TECHNOLOGY METALS AUSTRALIA LIMITED

ASX Announcement

21 April 2022

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Directors

Michael Fry:
Chairman

Ian Prentice:
Managing Director

Jacqueline Murray:
Director

Sonu Cheema:
Director and Company Secretary

Issued Capital

207,641,222 ("TMT") Fully Paid Ordinary Shares

17,533,335 – Unquoted Options – various exercise prices and dates

4,525,000 Performance Rights

ASX Code: TMT

FRA Code: TN6

VANITEC TRANSFORMING POSSIBILITIES

AMEC

OUTSTANDING RESULTS FROM MTMP ROAST-LEACH TESTWORK

- Testwork by leading kiln supplier FLSmidth confirms suitability of Yarrabubba ore to be processed through the Gabanintha vanadium processing plant.
- High vanadium **recoveries up to 96%** delivered from batch kiln roast – leach testwork on the representative **Yarrabubba** composite.
- This work shows ability to achieve very rapid conversion and very good physical flow behaviour, highlighting scope for enhanced operating parameters.
- New batch kiln roast – leach testwork on original **Gabanintha** pilot sample delivered rapid conversion and vanadium **recoveries up to 98%,** in excess of the 2019 DFS program under slightly modified conditions.
- FLSmidth testwork confirms superior metallurgical characteristics of the MTMP orebody and the ability to deliver industry leading recoveries using standard vanadium processing technology.

The Board of Technology Metals Australia Limited (ASX: **TMT**) (**Technology Metals**, or **the Company**) is pleased to provide an update on progress of the comprehensive vanadium roast-leach testwork program being undertaken at FLSmidth's ("**FLS**") testing facility in Pennsylvania.

Work completed by FLS on representative samples from the Murchison Technology Metals Project ("**MTMP**") has confirmed industry leading roast – leach vanadium recoveries for Yarrabubba, as well as identifying enhanced performance for Gabanintha, under the optimal conditions defined for the Yarrabubba feed. Very rapid conversion and very good physical flow behaviour in the kiln has been identified for both feed sources.

Managing Director Ian Prentice commented:

"Completion of this work in collaboration with FLSmidth marks a key milestone for the MTMP, confirming industry leading vanadium recoveries across the extent of the Project using standard processing technologies.

Outcomes of this comprehensive roast – leach testwork phase support delivery of an updated ore reserve estimate as a core component of the Integration Study, and importantly enable smooth progression to the Implementation Phase of the Project, accelerating the delivery of the world's next large scale primary vanadium mine."

Integrated MTMP – Strategic Rationale

The Murchison Technology Metals Project ("**MTMP"**) consists of the Gabanintha Project ("**Gabanintha**") and the Yarrabubba Project ("**Yarrabubba**"), located to the south of Meekatharra in the mid west of Western Australia. Gabanintha was the subject of a Definitive Feasibility Study as a stand-alone vanadium development project, delivering robust economics over an initial 16 year mine life. The satellite Yarrabubba deposit offers higher vanadium in concentrate grades (than Gabanintha) and the opportunity to produce a highly sought after titanium co-product, making it an attractive addition to the MTMP.

The integration of Yarrabubba into the MTMP, and the resultant opportunity to enhance the economics of the project as well as accelerate the delivery of vanadium production, combined with the advanced stage of Gabanintha approvals, provides opportunities to actively progress offtake discussions with a range of counterparties across a range of industries and geographic jurisdictions.

The MTMP will be a long term, low cost stable producer of high purity vanadium, a critical mineral with a vital role to play in the efficient and effective deployment of renewable energy and reduction of emissions. The Project will also be a producer of the highly sought-after titanium by-product whilst mining and processing ore from Yarrabubba.

Murchison Technology Metals Project Roast-Leach Testwork

The program of roast-leach testwork at FLSmidth's facilities in Pennsylvania, USA has now been completed, with the last of the results being collated and reported. This work commenced in late 2021 and was largely focused on assessing the performance of Yarrabubba ore as feed for the integrated MTMP vanadium processing circuit.

Samples for this work were concentrates from a representative 'preliminary orebody blend' ("**POB**") composite consisting of the core mineralisation units from Yarrabubba; massive, hanging wall 1 and footwall 1, weighted appropriately based on resource quantification. Two samples (~130 kg each) of this composite were milled to P80 150 µm and P80 250 µm before being magnetically separated to yield concentrates grading 1.57% V_2O_5 and 1.52% V_2O_5 respectively.

Figure 1: FLSmidth Batch Kiln

A range of bench scale muffle furnace roast-leach sighter tests were completed on representative Yarrabubba magnetic concentrates, to assess sensitivity of vanadium recovery to a range of operating parameters. The work was then scaled up to batch kiln roast – leach testwork, based on the POB concentrates at a range of salt dosages and temperatures.

Batch kiln roast-leach testwork on the POB concentrate, at a range of salt dosages and temperatures, delivered very high vanadium recoveries of up to 96% when temperature was maintained at around 1275˚C in the batch kiln. Typical vanadium recoveries ranged between ~85% and ~95%, with a mid point recovery of 90%, confirming that vanadium is readily extractable from the Yarrabubba concentrates with a slight adjustment to the conditions developed for the Gabanintha DFS and an optimal grind size of P80 150 µm to maximise both vanadium and titanium recovery.

Under the optimal conditions identified the testwork highlighted very good physical flow behaviour in the kiln for the Yarrabubba feed, a key consideration in regard to delivering enhanced operating parameters and efficiencies. It also identified a more rapid vanadium conversion, indicating potential for reduced kiln residence time in operation and providing scope to consider kiln sizing in context of overall production profile.

Batch kiln roast – leach testwork has also been completed on the original Gabanintha representative pilot program composite at both P80 150 µm and P80 250 µm grind sizes to assess relative performance and performance under the the optimal Yarrabubba feed conditions.

Results of the updated batch kiln roast – leach testwork on the Gabanintha representative pilot program[1] composite sample have been received for the P80 250 µm grind size, indicating enhanced vanadium recoveries of up to 98% at the operating temperature of around 1275˚C.

