CONVENTIONAL PROCESSING

Metallurgical testwork completed during the quarter, under the supervision of the Company's metallurgical consultant METS Engineering Group Pty Ltd ("METS") and based on representative samples collected from diamond drilling completed in 2017, has definitively shown that magnetic concentrates produced from all zones of the massive magnetite and the fresh disseminated magnetite are amenable to conventional salt roast / water leach processing. The magnetic concentrates delivered very high vanadium recoveries and rejection of gangue minerals from the high grade fresh and transition material and the disseminated medium grade fresh material.

Vanadium grades reporting to the magnetic concentrate ranged from 1.27 to 1.34%  $V_2O_5$  for these ore types, with weight recoveries ranging from 85.6% for the massive high grade fresh composite to 33% for the disseminated medium grade fresh composite.

Downstream processing testwork, focused on the extraction of vanadium pentoxide ( $V_2O_5$ ) from the magnetic concentrates utilising salt roast / water leach processing has definitively shown that magnetic concentrates produced from all zones of the massive magnetite and the fresh disseminated magnetite are amenable to this conventional processing route. This work demonstrated very high recoveries of vanadium in to solution at significantly less salt addition than other conventional salt roast leach operations. This lower salt (reagent) requirement is interpreted to be due to the very low silica grades present in the magnetic concentrates, a very important factor for the efficient and effective salt roasting of vanadium concentrates.

Testwork, conducted by ALS Metallurgy Services, has produced an ammonium metavanadate (AMV) precipitate from a leach solution and subsequently precipitated a  $V_2O_5$  final product. For this phase of work a sample of blended magnetic concentrate, representing approximately 85% massive fresh and 15% massive transitional material, was mixed with sodium carbonate and roasted for 2 hours. The roasted calcined material was then water leached to ensure complete dissolution of sodium vanadate to the leach solution.

Desilication of the leach solution, which was completed with minimal vanadium loss, generated a clean solution for the AMV precipitation step. The AMV precipitate, which was filtered from the remaining leach solution, delivered a >99% recovery of vanadium. The AMV precipitate was then calcined to generate a final  $V_2O_5$  product (see Figure 3), with a purity in excess of 99%. Impurities within the final  $V_2O_5$  consist of a small volume of alumina, chromium, potassium and sulphur.



Figure 3: Photograph of High Purity +99%  $V_2O_5$  Product from Gabanintha

This round of testwork has confirmed the use of conventional salt roast / water leach processing techniques to recover a very high purity  $V_2O_5$  product at Gabanintha. The solution produced from the leaching testwork is regarded as extremely clean and low in solution impurities. This has confirmed that the material from the Gabanintha deposit is well suited to produce a very high purity  $V_2O_5$  product without the requirement of additional costly contaminant removal steps.

#### FURTHER PROJECT ENHANCEMENT OPPORTUNITIES

The Company believes that there is significant opportunity to enhance the results of the PFS through:

- Upgrading more of the Inferred Mineral Resources to the Indicated category, thereby increasing the mine life, with a focus on the Southern Tenement Mineral Resource of 21.5Mt at 0.9%  $V_2O_5$  as well as along strike and at depth from the designed pits at the Northern Block. The Company is of the view that the quantum of the Indicated Resource estimate is primarily a factor of drill density, with scope to materially increase the volume of the Indicated Resource estimate with further drilling (see Figure 4 below showing the Northern Block Indicated Resource in orange demonstrating limited to no drilling down dip and along strike);
- Conducting a detailed geotechnical assessment, focussed on the footwall of the designed pits, allowing steeper pit walls and significantly reducing the overall strip ratio. CSA Global have estimated that steeper wall angles have potential to deliver significant increases in the Project DCF; and
- Optimising the open pit mine scheduling to ensure maximum financial returns with staged open pit development, early access to higher yielding ore and scope for in pit dumping of waste once final open pits have been defined.

