OUTSTANDING GABANINTHA METALLURGICAL RESULTS

TECHNOLOGY
METALS AUSTRALIA LIMITED

ASX Announcement

12 December 2018

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Directors

Michael Fry:
Chairman

Ian Prentice:
Managing Director

Sonu Cheema:
Director and Company Secretary

Issued Capital

47,533,334 ("TMT") Fully Paid Ordinary Shares

22,510,000 Fully Paid Ordinary Shares classified as restricted securities

6,133,333 – 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

VANITEC TRANSFORMING POSSIBILITIES

AMEC

HIGHLIGHTS

- **PRODUCT REFINEMENT TESTWORK DELIVERS EXTREMELY HIGH V_2O_5 PURITY IN EXCESS OF 99.7%.**
- **COMFIRMATION OF SUITABILITY OF PREMIUM PRODUCT FOR SPECIALTY VANADIUM MARKETS.**
- **PRELIMINARY BASE METAL TESTWORK FROM NON-MAGNETIC TAILINGS STREAM DELIVERS CONCENTRATE WITH COMBINED BASE METAL CONTENT OF 10% TO 15% WITH NO ADDITIONAL GRINDING.**
- **BASE METAL CLEANER CONCENTRATES CONTAIN UP TO 2.31% COBALT, 4.47% NICKEL AND 9.50% COPPER.**
- **SIGNIFICANT SCOPE FOR OPTIMISATION OF BASE METAL RECOVERY INTO A CONCENTRATE PRODUCT.**
- **DEFINITIVE FEASIBILITY STUDY PROGRESSING WELL AND REMAINS ON TRACK FOR DELIVERY IN JUNE QUARTER 2019.**

BACKGROUND

Technology Metals Australia Limited (ASX: **TMT**) ("**Technology Metals**" or the "**Company**") is pleased to provide an update on metallurgical testwork activities at its Gabanintha Vanadium Project ("**Gabanintha" or "Project**"). Refinement work on a sub-sample of the previously reported production generation testwork and preliminary base metal recovery testwork has been completed.

The product refinement work delivered a **V_2O_5 product with a purity in excess of 99.7%** from an **ammonium metavanadate precipitate that recovered >98%** of vanadium from a leach solution. This extremely high purity further confirms the suitability of Gabanintha vanadium product for the speciality chemical, battery and aeronautical industries.

Preliminary base metal (Co, Ni, Cu) recovery testwork focused on the non-magnetic (tailings) fraction from the magnetic separation process delivered highly encouraging flotation **concentrates with a combined base metal content of 10% - 15%**, containing **up to 2.31% Co, 4.47% Ni and 9.50% Cu**.

Managing Director Ian Prentice commented; "Improvement on the already high purity V_2O_5 product following a simple refinement step underscores the very high quality of the World class Gabanintha deposit; whilst the ability to produce a high grade base metal concentrate from a the non-magnetic tailings stream has potential to be a significant bonus for the Project"

1 – V2O5 purity calculated on the sum of impurities on oxide basis with those impurities below the level of detection treated as half the limit of detection.

METALLURGICAL TESTWORK – PRODUCT GENERATION REFINEMENT

The program of metallurgical testwork designed to refine and optimise the final vanadium product for end-users is continuing under the supervision of the Company's metallurgical consultant METS Engineering Group Pty Ltd ("**METS**").

The product generation refinement testwork was based on a sub-sample of the material produced in August / September 2018 (see ASX announcement dated 12 September 2018) which was sourced from representative samples of the high grade massive magnetite zone from the diamond drilling completed in the 2017 drilling campaign. This sub-sample originally presented as a lower valance form of vanadium oxide than V_2O_5, with a higher vanadium to oxygen ratio, likely due to a minor outage in laboratory equipment during processing. There was no chemical impurity identified in the sub-sample.