This work also highlighted the very rapid vanadium conversion, with ~97% vanadium recovery achieved after only 15 minutes in the batch kiln, also demonstrating scope to reduce kiln residence time in operations. This material also demonstrated enhanced physical flow behaviour when compared to similar tests under the 2019 DFS conditions.

Results are being collated for the Gabanintha representative pilot program composite P80 150 µm grind size batch kiln roast – leach test runs.

Conclusion

The completion of this testwork program in collaboration with TMT's pyro metallurgical technology partner, and leading supplier of kilns to the vanadium industry, FLSmidth, is a considerable step forward for the Project, highlighting that MTMP ore feed, from both Yarrabubba and Gabanintha, is able to deliver industry leading vanadium recoveries using standard vanadium processing technology. This work represents a very solid foundation for the completion of the Integration Study and progression of the MTMP into the Implementation Phase, with scope to deliver improved kiln recoveries and operating parameters compared to the 2019 DFS.

The outcomes of this comprehensive roast-leach testwork campaign will contribute as a significant modifying factor to the completion of the integrated MTMP ore reserve estimate that is being prepared based on the Global MTMP Measured and Indicated Mineral Resource estimate of 50.2Mt @ 0.9% V_2O_5.

The updated MTMP ore reserve estimate is a key plank of the Integration Study, which will provide an integrated mining schedule, optimal sequencing of ore sources across the MTMP and output profile of both vanadium and ilmenite products. This work will be a key milestone in delivery of the Implementation Phase.

[1] TMT ASX Announcement, 19 June 2019: Pilot Plant Scale Kiln Testwork Confirms High Vanadium Recovery

VANADIUM MARKET OUTLOOK

The global vanadium price has appreciated significantly over the past 12 months (Figure 2) as global economies are starting to recover from the impacts of the COVID-19 pandemic. Stimulus spending focused on enhanced infrastructure has supported the growth in use of construction steel and a clear focus on reducing global emissions resulting in increasing deployment of renewable energy and the associated increased requirements for grid scale stationary storage solutions such as VRFB's.

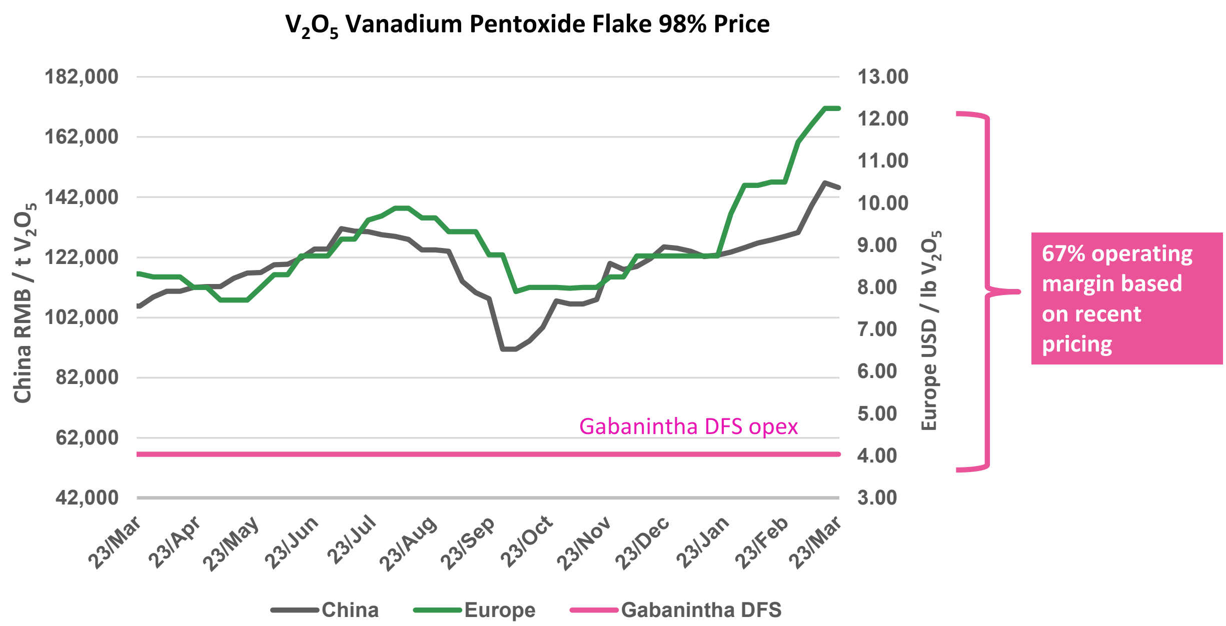

Figure 2: Vanadium Pentoxide (98% flake) Price – China vs Europe

In recent times, the European vanadium price appreciation has accelerated significantly as a result of the conflict in Ukraine, with the expectation of significant supply disruptions following sanctions on Russia. Russia (CIS) directly accounted for approximately 8% of global vanadium supply in 2021 (Figure 3), with a further 5 – 6% of global vanadium supply indirectly attributable to Russia. The chart below also highlights China's dominant position in the vanadium market.