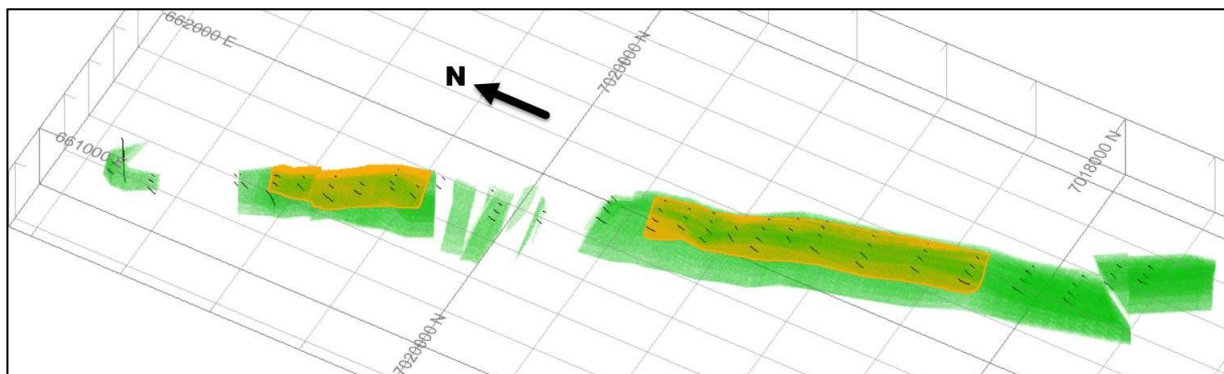


Figure 4: Oblique long section view towards 070° of classified model (Indicated – orange, Inferred – green)

In addition to these opportunities there is also scope to assess the potential to extract other valuable commodities from the Gabanintha deposit, including a base metal concentrate (such as Co-Ni-Cu), a titanium dioxide product and a high grade iron ore product. Ongoing metallurgical testwork is aimed at assessing the potential to extract these other commodities for additional revenue streams.

#### FUTURE WORK

The Company's ongoing activities are focused on the immediate progression to preparation of a DFS on the Gabanintha Vanadium Project. The PFS has highlighted a number of risks and opportunities that will form the focus of the next stages of work to be completed, including:

- Drilling designed to upgrade, and convert part of, the Southern Tenement Inferred Mineral Resource estimate to the Indicated Resource category;
- Drilling 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;
- Geotechnical drilling targeting, in particular, the footwall portions of the designed pits designed 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 increasing the Project NPV;

- Collection of a bulk sample for pilot scale and product generation metallurgical testwork, designed to provide both plant and equipment vendors with material to confirm suitability of proposed equipment as well as provide end-users with final product for confirmatory testing;
- Progression of potential off-take discussions and negotiations with vanadium end-users and intermediaries, including the generation of quantities of final product (both AMV and  $V_2O_5$ ) to be provided to potential vanadium end-users;
- Ongoing metallurgical testwork assessing the potential to recover cobalt, nickel and copper from the non-magnetic waste product of the fresh massive magnetite material and the scope to recover  $TiO_2$  and high quality iron ore from the calcine product; and
- Progression of environmental and heritage studies in support of the proposed development of the Project.

Drilling is scheduled to resume in early August 2018, with the initial focus being collection of geotechnical data, further metallurgical sample and extension of the Indicated Resource estimate in the North Pit / Zone of the Northern Block of tenements. As can be seen from Figure 5 the depth of complete oxidation ranges from a very shallow 5 to 10 m in the North Zone to 30 to 40 m in the Main Zone. This shallow oxidation profile in the North Zone is very important from a project economics / development point of view, providing the ability to access the higher yielding massive transitional and fresh material very early in the mining schedule, thereby reducing the lead time to production.