The sub-sample was re-leached to dissolve all vanadium pentoxide in the sample and then subjected to the standard desilication process, generating an extremely clean ammonium metavanadate (AMV) feed solution, with the resultant AMV precipitate filtered from the solution with >98% of the vanadium recovered in to a high purity precipitate.

The AMV precipitate was calcined to generate a final extremely high purity V_2O_5 product. Sub samples of the final product were dispatched to an external laboratory for confirmation analysis utilising both fused disc XRF and LA-ICPMS. This work delivered a calculated purity in excess of 99.7% based on the sum of impurities method.

This extremely high purity achieved further confirms the opportunity to target the speciality chemical, battery and aeronautical industries for a portion of the planned production from Gabanintha, providing scope to attract substantial premiums to the 98% V_2O_5 pricing index

Optimisation testwork currently underway is based on a representative 685kg sub-sample collected from the bulk sample generation large diameter diamond drilling program completed on 8 October 2018. This drilling program, completed within the North Pit region which has a very shallow oxidation profile, was designed to replicate the expected process plant feed for the initial mine life at Gabanintha. The representative sub-sample, a blend of transitional basal massive magnetite mineralisation, fresh hanging wall banded mineralisation and a large portion of fresh basal massive magnetite mineralisation, was composited, prepared and processed to generate a magnetic concentrate.

The sub-sample received was crushed, with a 300kg representative split of the sample then ground and passed through a triple pass Low Intensity Magnetic Separation (LIMS) to generate a magnetic concentrate. A 156kg magnetic concentrate sample was then dispatched to a roasting kiln supplier for processing to confirm optimal operating parameters and enable preliminary engineering design to meet the required conditions. The final vanadium product from this phase of testwork is expected to be available during the March 2019 quarter.

METALLURGICAL TESTWORK – BASE METAL RECOVERY

Multi-element analysis of the drill samples at Gabanintha has highlighted the presence of elevated base metal sulphides associated with portions of the fresh vanadium bearing magnetite mineralisation; specifically cobalt, nickel and copper sulphides. Modelling of the grade and distribution of the base metal sulphides has not yet been completed, with a phase of preliminary metallurgical testwork undertaken to determine the potential economic significance of this mineralisation.

Analysis indicates that the majority of the base metal sulphides report to the non - magnetic fraction from the Low Intensity Magnetic Separation (LIMS) process designed to beneficiate the vanadium mineralisation in to a magnetic concentrate. This non - magnetic fraction represents a tailings stream from the vanadium processing flow sheet, with all costs associated with producing this material assigned to the vanadium processing.

A number of representative samples of the non - magnetic fraction from the LIMS have been subjected to a range of bench scale flotation tests to investigate how this material may respond to conventional base metal flotation. The testwork program consisted of bulk rougher flotation to confirm the amenity of the material to flotation, followed by cleaner flotation trials of the rougher concentrate to optimise grade of the combined base metals.

The representative sample subjected to the bulk rougher flotation tests, the non - magnetic fraction from the LIMS, represented 25.6% of the overall LIMS feed. The overall LIMS feed graded 0.026% Co, 0.116% Ni and 0.03% Cu. The non - magnetic fraction upgraded the base metal content to 0.062% Co, 0.21% Ni and 0.093% Cu. Bench scale testing concentrate grades ranged up to 1.84% Co (at up to 76.9% recovery), up to 3.14% Ni (at up to 56.2% recovery) and 4.77% Cu (at up to 94.84% recovery). These concentrates represented mass pulls between 4.1% and 12.5% of the non - magnetic fraction feed material.

The bulk rougher float test utilised a 13.5kg sample of the non - magnetic fraction from the LIMS, with three concentrates collected at varying time intervals through the flotation process (see Figure 1). Each of the concentrates were dried and assayed prior to being recombined for cleaner flotation testwork. The recombined concentrate contained 1.11% Co (at 66.96% recovery), 2.39% Ni (at 40.24% recovery) and 2.51% Cu (at 94.84% recovery). The combined concentrate represented a mass pull of 3.5% of the non - magnetic fraction feed material and represents 0.9% of the overall LIMS feed.