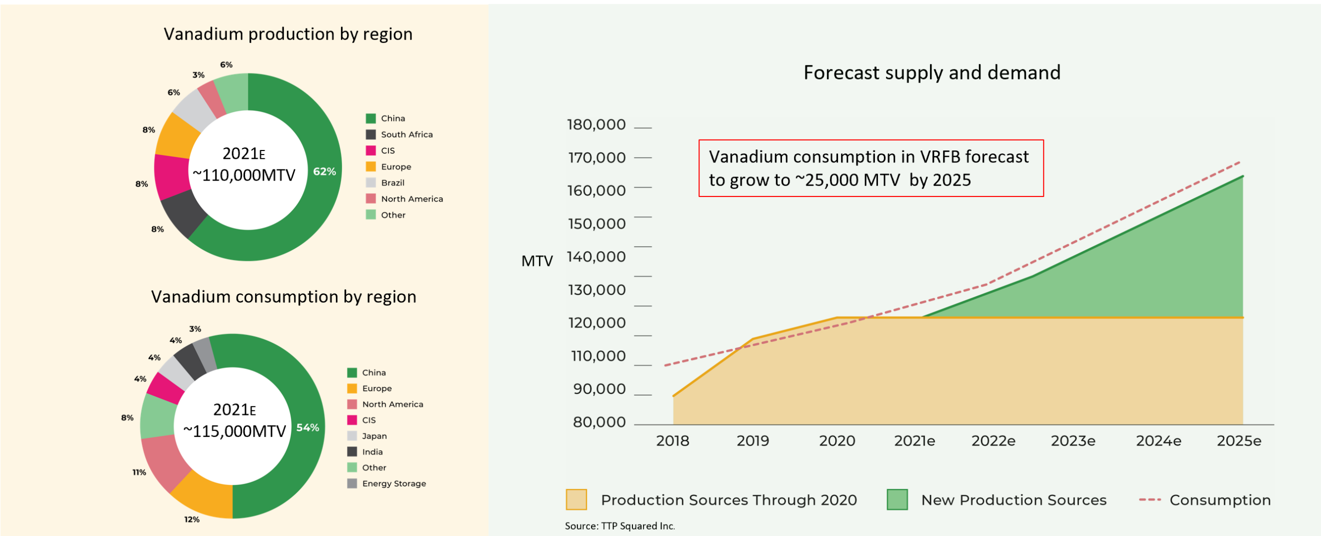

Figure 3: Vanadium Supply and Demand

Figure 3 also highlights the forecast supply – demand dynamics of the global vanadium industry, excluding any potential short to midterm impacts of supply disruptions resulting from the conflict in Ukraine.

The chart highlights consistent growth in consumption from 2018, accelerating slightly from mid-2022 with an expected increase in vanadium use in VRFB's. Demand is forecast to grow to more than 160,000 MTV (~285,000 MT V_2O_5 equivalent) from 2021 levels of around 115,000 MTV (~205,000 MT V_2O_5 equivalent). This demand is expected to consistently outstrip supply, maintaining pressure for elevated vanadium prices over the forecast period, with production to meet this demand growth forecast to come from increased output from existing suppliers supplemented by new primary supply sources such as the MTMP.

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 very significant use for vanadium is the rapidly developing energy storage (battery) sector with the expanding use and increasing penetration of the vanadium redox flow batteries ("**VRFB's"**). VRFB'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 VRFB'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.

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

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

Ian Prentice

Managing Director
Technology Metals Australia Limited

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About Technology Metals Australia Limited

Technology Metals Australia Limited (ASX: TMT) was incorporated on 20 May 2016 for the primary purpose of identifying exploration projects in Australia and overseas with the aim of discovering commercially significant mineral deposits. The Company's primary exploration focus has been on the Murchison Technology Metals 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 (VRFB) market.

The Project consists of twelve granted tenements and two applications divided between the Gabanintha Vanadium Project (12 tenements) and the Yarrabubba Project (2 tenements). Vanadium mineralisation is hosted by a north west – south east trending layered mafic igneous unit with a distinct magnetic signature. A key differentiation between Gabanintha and a number of other vanadium deposits is the consistent presence of the high-grade massive vanadium – titanium – magnetite basal unit, which results in an overall higher grade for the Murchison Technology Metals Project.