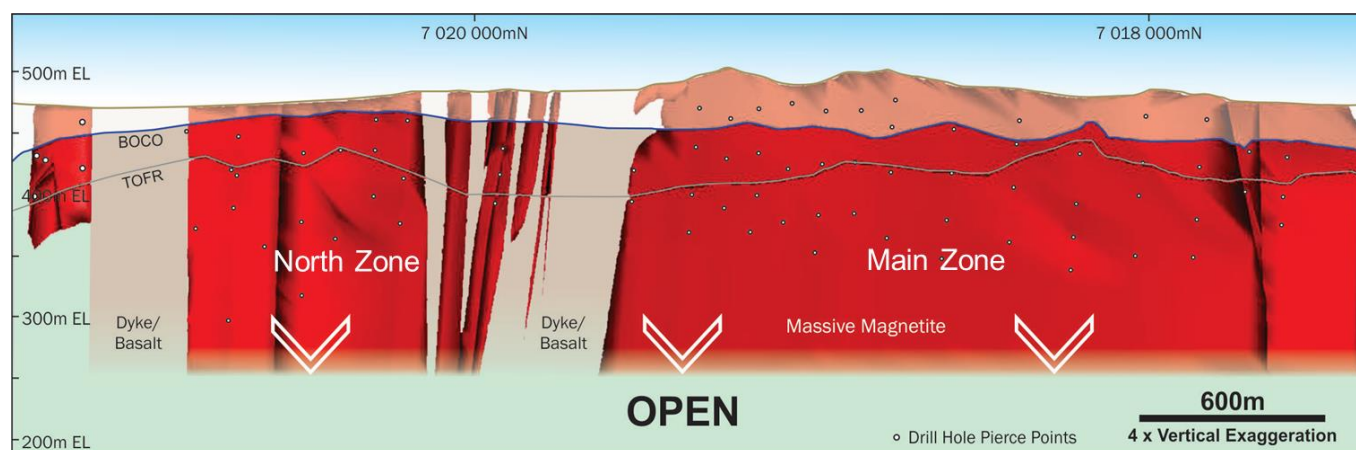


Figure 5: Long Section – Northern Block – Massive Magnetite Horizon

The diamond and RC drilling will then progress to the Main Pit / Zone of the Northern Block of tenements, as well as the Southern Tenement, with the expectation that this work will provide the geotechnical data required to enable a steepening of the designed open pit walls, particularly the footwall, to reduce the overall strip ratio. The resource infill and extension portion of this drilling program is expected to deliver an upgrade to the Global Mineral Resource Estimate, but more importantly increase the Indicated Mineral Resource for the Project, which should result in an expanded Ore Reserve Estimate.

Metallurgical testwork is nearing completion on a larger composite sample of the high grade massive magnetite unit with the aim of generating final product (both AMV and  $V_2O_5$ ) to be provided to potential vanadium end-users. It is expected that the larger volumes of solution, combined with some minor refinements to the testwork program, could result in the delivery of even higher purity of the final  $V_2O_5$  product, potentially generating a niche ultra-high purity  $V_2O_5$  product specifically for the Vanadium Battery and Aeronautical industries, which may attract substantial premiums to the 98%  $V_2O_5$  product pricing index. Results from this work are expected in the current quarter.



## MARKETING ACTIVITIES

During the quarter, and following the delivery of the PFS, TMT management completed another trip to China, visiting a range of vanadium end users and producers, including groups that the Company had met with during the April 2018 visit. This most recent visit was important as it gave TMT management an opportunity to discuss the technical and financial outcomes of the PFS and also demonstrated the Company's ability to deliver outcomes within expected timeframes. The Company sees the developing relationships with these Chinese vanadium companies as an important part of the strategy in place to progress the development of its very high quality, high grade Gabanintha Vanadium Project.

Subsequent to the end of the quarter the Company attended the Noosa Mining and Exploration Investor Conference held from 18 to 20 July 2018. The Managing Director, Ian Prentice, delivered a presentation titled "Leading The Charge in the Vanadium Industry; Aiming to be the Next Producer in an Evolving Market" at the conference. This very well attended conference provided an ideal opportunity to elevate investor awareness of the Company and its outstanding position at the forefront of the emerging vanadium development companies.