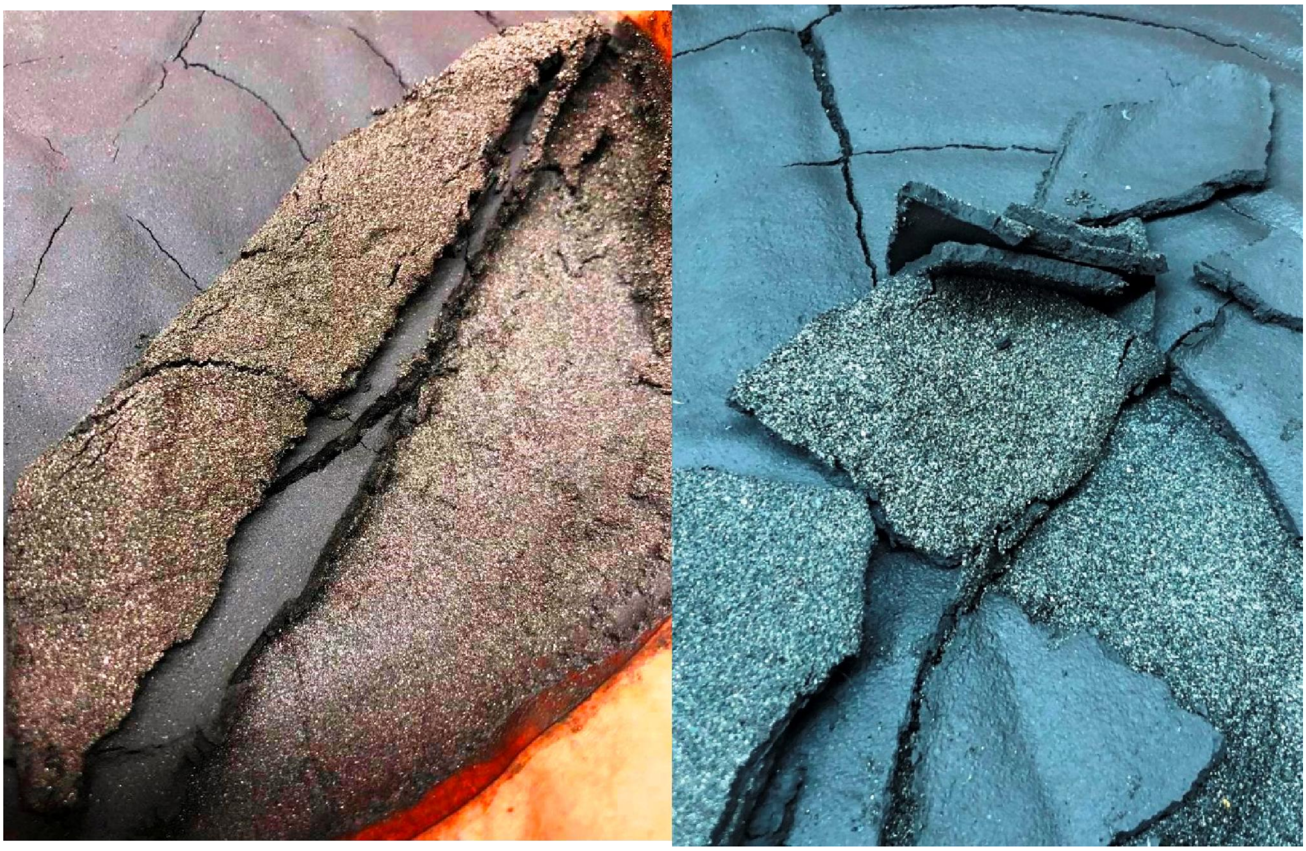

Figure 1: Bulk rougher flotation concentrates

Importantly the material subjected to this bulk rougher testwork did not require additional grinding, indicating that it is amenable to flotation immediately post the LIMS separation, a positive impact for minimising any additional processing costs for the base metal recovery.