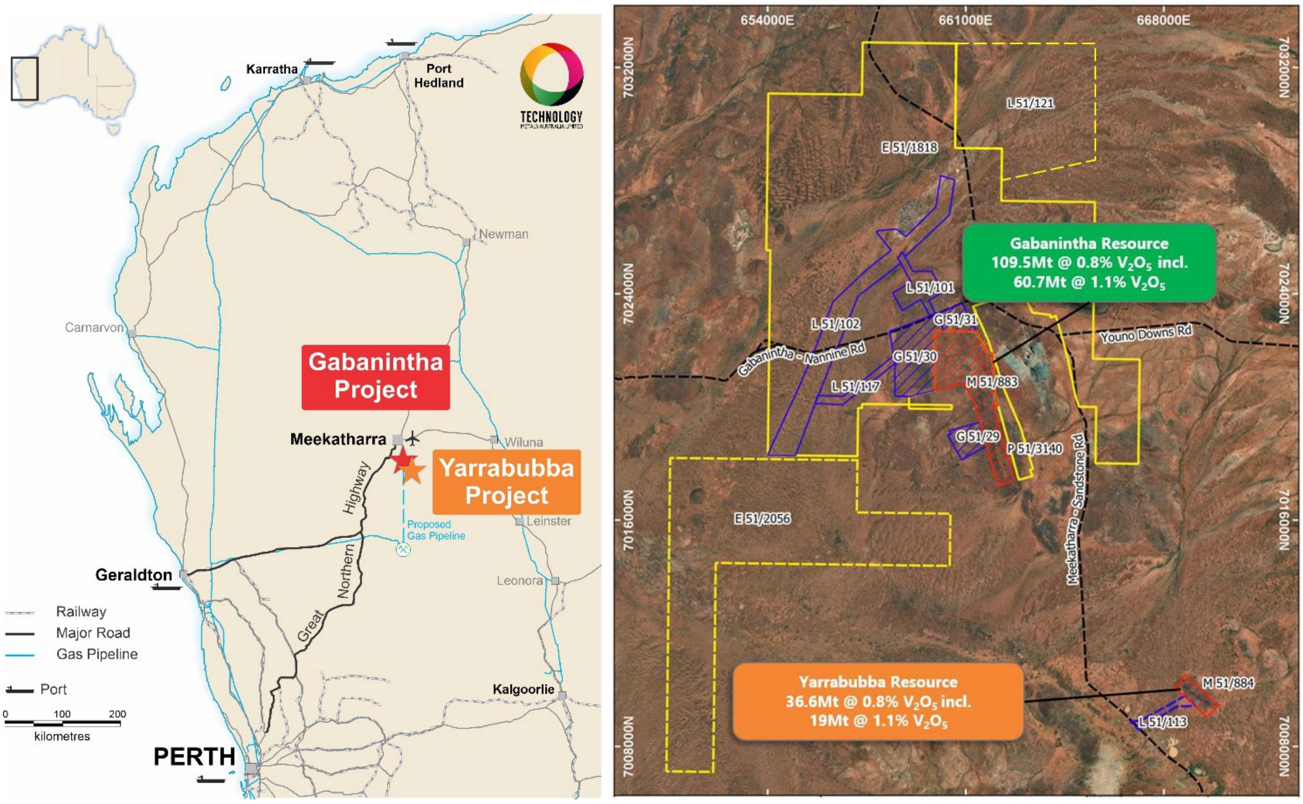

Figure 4: MTMP Location and Tenure

Data from the Company's 2017, 2018 drilling programs, including 111 RC holes and 53 HQ and PQ diamond holes at the Gabanintha Project and 46 RC holes and 27 PQ sized diamond holes completed in late 2018 and 2020/21 at the Yarrabubba Project, 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 combined Projects. The Resource estimate confirms the position of the Murchison Technology Metals Project as one of the highest grade vanadium projects in the world.

Global Mineral Resource estimate for the MTMP as at 9 November 2021

Material Type	Classification	Mt	V_2O_5%	Fe%	Al_2O_3%	SiO_2%	TiO_2%	LOI%	P%	S%
Massive Magnetite	**Measured (North)**	**1.2**	**1.0**	**44.7**	**6.2**	**10.4**	**11.4**	**0.0**	**0.009**	**0.2**
	Indicated (North)	18.5	1.1	49.1	5.2	5.8	12.9	-0.1	0.007	0.2
	Indicated (South)	12.0	1.1	48.2	5.4	7.4	12.5	1.8	0.010	0.3
	Total Indicated	**30.6**	**1.1**	**48.8**	**5.3**	**6.4**	**12.7**	**0.6**	**0.008**	**0.2**
	Inferred (North)	41.0	1.1	47.7	5.6	7.1	12.6	0.3	0.008	0.2
	Inferred (South)	7.0	1.1	47.4	5.7	8.3	12.3	2.1	0.010	0.3
	Total Inferred	**48.1**	**1.1**	**47.7**	**5.6**	**7.3**	**12.6**	**0.5**	**0.008**	**0.2**
	Massive Global	**79.8**	**1.1**	**48.1**	**5.5**	**7.0**	**12.6**	**0.6**	**0.008**	**0.2**
Disseminated / Banded Magnetite	Indicated (North)	10.3	0.6	28.6	13.1	25.5	7.5	3.0	0.030	0.2
	Indicated (South)	8.1	0.6	28.5	12.0	25.2	7.3	2.4	0.018	0.2
	Total Indicated	**18.4**	**0.6**	**28.6**	**12.6**	**25.4**	**7.4**	**2.7**	**0.025**	**0.2**
	Inferred (North)	38.5	0.5	27.1	12.7	27.4	6.9	3.3	0.027	0.2
	Inferred (South)	9.4	0.5	26.6	13.3	27.1	6.9	2.4	0.014	0.3
	Total Inferred	**47.9**	**0.5**	**27.0**	**12.8**	**27.4**	**6.9**	**3.1**	**0.025**	**0.2**
	Diss / Band Global	**66.3**	**0.5**	**27.4**	**12.8**	**26.8**	**7.0**	**3.0**	**0.025**	**0.2**
Combined	**Global Combined**	**146.2**	**0.8**	**38.7**	**8.8**	**16.0**	**10.1**	**1.7**	**0.016**	**0.2**

** Note: The Mineral Resources were estimated within constraining wireframe solids using a nominal 0.9% V_2O_5% lower cut-off grade for the massive magnetite zones and using a nominal 0.4% V_2O_5% lower cut-off grade for the banded and disseminated mineralisation zones. The Mineral Resources are quoted from all classified blocks within these wireframe solids above a lower cut-off grade of 0.4% V_2O_5%. Differences may occur due to rounding.*

Data from the previous global Mineral Resource estimate and the 2019 DFS on the GVP were used by independent consultants CSA Global to generate a Proven and Probable Ore Reserve estimate based on the Measured and Indicated Mineral Resource of 39.6 Mt at 0.9% V_2O_5 located at Gabanintha and Yarrabubba (see ASX announcement dated 16 September 2020). Work is underway to update the Proven and Probable Ore Reserve estimate for the MTMP as part of the Yarrabubba integration work.

Ore Reserve Estimate as at 15 September 2020

Reserve Category	Tonnes (Mt)	Grade V_2O_5%	Contained V_2O_5 Tonnes (Mt)
Proven	1.1	0.96	0.01
Probable	37.9	0.90	0.34
Total	39.0	**0.90**	**0.26**

- *Note: Includes allowance for mining recovery (98% for massive magnetite ore and 95% for banded and disseminated ore) and mining dilution applied as a 1 metre dilution skin; resulting in a North Pit dilution for massive magnetite ore of 13% at 0.45% V_2O_5, and North Pit dilution for banded and disseminated ore of 29% at 0.0% V_2O_5; a Central Pit dilution for massive magnetite ore of 10% at 0.46% V_2O_5, and Central Pit dilution for banded and disseminated ore of 20% at 0.0% V_2O_5.; a Southern Pit dilution for massive magnetite ore of 12% at 0.49% V_2O_5, and Southern Pit dilution for banded and disseminated ore of 15% at 0.21% V_2O_5)*
- *Rounding errors may occur*

Capital Structure	
Fully Paid Ordinary Shares on Issue	*207.6m*
Unquoted Options ($0.20 – 10/05/23 expiry)[1]	*8.00m*
Unquoted Options ($0.50 – 01/01/24 expiry)[2]	*3.775m*
Unquoted Options ($0.25 – 15/06/22 expiry)	*2.18m*
Unquoted Options ($0.60 – 30/06/25 expiry)[3]	*3.575m*
Class B Performance Rights[4]	*2.450m*
Class D Performance Rights[5]	*2.075m*