## TENEMENTS

During the quarter the Company progressed the process of grant of its two Mining Lease applications; MLA51/883 over the Northern Block of Tenements and MLA51/884 over the Southern Tenement.

A heritage survey was conducted with representatives of the Yugunga-Nya Claimant Group over the Gabanintha tenements in mid July. The survey was conducted to provide clearance for the upcoming drilling program.

Table 5: Tenement Status as at 30 June 2018

LOCATION	TENEMENT	INTEREST ACQUIRED OR DISPOSED OF DURING THE QUARTER	ECONOMIC INTEREST
Gabanintha Project (WA)	E51/1510-I	Nil	100%
Gabanintha Project (WA)	P51/2785-I	Nil	100%
Gabanintha Project (WA)	P51/2942	Nil	100%
Gabanintha Project (WA)	P51/2943	Nil	100%
Gabanintha Project (WA)	P51/2944	Nil	100%
Gabanintha Project (WA)	E51/1818	Nil	100%
Gabanintha Project (WA)	MLA51/883	Nil - Application	100%
Gabanintha Project (WA)	MLA51/884	Nil - Application	100%

Subsequent to the end of the quarter the Company announced the acquisition of a strategic tenement, P51/2930, that covers an area of 109.2ha adjacent to the Main Pit at the Northern Block of tenements. This acquisition not only expands the Company's landholding at Gabanintha but it importantly provides a high degree of optionality and flexibility with regard to the development of the Project; providing scope for a more centrally located processing plant and/or additional areas for the location of waste/low grade ore stockpiles and other associated infrastructure. A range of development options incorporating the additional landholding will be fully investigated during the DFS.

As consideration for the acquisition of the Tenement, the Company has:

- Paid \$40,000 plus GST ("Cash Consideration"),
- Issued 200,000 fully paid ordinary shares in the capital of TMT ("Share Consideration"),
- Agreed to pay to the Seller a royalty of 2% of the Net Smelter Return on Commercial Production of gold (if any) from the Tenement, and
- Agreed to pay to the Seller a royalty of 1% of the Net Smelter Return on Commercial Production of vanadium pentoxide (or equivalent) (if any) from the Tenement.