The recombined bulk rougher concentrate was then subjected to cleaner flotation tests (see Figure 2). This work generated base metal cleaner concentrates with combined base metal content between 10 and 15%, containing up to 2.31% Co, 4.47% Ni and 9.50% Cu (see Table 1 for the material specification ranges for the cleaner flotation concentrates produced).

Al_2O_3 (%)	As (%)	CaO (%)	**Co (%)**	Cr (%)	**Cu (%)**	Fe (%)	K_2O (%)	MgO (%)
1.45 – 5.45	0.01 - 0.02	0.31 – 1.20	**1.28 – 2.31**	0.03 – 0.07	**4.18 – 9.50**	17.0 – 29.3	0.01 – 0.04	5.95 – 14.4
MnO (%)	Na (%)	**Ni (%)**	P (%)	S (%)	SiO_2 (%)	TiO_2 (%)	V_2O_5 (%)	LOI1000 (%)
0.02 – 0.07	0.08 -0.10	**2.50 – 4.47**	0.01 – 0.02	14.60 - 34.40	11.80 – 27.47	0.35 – 1.88	0.02 – 0.07	12.52 - 21.46

Table 1: Material specifications for base metal cleaner concentrates

Figure 2: Cleaner flotation test and resultant filtered base metal concentrate

Significant scope for optimisation of cobalt and nickel recovery at the rougher flotation stage has been identified, including an initial desliming stage to remove fine gangue mineral particles prior to flotation. If successful in rejection of a significant portion of the silica, alumina and magnesium gangue, this step may enable generation of a cleaner concentrate with 15 – 20% combined base metal grades. In addition, the final cleaner flotation concentrates contain significant proportions of pyrite, which if rejected could elevate combined base metal grades in concentrate to in excess of 20%. Test work will continue on available non- magnetic fraction from the LIMS to optimise the processing and maximise base metal recoveries and combined grades in concentrate.

ONGOING / FUTURE WORK

All diamond core from the diamond drilling holes completed in the North and Central pit areas of the Northern Block (17 holes for 2,406.1m), including the bulk sample generation large diameter diamond holes (21 holes for 1,444m), has been cut and sampled and is in the laboratory in Perth for analysis. Initial assay results are being received by the Company and will be reported when fully compiled and reviewed over the coming weeks.

Comminution testwork in support of the DFS and other metallurgical / equipment vendor testwork is underway utilising representative sections of whole diamond drill core selected and removed by the Company's metallurgical consultants prior to cutting and sampling of the drill core. This work will enable correct sizing and operating parameters of key components of the processing circuit to be included in the DFS.

Processing of diamond core from the Southern Tenement (4 holes for 610.1m) will occur once all of the Northern Block (proposed North and Central Pit areas) core has been processed.

Geotechnical studies utilising data from the recently completed 21 hole diamond drilling program at both the Northern Block and Southern Tenements is nearing completion. Findings from these studies will be incorporated in to the mining studies to be undertaken on the updated mineral resource estimate, with the expectation that this work will enable steeper overall pit slope angles than those used in the pre feasibility study open pit designs.

An initial program of RC drilling focused on sterilisation/assessment of the northern extent of the mineralisation on strike from the proposed North Pit, dewatering assessment in and adjacent to the current proposed North and Central pit areas and exploration for process water sources within the Company's existing tenure has been completed. Data from this program, including assays for samples from the sterilisation drilling, will be collated in the coming weeks and reported when available.

Ongoing activities in support of the DFS include:

- Updating the global Mineral Resource, including the Indicated portion of the Resource;
- Revising the PFS open pit mine designs incorporating updated geotechnical data;
- Updating mine scheduling based on detailed geometallurgical data;
- Provide an updated ore reserve estimate within the expanded global Mineral Resource, and
- Provide revised capital and operating cost estimates to a DFS level of accuracy and an updated Project financial model.