1. *Director and employee options – 3.875m vested on grant of the mining licences, 4.125 million vest on MTMP FID.*
2. *Employee options – 3.775million vest and subject to the Company making a final investment decision (FID) for the MTMP prior to 30 October 2023.*
3. *Employee options vest subject to the Company achieving first commercial production from the MTMP prior to 30 June 2025.*
4. *Each Class B Performance Right is a right to receive one fully paid ordinary share in TMT, subject to the terms of the employee incentive scheme and subject to the Company making a final investment decision (FID) for the MTMP prior to 30 October 2023.*
5. *Each Class D Performance Right is a right to receive one fully paid ordinary share in TMT, subject to the terms of the employee incentive scheme and subject to the Company achieving first commercial production from the MTMP prior to 30 June 2025.*

Forward-Looking Statements

This document includes forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Technology Metal Australia Limited's planned exploration programs, corporate activities and any, and all, statements that are not historical facts. When used in this document, words such as "could," "plan," "estimate," "expect," "intend," "may", "potential," "should" and similar expressions are forward-looking statements. Technology Metal Australia Limited believes that it has a reasonable basis for its forward-looking statements; 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 John McDougall. Mr McDougall is the Company's Exploration Manager and a member of the Australian Institute of Geoscientists. Mr McDougall 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 McDougall 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 Aaron Meakin is a Principal Consultant of CSA Global Pty Ltd and is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr Aaron Meakin 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 Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC Code**). Mr Aaron Meakin consent to the disclosure of the information in this announcement 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 formerly an employee of CSA Global Pty Ltd. Mr Grosso takes overall responsibility for the Report as Competent Person. Mr Grosso is a Member 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, Daniel Grosso 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 Murchison Technology Metals project is based on and fairly represents, information and supporting documentation compiled by Mr Brett Morgan, a full-time employee of Technology Metals Australia. Mr Morgan is a Member 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, Brett Morgan 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

JORC Code, 2012 Edition – Table 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.*	• Diamond Drilling was undertaken on PQ size using triple tube drilling in the oxidised rock and conventional double tube in fresh rock to ensure maximum recovery and representivity. • Core loss was typically <0.2m in completely oxidised samples runs of 1.5m and >99.6% core recovery was achieved in fresh rock. • Sampling was completed using a diamond saw with half core being sampled to the base of partial oxidation (max 18m) and quarter core being the primary sample for fresh rock, • One primary sample was selected for assay from each metre, with every 20th sample having a duplicate quarter core. • Except where geotechnical samples were taken, core was sampled on a 1m or 0.5m basis. Geotechnical samples were re-inserted into the assay stream as whole crushed core. • Core was cut using diamond blade core saw into quarter using a bottoming cut left of the orientation line. • Samples were taken from the same side of the orientation line throughout each hole. For un-oriented core, samples were selected from a consistent side of the core. • Core was measured on a 20cm basis by a KT-10 Plus magnetic susceptibility meter. • Reverse circulation (RC) drilling was sampled on a 1m basis. Each metre drilled was cone split off the rig cyclone, with two 2-3kg sub-samples collected for each metre. • One primary sub-sample was selected for assay from each metre. • Secondary sub-samples were submitted for analysis for every 20th sample, thereby duplicating the primary sub-sample.

Criteria	JORC Code explanation	Commentary
		• Reverse circulation drill holes were analysed for magnetic susceptibility by either a KT-9 or KT-10 magnetic susceptibility meter on a 1m basis. • All Samples are analysed by XRF spectrometry following digestion and Fused Disk preparation. • Blanks and Certified Reference Materials (CRM) were inserted at a rate of 1:50 and 1:20 samples, respectively. CRMs were produced from mineralized material sourced from TMT's Gabanintha deposit and certified by a commercial CRM vendor. • Diamond drilling occurred in September 2018, November 2020 to January 2021, sampling was undertaken by diamond saw late in 2019, and 2021 and assay was conducted on delivered core sample in early 2020 to mid-2021. A total of 27 diamond holes for 3,404 m was used in the Mineral Resource estimate. • RC drilling was complete during three different programs: July 2017, September 2018, and June 2021 with sampling and assay occurring as soon as practical thereafter. A total of 45 RC holes for 4,883 m was used in the Mineral resource estimate. • Where possible, diamond drill holes were probed via downhole Televiewer probe and selected drill holes probed with down hole magnetic susceptibility sonde. • QEMScan was used to confirm that vanadium is hosted within titanomagnetite minerals within the host gabbro.
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).*	• PQ2/3 sized drill core was selected for future metallurgical reasons • Reverse circulation drilling completed with 143mm face-sampling hammer • Diamond holes were surveyed by Axis system north seeking gyro and core was oriented by Reflex ACT 111 tool.
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.*	• 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. • Poor sample recovery or quality (wet, etc) was recorded in logging sheets, however significant wet sample was limited to one RC hole • Weights of primary and secondary sub-samples were compared to check variability.

Criteria	JORC Code explanation	Commentary
		• There does not appear to be any relationship between recovery and grade in the "massive" mineralisation. • Recovery was maximised in diamond drilling by using triple tube in weathered rock. Core recovery was assessed by measuring expected and recovered core and losses were logged where noted. Core recovery exceeded 96.8% below the base of complete oxidation and 99.6% in fresh rock.
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.*	• All chips and core have been qualitatively geologically logged to a minimum interval length and precision sufficient for calculation of a mineral resource. • All core holes have been logged by an independent geotechnical consultant. • All diamond core and chip trays have been photographed to a high resolution for electronic storage, for diamond holes this occurred prior to sampling. • Where possible, diamond drill holes and selected reverse circulation drill holes were probed via downhole Televiewer probe and selected drill holes probed with down hole magnetic susceptibility sonde. • Geotechnical logging was undertaken on all diamond holes. Geotechnical studies are underway to optimise wall angles on proposed pits.
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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Core was sampled on ¼ basis by diamond saw. Some sections of whole core were selected for geotechnical or metallurgical sampling and are noted as such in the database. • All chips and core have been qualitatively geologically logged to a minimum interval length and precision sufficient for calculation of a mineral resource, for RC chips this is at a consistent 1m interval with representative chips collected in sample trays and photographed. • All core holes have been logged by an independent geotechnical consultant. • Remaining drill core is stored on site and at the commercial laboratory with intervals and hole identifiers. • Duplicate sampling was undertaken at a rate of 1 per 20 samples to monitor repeatability of all sampling. • Core was duplicate sampled by assaying a second ¼ in the fresh zone or a 1/2 core leaving no sample in the oxide zone