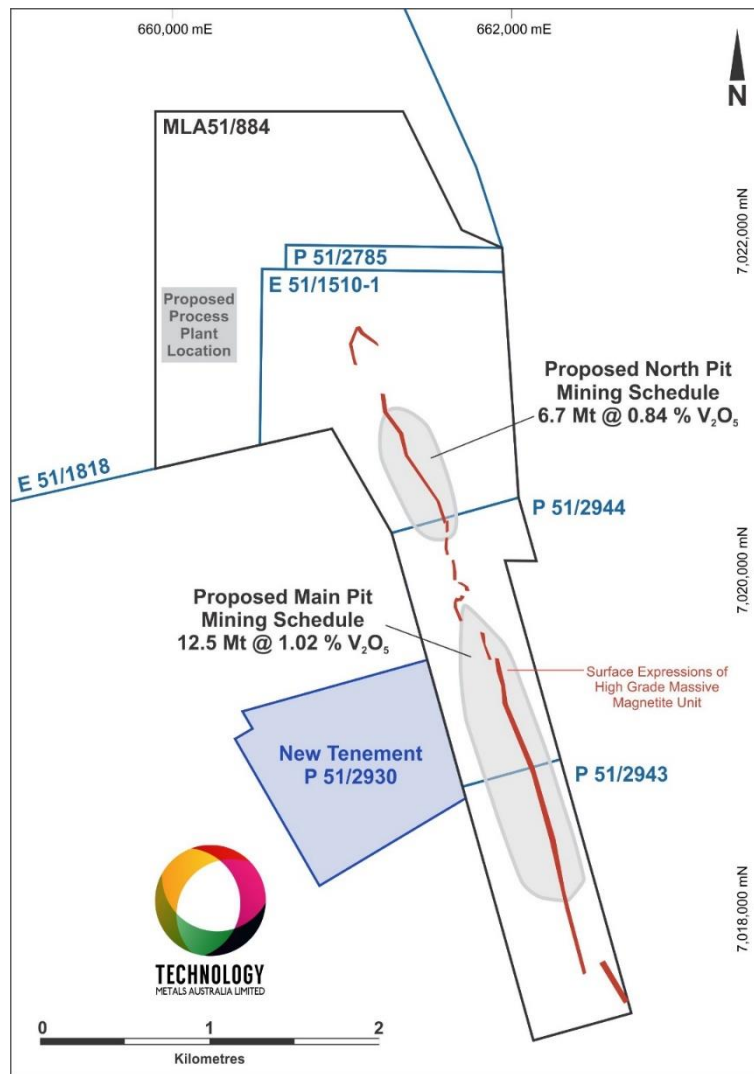


Figure 6: Gabanintha Project – Northern Block of Tenements Site Layout

## CORPORATE

As at 30 July 2018 the Top 20 shareholders held 56.8% of the fully paid ordinary shares and the Company had cash of \$2.71 million as at 30 June 2018.

A General Meeting of Shareholders was held on 11 May 2018 at which shareholder approval was received for the issue of a total of 10,000,000 \$0.40 exercise, two year expiry options. These options were issued in three (3) tranches being; 3,333,333 options to subscribers under the capital raising announced on 19 March 2018, 3,333,333 options to corporate advisors and managers of the capital raising announced on 19 March 2018 and 3,333,334 options to the Company's technical consultants, corporate advisors and key management personnel under an Employee Incentive Scheme.

Subsequent to the end of the June 2018 quarter the Company launched its updated website, accessible at [www.tmtlimited.com.au](http://www.tmtlimited.com.au).

Project specific announcements lodged on the ASX during the June 2018 quarter were:

- Gabanintha Downstream Testwork Delivering Outstanding Results, 4 April 2018
- TMT Investor Presentation; Mines and Money Asia, Hong Kong – April 2018, 5 April 2018
- High Purity +99% Vanadium Pentoxide Product Confirmed at Gabanintha, 31 May 2018
- TMT Delivers Robust Gabanintha Pre Feasibility Study; Direct Progression to Definitive Feasibility Study, 21 June 2018

## 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  
**Executive 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 40km 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 6: 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)	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	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% V<sub>2</sub>O<sub>5</sub> lower cut-off for the Massive magnetite zone and using a nominal 0.4% V<sub>2</sub>O<sub>5</sub> 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% V<sub>2</sub>O<sub>5</sub>. 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 7: 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

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

<sup>2</sup> – 13.7 million unquoted options are subject to restriction until 21 December 2018.

<sup>3</sup> – 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.*



## Appendix 5B

# Mining exploration entity and oil and gas exploration entity monthly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

### Name of entity

Technology Metals Australia Limited

### ACN

612 531 389

### Quarter ended ("current quarter")

30 June 2018

Consolidated statement of cash flows	Current Quarter (Jun 2018) \$A'000	Year to date (12 months) \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	-	-
1.2 Payments for:		
(a) exploration & evaluation	(398)	(2,147)
(b) development	-	-
(c) production	-	-
(d) staff costs	(77)	(270)
(e) administration and corporate costs	(295)	(857)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	8	21
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Research and development refunds	-	-
1.8 Other (GST Refund received during period)	43	260
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(719)</b>	<b>(2,993)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	(35)	(35)
(b) tenements (see item 10)	-	-
(c) investments	-	-
(d) other non-current assets	-	-

<b>Consolidated statement of cash flows</b>	<b>Current Quarter (Jun 2018) \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
2.2 Proceeds from the disposal of:		
(a) property, plant and equipment	-	-
(b) tenements (see item 10)	-	-
(c) investments	-	-
(d) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>(35)</b>	<b>(35)</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of shares	-	2,805
3.2 Proceeds from issue of convertible notes	-	-
3.3 Proceeds from exercise of share options	13	51
3.4 Transaction costs related to issues of shares, convertible notes or options		
3.5 Proceeds from borrowings	-	-
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
<b>3.10 Net cash from / (used in) financing activities</b>	<b>13</b>	<b>2,856</b>