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 reported deficit of ~2,600 tonnes V metal in 2017. Vanadium Inventories are reported to have been fully depleted in 2017 (source: TTP Squared Inc). Significant production declines in China and Russia have exacerbated this situation, with further production curtailment occurring in China as a result of mine closures resulting from environmental restrictions and the banning of the import of vanadium slag. Chinese domestic consumption, driven by increasing intensity of use in steel (in particular in rebar) have impacted on Chinese exports ability to fill the global supply gap.

The increasing demand and limited supply side reaction is forecast to result in a global deficit of ~21,300t V (~37,900t V_2O_5) in 2025 (Source: TTP Squared) assuming full resumption of Chinese Stone Coal production.

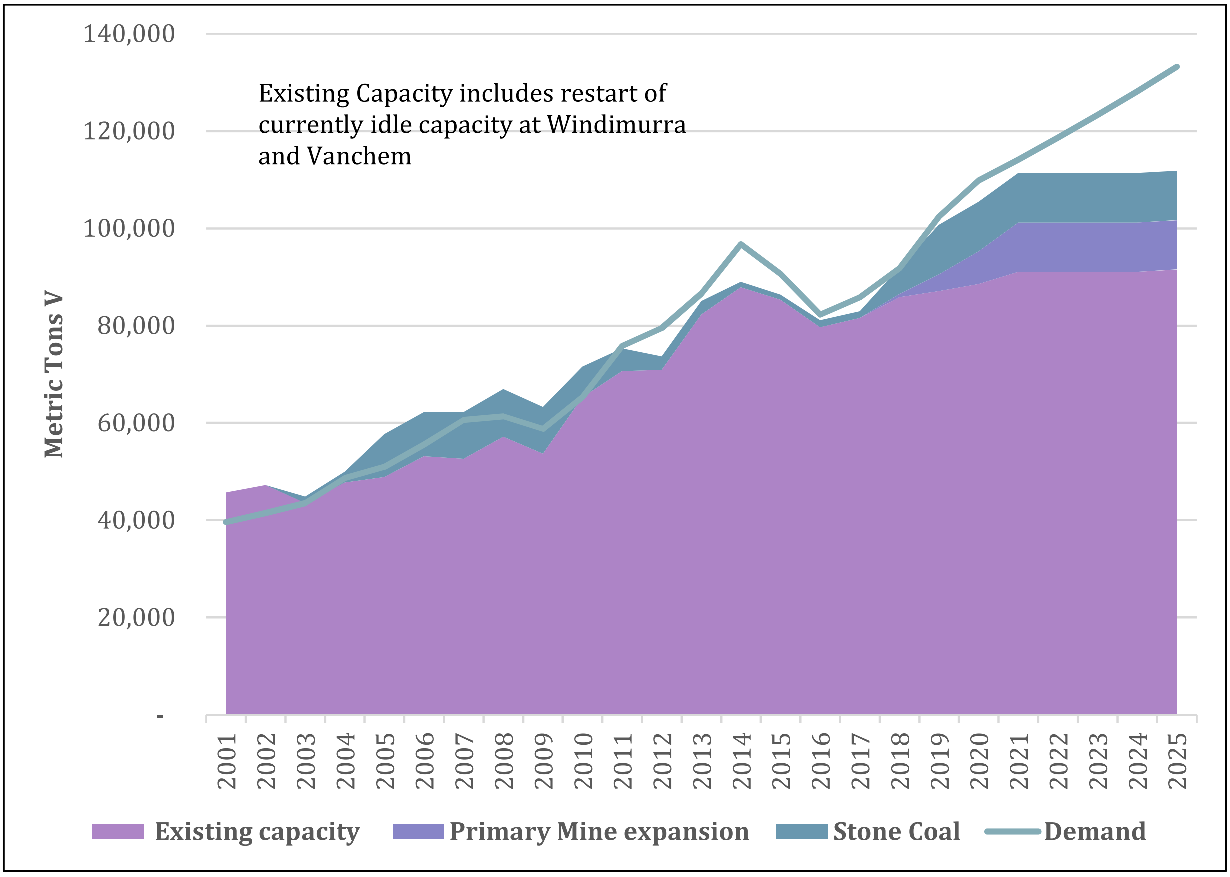

Figure 4: Vanadium Supply and Demand; source TTP Squared

The tightening supplies of vanadium are resulting in a global shortage, with prices appreciating dramatically since mid 2017, with the vanadium pentoxide prices having increased further in 2018 to in excess of US$30/lb V_2O_5, from a low of less than US$4/lb V_2O_5 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_2O_5 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 4: 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
	Indicated + Inferred	**55.0**	**1.1**	**48.5**	**5.4**	**6.3**	**12.7**	**0.1**	**0.007**	**0.2**
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
	Indicated + Inferred	**64.9**	**0.6**	**27.5**	**13.5**	**26.4**	**7.2**	**3.9**	**0.025**	**0.2**
Combined	**Indicated + Inferred**	**119.9**	**0.8**	**37.1**	**9.8**	**17.2**	**9.7**	**2.1**	**0.016**	**0.2**

* 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_2O_5 located within the Northern Block of tenements at Gabanintha.

Table 5: Ore Reserve Estimate as at 31 May 2018

Reserve Category	Tonnes (Mt)	Grade V_2O_5%	Contained V_2O_5 Tonnes (Mt)
Proven	-	-	-
Probable	16.7	0.96	0.16
Total	**16.7**	**0.96**	**0.16**

- *Includes allowance for mining recovery (95%) and mining dilution (10% at 0.0 %V_2O_5)*
- *Rounding errors may occur*

Capital Structure	
Tradeable Fully Paid Ordinary Shares	*47.533m*
Escrowed Fully paid Ordinary Shares[1]	*22.51m*
Fully Paid Ordinary Shares on Issue	*70.043m*