Criteria	JORC Code explanation	Commentary
		• Samples presented to the laboratory were split to <2kg and pulverised to 95% passing 75 microns. 30g of pulverised material was split and presented for assay. • Davis Tube Recovery (DTR) tests were completed on selected 2m composites of mineralised intervals defined by assay data and coded to geological unit and weathering code.
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 metre were fused with a lithium borate flux and cast in to disks and analysed by XRF spectrometry – method FB1/XRF77. In addition LOI was completed by Gravimetric analysis. • This is considered to approximate a total analysis method. • Davis Tube Recovery (DTR) was performed via compositing coarse and selected pulverised sample rejects, by a commercial laboratory. • Fresh has been tested by DTR method at 75 micron as part of the metallurgical testwork for the previously scoped Yarrabubba Iron-Vanadium concentrate project. • Comparisons of DTR are also done on P80 250 micron target sizing and laser sizing was done as a check. • Field duplicates (at least 1 duplicate sample for every 20 samples analysed), laboratory check samples, blanks (1 in 50) and commercial reference materials (1 in 20) are considered to be suitable quality control procedures. • 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. Batches of samples are periodically sent for check assay by an umpire laboratory. 54 pulp check assays have been completed.

Criteria	JORC Code explanation	Commentary
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.*	• Logging was completed onto paper and transcribed or digitally captured in the field • All logging and sampling information has been captured into a commercially supplied database. • Assay data was supplied in electronic format • Data has been subjected to QAQC cross-checks and verification by company personnel prior to acceptance into the database. • Significant intersections were correlated with mineralised zones as defined from geological logging. • All significant intersections were verified by an independent geologist as well as the Competent Person for Reporting of Exploration Results. • The estimation of significant intersections has been verified by alternate company personnel. • There were no adjustments to assay data. • 2 RC holes have been twinned by diamond holes.
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 is MGA94 – Zone 50. • A 2017 50cm resolution digital elevation model and high-resolution aerial photogrammetric survey was used for topographic survey control. • Planned hole collar positions were located in the field using hand held GPS. • Final hole collar positions were surveyed using differential RTK GPS with an accuracy of ±5cm horizontally and ±10cm vertically. • Down hole deflections were measured using an Axis CHAMP north-seeking gyroscope every 30m down hole and near the collar. • Downhole magnetic susceptibility and Televiewer data was captured on a <1cm accuracy down 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 is on nominal 100m line spacing with holes located approximately every 40-50m along the drill lines. • Detailed airborne magnetic modelling 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 and structural interpretation where offset is noted in surface mapping. • Data is considered appropriate for use in estimating a

Criteria	JORC Code explanation	Commentary
		Mineral Resource. • No sample compositing is used in primary assay except for DTR recovery testing.
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, except in geotechnical holes GBDD037, GBDD043, GBDD044 and GBDD045, drill deviations were not noticeably higher through the mineralised zone
Sample security	• *The measures taken to ensure sample security.*	• RC Samples were collected in polyweave 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. • Drill core samples for geotechnical rock property testing were transported to the commercial laboratory as whole core by registered consignment and sequential sample numbers were assigned and sample bags presented to the geotechnical lab for submission as discrete crushed samples to the commercial assay laboratory. All remaining core from the current program was labelled with non-degrading metal tags. • For RC holes transport was completed within one week and sample reconciliation and crushing at the lab occurred within 14 days of receipt. The diamond drilling commercial transport was tracked and after a holding period at the Laboratory the samples were reconciled against the sample list on the submissions provided after the 2019 sampling program.
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 and reported drilling and sampling procedures and practices to be acceptable. • Apart from umpire assay and use of experienced field geologists (all >20yrs experience) to supervise sampling, no written audits have been completed to date. Data Validation is done by a supervising geologist, database geologist and a Resource consultant all independent and contracted to the company.

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 Mining Lease M51/884 • The tenements for the global Mineral Resource Estimate 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.*	• Reverse circulation 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 were located on historical Prospecting Licence 51/2942 (GRC9815 to GRC9817) held by The KOP Ventures Pty Ltd (a wholly owned subsidiary of Technology Metals Australia Limited) before conversion to the granted Mining Lease, • Exploration prior to this drilling included geological mapping and limited rock chip sampling completed across a zone of outcropping vanadiferous titanomagnetite layered mafic igneous unit by various parties.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Massive vanadiferous titanomagnetite layered mafic igneous unit in outcrop and disseminated magnetite mineralisation under cover hosted within a gabbro intrusion assigned to the Archaean Meeline Suite.
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.*	• See attached Appendix 1 • Previous ASX Announcement dated 14 September 2017, 30 April 2020, 1 July 2020, 16 September 2020.
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.*	• High grade intervals (as shown in Figure 1) have been defined nominally using a 0.9% V2O5 lower cut-off grade, length weighted average grades and nominally

Criteria	JORC Code explanation	Commentary
	• *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.*	no more than 1m of consecutive lower / medium grade mineralisation. • Where intervals were taken for specific geotechnical tests (6 samples of generally <5cm), the grade is calculated as zero for the contribution to the composite intervals. Longer geotechnical core samples were assayed in a separate batch after geotechnical testing. Assay was done on crushed whole core included using appropriate QAQC and reconciliation with the correct downhole interval. No weighting was given to the whole core versus PQ quarter core in composites.
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').*	• Down hole lengths of mineralisation are reported in Figure 1. • True width is estimated at approximately 0.85 x down hole widths except in GBDD037 and GBDD044 which are drilled oblique for geotechnical purposes and where mineralisation steepens against major faults, however true widths are not expected to be less than 70% in these cases. • See the cross sections shown in Figure 4 and Figure 5 for an approximation of true width.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• A map showing tenement and drill hole locations has been included (see Figure 1 and 3). • Cross sections showing the relationship between mineralisation and geology has been included (see Figure 4 and Figure 5).
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.*	• Results for all mineralised intervals have been included, including both low and high grades.
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.*	• Geophysical data in the form of aero magnetic data assists the geological interpretation of the main high magnetite unit and highlights offsets due to faults and or dykes. Historic drilling data is not used due to uncertainty in location and orientation Oxidation state has been modelled based on geological logging and geometallurgical characterisation • Bulk density measurements using a mixture of calliper and immersion methods have been completed on diamond core samples of fresh, transitional and oxidised material from the Southern tenement. These have been supplemented by, and compared to, measurements