<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of period	3,451	2,882
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(719)	(2,993)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(35)	(35)
4.4 Net cash from / (used in) financing activities (item 3.10 above)	13	2,856
4.5 Effect of movement in exchange rates on cash held	-	-
<b>4.6 Cash and cash equivalents at end of period</b>	<b>2,710</b>	<b>2,710</b>

5. <b>Reconciliation of cash and cash equivalents</b> at the end of the month (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current Quarter \$A'000	Previous Quarter \$A'000
5.1 Bank balances	710	105
5.2 Call deposits	2,000	3,346
5.3 Bank overdrafts	-	
5.4 Other (provide details)	-	
<b>5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>2,710</b>	<b>3,451</b>

6. <b>Payments to directors of the entity and their associates</b>	Current quarter \$A'000
6.1 Aggregate amount of payments to these parties included in item 1.2	77
6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	-
6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2	

Payment of director's fees.

7. <b>Payments to related entities of the entity and their associates</b>	Current quarter \$A'000
7.1 Aggregate amount of payments to these parties included in item 1.2	30
7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	-
7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2	

The Company engages Cicero Corporate Services Pty Ltd for administrative and company secretarial services. Mr Sonu Cheema was appointed to the position for Director of Cicero Corporate Services Pty Ltd during the June Quarter.

8. <b>Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
8.1 Loan facilities	-	-
8.2 Credit standby arrangements	-	-
8.3 Other (please specify)	-	-
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after month end, include details of those facilities as well.		

-

## Mining exploration entity and oil and gas exploration entity quarterly report

<b>9. Estimated cash outflows for next quarter</b>		<b>\$A'000</b>
9.1	Exploration and evaluation	1,400
9.2	Development	-
9.3	Production	-
9.4	Staff costs	80
9.5	Administration and corporate costs	170
9.6	Other (provide details if material)	-
<b>9.7</b>	<b>Total estimated cash outflows</b>	<b>1,650</b>

<b>10.</b>	<b>Changes in tenements (items 2.1(b) and 2.2(b) above)</b>	<b>Tenement reference and location</b>	<b>Nature of interest</b>	<b>Interest at beginning of quarter</b>	<b>Interest at end of quarter</b>
10.1	Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced	-	-	-	-
10.2	Interests in mining tenements and petroleum tenements acquired or increased	-	-	-	-

**Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Sign here:  .....

Date: 31 July 2018

Director and Company Secretary

Print name: Sonu Cheema

**Notes**

1. The monthly report provides a basis for informing the market how the entity's activities have been financed for the past month and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this monthly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this monthly report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.

**Technology Metals Australia Limited**

**Annexure A – Performance Shares**

In accordance with section 6.12 of the Company's ASX admission letter, the following table is provided in respect of performance securities issued.

<b>Performance Share Class</b>	<b>Number of Performance Shares</b>	<b>Key Terms and Conditions</b>	<b>Status</b>
Class A*	10,000,000	Convert in to 10 million fully paid ordinary shares and 10 million Class B Performance Shares on achievement of an inferred resource of 30 Million tonnes at greater than 0.8% V <sub>2</sub> O <sub>5</sub> on or before 31 December 2019.	Milestone achieved with conversion to FPO shares on 4 July 2017.
Class B*	10,000,000	Class B Performance Shares, issued upon conversion of the 10 million Class A Performance Shares, convert in to 10 million fully paid ordinary shares on achievement of an indicated resource of 20 Million tonnes at greater than 0.8% V <sub>2</sub> O <sub>5</sub> on or before 31 December 2019.	Milestone achieved with conversion to FPO shares on 8 March 2018.
*All Performance Shares and any fully paid ordinary shares issued on conversion of the Performance Shares are subject to restriction until 21 December 2018.			