Unquoted Options[2] *($0.25 – 31/12/19 expiry)*	*14.590m*
Unquoted Options ($0.35 – 12/01/21 expiry)	*2.75m*
Quoted Options ($0.40 – 24/05/20 expiry)	*6.133m*
Unquoted Options ($0.40 – 24/05/20 expiry)	*3.258m*

1 – 22.51 million fully paid ordinary shares released from escrow on 21 December 2018.
2 –13.69 million unquoted options released from escrow on 21 December 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 1

1.1 Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary

Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*
	• *Aspects of the determination of mineralisation that are Material to the Public Report.*
	• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*
		• A combination of reverse circulation (RC) and diamond drilling has been completed across the project area to obtain 1m samples as follows:
		  o 101 RC holes for 11,274m on the Northern Block (including 4 pre-collars)
		  o 13 HQ diamond holes for 1,235m and 17 PQ diamond holes for 2,406m on the Northern Block
		• For the RC drilling 1m samples were cone split off the rig cyclone, with sample weights of nominally 2 to 3 kg collected.
		• Duplicate 2 to 3 kg samples were collected from every metre sample.
		• Duplicate samples were submitted for analysis for every 20 m down hole, ensuring duplicates were submitted for mineralised zones (based on geological logging).
		• For the diamond drilling 1m samples were cut half core for HQ and quarter core for PQ except where duplicates were presented to the lab and the primary sample was quarter core (one in every 20 to test the consistency of sample preparation) with samples typically 2 to 6 kg being collected.
		• Six ~0.5m whole core samples were collected for initial comminution testwork, with subsequent metallurgical testing completed as 4m Davis Tube recovery composites and bulk sampling has been completed to produce final V2O5 concentrate at bench / pilot scale.
		• Individual samples were assayed for every interval, with a representative half core being kept for the majority of intervals drilled.
		• Standards were submitted for analysis for every 20m down hole, testing QC of the XRF analysis.
		• Blank material (sand) was presented to the lab every 50th sample to test the cleanliness of the crushing procedure at the lab.
		• Samples analysed by XRF spectrometry following digestion and Fused Disk preparation.