Criteria	JORC Code explanation	Commentary
		taken from the Northern tenement core. A reasonable number of samples have been measured by both methods to ensure there is no significant bias when using data obtained by either of the two methods to estimate the various material type densities. • Metallurgical test work and bulk sampling results indicate amenability of magnetite concentrates to conventional roast leach processing (See ASX Release 12th December 2018 – Outstanding Gabanintha Metallurgical Results) and DTR has been found to be a suitable proxy for Low Intensity Magnetic Separation. • Sighter roast-leach testwork undertaken in July 2018 on Yarrabubba concentrates achieving vanadium extractions of 79.4% and 74.9% for massive fresh and transitional material respectively. These align with Gabanintha roast-leach data achieving vanadium extractions of 79.6% under identical roast conditions for massive fresh • Low values of deleterious elements (As, Mo , Cr) are associated with mineralisation • Groundwater quality for potential water supply is suitable for use in mine planning and processing, with elevated salinity at the north-western end of the prospecting licence approaching the large channelised sheetwash catchment in adjacent tenements.
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.*	• Samples from diamond drilling have been collected to enable further metallurgical testing of the different grades and types of mineralisation encountered in the drilling. It is expected LIMS testwork and QEMScan mineralogy will be undertaken on coarse rejects reserved at the laboratory. • Diamond drilling has also been used to gather geotechnical data relevant to open pit mine design parameters. • The strike length of the outcropping mineralisation has been drill tested with outcrop receding under cover in adjacent tenements to the North West and South East. More high yielding fresh vanadiferous titaniferous magnetite may be present down dip in the structurally deformed and thickened apparent footwall in the vicinity of GBDD034. • A reserve estimate is under preparation for a definitive feasibility study.

Criteria	JORC Code explanation	Commentary
		• Vanadium extractability through the roast-leach process has been confirmed by historic testing of magnetic concentrates originating from RC samples at lower than design salt dosages of 23 kg of soda ash per tonne of magnetic concentrate producing vanadium extractions of approximately 80% • Roast-Leach testing is underway to confirm the vanadium extractability indicated previously. This is being undertaken on a representative composite of massive, hanging wall and foot wall material and at roasting conditions of the Gabanintha DFS. • A program is underway to assess and confirm the grind liberation characteristics of Yarrabubba material to optimise the magnetic concentrate grind size through assessing titanium recovery to the ilmenite product and corresponding vanadium circuit performance. • A program is scheduled to comprehensively assess the variability of the Yarrabubba deposit and its performance through the anticipated process which will be commenced upon the completion of the grind liberation program • A pilot program is anticipated to be commenced to finalise the ilmenite recovery circuit of the non-magnetics.

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used*	• Drilling data is stored in a DataShed database system which is an industry best practise relational geological database. Data that has been entered to this database is cross checked by independent geological contracting staff to ensure accuracy. CSA Global has been provided with a number of pdf format assay certificates from the laboratory and completed its own checks, finding that all checked assay data was correctly captured in the relevant database table. • Data used in the Mineral Resource estimate is sourced from a database export. Relevant tables from the database are exported to MS Excel format and converted to csv format

Criteria	JORC Code explanation	Commentary
		for import into Datamine Studio RM software. • Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, and missing collars.
Site Visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case*	• A two-day site visit was completed by a CSA Global staff member in August 2017 while drilling was in progress. The site visit confirmed that industry best practice procedures are in place and being followed, with drilling, sampling and logging practice being observed. Drill collar locations have been captured by hand held GPS confirming their stated survey locations. Mineralisation outcrop extents were followed, with measurements taken confirming the interpreted strike and dip. • A two-day site visit was completed by a CSA Global staff member in October 2018 while drilling was in progress. The site visit confirmed that industry best practice procedures are in place and being followed, with drilling, sampling, density measurement and logging practice being observed. Drill collar locations have been captured by hand held GPS confirming their stated survey locations. • A site visit was undertaken by CSA personnel in 2021 to verify collar locations, drill spacing and various changes to geological data collection techniques.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Based on surface geological and structural mapping, drill hole logging and sample analysis data and geophysical TMI data, the geology and mineral distribution of the massive V-Ti-magnetite zone appears to be relatively consistent through the interpreted strike length of the deposit. Cross-cutting faults, interpreted from the drill hole and magnetic data and surface mapping, have been modelled. These features displace the mineralisation as shown in the diagrams in the body of this report. In the hangingwall and footwall of the massive magnetite zone, the mineralised units are defined at a nominal 0.4% V_2O_5 lower cut-off grade and a nominal minimum 3 m downhole continuity. The geological and grade continuity of some of these zones is not as well understood as the massive magnetite unit. Drill

Criteria	JORC Code explanation	Commentary
		sample logging and analysis demonstrates consistent zones of more disseminated magnetite mineralisation, containing centimeter to decimeter scale magnetite bands, existing in the hanging wall and foot wall of the massive unit along strike and on section. Weathering surfaces for the base of complete oxidation (BOCO) and top of fresh rock (TOFR) have been generated based on a combination of drill hole logging, magnetic susceptibility readings and sample analysis results. A partially mineralised cover sequence is interpreted as depleting the top few metres of the model interpreted based on lithological logging of the drilling. • Surface mapping, drill hole intercept logging, sample analysis results and TMI data have formed the basis of the geological and mineralisation interpretations. Assumptions have been made on the depth and strike extent of the mineralisation based on the drilling and geophysical data, as documented further on in this table. Based on the currently available information contained in the drilling data, surface mapping and the geophysical data, the assumption has been made that the hanging wall and foot wall disseminated mineralisation lenses that are in the same stratigraphic position relative to the massive magnetite are related and are grouped together as the same zones for estimation purposes. • The extents of the modelled mineralisation zones are constrained by the available drill and geophysical data, with strike extent limited by tenement boundaries. Alternative interpretations are not expected to have a significant influence on the global Mineral Resource estimate. • The continuity of the geology and mineralisation can be identified and traced between drill holes by visual, geophysical and geochemical characteristics. In parts of the modelled area, additional data is required to more accurately model the effect of any potential structural or other influences on the modelled mineralised units. Confidence in the grade and geological continuity is