Criteria	JORC Code explanation	Commentary
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• RC drilling utilised a 5.5" face-sampling hammer • HQ3/PQ3 triple tube (for oxide) and HQ2/PQ2 (below weathering surface) diamond core was drilled and oriented using a reflex ACT III tool and holes were surveyed using a Reflex Gyroscope.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• RC sample recovery was assessed based on the estimated bulk sample collected for each metre. Each bag was not weighed. For 1 in 3 holes a spring gauge was used to ensure the cone split remained within the 2 to 3 kg range. • Diamond drilling sample recovery was assessed based on the measured lengths of presented core, grinding marks and core loss noted in the drillers log with >95% recovery below the base of complete oxidation (which ranges from 5-70m across the mineralised units). Recoveries approached 100% in all but the faulted intervals in the fresh rock. • There does not appear to be any relationship between recovery and grade except that the massive mineralisation approximates 100% recovery as it does not weather easily.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Drill samples were logged in the field, with the total length of holes logged in detail. • RC drill chips for every meter were collected in trays and photographed. • Drill core was collected in trays, photographed, cut and palletised by hole near site for reference. • Basic geotechnical logging of the diamond core was undertaken including collecting recovery, rock quality designation (RQD) and fracture orientation data.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.*	• For the RC drilling duplicate 2 to 3 kg samples were collected from every metre sample. • Samples were cone split at the drill rig and represent approximately 5% of the total material for each metre sampled. • Most samples were dry. • Samples were dried and pulverised in the laboratory and fused with a lithium borate flux and cast into disks for analysis. • Field duplicates were submitted such that there were at

Criteria	JORC Code explanation	Commentary
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	least 1 duplicate sample for every 20 samples analysed. • For diamond drilling half core/quarter core was taken using a V notched slider on a manual diamond core saw, except for one in twenty samples where quarter core was presented to the lab as the primary sample and a duplicate quarter core presented with a different sample number. • The core saw cuttings were cleared every 30 samples and between high and low-grade samples and when chips were dislodged • Samples were collected in calico bags, double bagged in polweave bags and triple bagged in bulk bags to ensure no sample loss. Calico bags were dried then emptied and crushed in jaw crushers then pulverised in ring mills at Intertek Genalysis • Samples were fused with a lithium borate flux and cast in to disks for analysis by XRF. • Diamond twin drilling has been completed for 5 holes from the previous RC program with the RC under reporting grade only marginally suggesting the sample size has been appropriate to the material being sampled. Any loss of fines in previous RC drilling is not contributing to a systematic 'upgrading' of V_2O_5 or TiO_2 • Standards were submitted for analysis for every 20m down hole, validating QC of the XRF analysis • Blank material (sand) was presented to the lab every 50th sample to test the cleanliness of the crushing procedure at the lab.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Pulverised samples from every interval (overwhelmingly one metre samples) were fused with a lithium borate flux and cast in to disks and analysed by XRF spectrometry – method FB1/XRF77. • Field duplicates, appropriate certified reference materials (CRMs) including crushed standards derived from previous RC drilling, laboratory check samples and blanks were used. • Quality control procedures demonstrate acceptable levels of accuracy and precision have been achieved. CRM materials inserted to the sample stream at the laboratory have performed acceptably, and field duplicate samples have performed well. Blanks have not shown signs of target element enrichment.

Criteria	JORC Code explanation	Commentary
		• Initial compositing of samples was completed by Intertek Laboratories under the supervision of METS. • Salt roast / water leach testwork was completed by ALS metallurgy under the supervision of METS.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Significant intersections correlate with mineralised zones as defined from geological logging. All sampling was completed by an independent geologist Mr John McDougall BSc. (Hons). MAIG. • The estimation of significant intersections has been verified by an alternate company personnel. • There were no adjustments to assay data. Where the half metre core for metallurgical testwork was removed the intersection was reported excluding this interval.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• The grid system used for collar positions was MGA94 – Zone 50. • Planned hole collar positions were located using hand held global positioning system (GPS). Collars were later located by differential GPS (DGPS). The coordinates correlate well so DGPS hole position data has being verified. • RL's are also derived from the DGPS and were collected to +- 0.10m. The accuracy has been rounded for presentation. • Down hole surveys were completed using an Axis Gyro every 30m down hole and at the collar and end of hole.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The drill data in the Northern Block is on nominal 100m and 200m line spacing with holes located every 40 to 50m along the drill lines. • 13 diamond holes were drilled in the Northern Block with 5 twins of previous RC drilling and a broad spread of locations to measure representative density data. • Detailed airborne magnetics supports strike and down dip continuity assumptions of the massive magnetite zone which is known to host high grade mineralisation. • This continuity has been additionally supported by drilling data. • Data is considered appropriate for use in estimating a Mineral Resource. • No sample compositing is applied to the resource numbers.

Criteria	JORC Code explanation	Commentary
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The drilling has been completed at an orientation that would have been unlikely to have introduced a sampling bias. The drill holes are drilled orthogonal to the measured strike +-10°, the apparent thickness is 0.85 X the true thickness, drill deviations were not noticeably higher through the mineralised zone
Sample security	• *The measures taken to ensure sample security.*	• Samples were collected in calico, polyweave and bulk bags, sealed securely and transported by Company personnel until handover to a commercial transport company, which delivered the samples by road transport to the laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• A representative from the independent geological consultants, CSA Global, visited the site during the infill and extensional drilling program in the Northern Block and found drilling and sampling procedures and practices to be acceptable. • No other audits or reviews have been completed to date.

1.2 Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The areas drilled are located on current Prospecting Licences 51/2942, 51/2943 and 51/2944 and Exploration Licence 51/1510. • The tenements are granted and held by The KOP Ventures Pty Ltd, a wholly owned subsidiary of Technology Metals Australia Limited.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• RC drilling was completed in 1998 by Intermin Resources NL under an option agreement on tenements held by Oakland Nominees Pty Ltd – consisting of GRC9801 to GRC9805 (on Prospecting Licences 51/2164) and GRC9815 to GRC9817 (on Prospecting Licence 51/2183). • The areas drilled are located on current Prospecting Licences 51/2943 (GRC9801, GRC9802), 51/2944 (GRC9803, GRC9804, GRC9805) and 51/2942 (GRC9815 to GRC9817) held by The KOP Ventures Pty Ltd, a wholly owned subsidiary of Technology Metals Australia Limited. • Exploration prior to this drilling included geological mapping and limited rock chip sampling completed across a zone of outcropping vanadiferous

Criteria	JORC Code explanation	Commentary
		titanomagnetite layered mafic igneous unit by various parties.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Massive vanadiferous titanomagnetite within an intrusive medium to coarse grained anorthositic gabbroic layered sill roughly 1 km thick in the Gabanintha formation. Fractionation within the intrusive body forms cumulate layers of magnetite near the base of the intrusion. • Occurs both in outcrop and extending down dip in parallel layers with a dip of ~50-60 degrees steepening in the northern zone to >70 degrees.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• Not relevant. Exploration results are not being reported. • All relevant material from previous drilling has been reported to the ASX on the following dates: 9th March 2017, 4th April 2017, 19th April 2017, 31st August 2017, 14th September 2017, 18th October 2017 and 7th December 2017.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not relevant. Exploration results are not being reported.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• Not relevant. Exploration results are not being reported.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These*	• Not relevant. Exploration results are not being reported.

Criteria	JORC Code explanation	Commentary
	should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Not relevant. Exploration results are not being reported
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Not relevant. Exploration results are not being reported.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further detailed metallurgical processing testwork underway, including sighter kiln testwork and a range of comminution testwork.