Criteria	JORC Code explanation	Commentary
		reflected in the Mineral Resource classification.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The modelled mineralisation strikes approximately 125° to 305°, dipping on average about 55° towards 215°, with a modelled strike extent of approximately 1.6 km. • The stratiform massive magnetite unit has a true thickness varying between 5 m and 25 m. The interpreted disseminated mineralisation lenses appear to be better developed in the centre and northern half of the modelled area, with cumulative true thickness of the order of 25 m from up to four lenses, reducing to roughly 7 m from two lenses south of the deposit. The massive magnetite outcrops and has been mapped along the strike extent and has been extended to a maximum of approximately 200 m below topographic surface or nominally 70 m down dip of the deepest drill hole intersections. The strike extent is extended to the intersections with the tenement boundary based on the surface mapping and geophysical data extents. In the north this is roughly 30 m along strike and in the south roughly 125 m along strike from the relevant drilling sections. The southern most lens of the modelled massive magnetite mineralisation has been limited to roughly 160 m below topographic surface, due to increased geological uncertainty. The immediate hangingwall disseminated mineralisation zone above the massive magnetite is modelled to a nominal maximum of 175 m below topographic surface. The remaining hanging wall lenses are successively modelled to nominal maximums below topographic surface of 165 m and 155 m respectively, and the foot wall lens to 165 m. Given the continuity defined over the drilled extents (fence line spacings of mostly 100 m) and being additionally informed by the magnetics (TMI), these extrapolation extents are considered reasonable.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production*	• The Mineral Resource estimate was completed in Datamine Studio RM software using the ordinary kriging (OK) estimation method, with an inverse distance weighting to the power of two (IDW) estimation method also completed for validation purposes. Estimations were completed for

Criteria	JORC Code explanation	Commentary
	records and whether the Mineral Resource estimate takes appropriate account of such data. • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.*	V_2O_5, Fe and contaminant elements, TiO_2, Al_2O_3, SiO_2, P and S, and loss on ignition at 1000°C (LOI). Due to the mineralised zones being cut by and / or offset by faults the mineralisation interpretation consists of 11 massive magnetite and 28 disseminated / banded magnetite mineralisation lenses. These are grouped together using a numeric zone code as the massive magnetite lenses, or for the disseminated mineralisation lenses they grouped together based on stratigraphic position in the hangingwall or footwall relative to the massive magnetite. These lens groupings are then further split based on the weathering surface interpretations into oxide, transition and fresh materials. The preliminary statistical analysis completed on the massive magnetite and stratigraphically relative grouped disseminated magnetite domains showed that for the combined mineralisation / weathering state domain groupings there were not sufficient samples to complete a robust grade estimation. These weathering state domains were combined to provide sufficient data to inform a robust estimate. The oxide and transitional zones of the massive magnetite and hangingwall disseminated magnetite mineralisation zones were combined and, in the footwall disseminated magnetite domain, all weathering state zones are grouped together. This has resulted in 9 separate estimation domains being defined, with hard boundaries being used between the defined combined weathering and mineralisation estimation domains. A detailed statistical analysis was completed for each of the defined mineralisation / weathering state estimation domains. This analysis showed that for some grade variables occasional outlier grades existed and, in the CP's opinion, these required balancing cuts to prevent estimation bias associated with outlier values. For the massive magnetite top cuts were applied to SiO_2 in the combined weathered domain, and for SiO_2, LOI, P, and S in the fresh domain. For the disseminated magnetite domains, P and S required top cutting in various domains. Drill spacing is nominally 40 m to

Criteria	JORC Code explanation	Commentary
		5 0m on sections spaced 100 m or 200 m apart. Maximum extrapolation away from data points is up to 170 m downdip on two drill sections with two drill holes and between roughly 65 m and 120 m on remaining sections. Kriging neighbourhood analysis (KNA) was used in conjunction with the modelled variogram ranges and consideration of the drill coverage to inform the search parameters. Search ellipse extents are set to 250 m along strike, 125 m down dip and 15 m across dip, ensuring that the majority of the block estimates find sufficient data to be completed in the first search volume. The search volume was doubled for the second search pass and increased 20-fold for the third search pass to ensure all block were estimated. A maximum of 6 samples per hole, with a minimum of 15 and a maximum of 30 samples are allowed for a block estimate in the first search pass, reducing to a minimum of 12 samples and a maximum 24 samples for the second pass, and reducing to a minimum of 8 samples and a maximum 15 samples for the final pass. • The IDW check estimate results produced comparable results with a less than 1% difference in global V_2O_5 grade. • By-product recovery has not been considered for this deposit estimate. • Potentially deleterious P and S have been estimated • A volume block model with parent block sizes of 40 m (N) by 40 m (E) by 5 m (RL) was constructed using Datamine Studio Software. Minimum sub cells down to 2.5 m (N) by 2.5 m (E) by 2.5 m (RL) were allowed for domain volume resolution. Drill spacing is nominally 40 m to 50 m across strike on south west to north east orientated sections spaced either 100 m or 200 m apart along strike. • No assumptions have been made regarding selective mining units at this stage. • A strong positive correlation exists between Fe and V_2O_5 and TiO_2 and a strong negative correlation between those three grade variables and Al_2O_3, and SiO_2. • The separate interpreted mineralisation zones domained

Criteria	JORC Code explanation	Commentary
		based on the geological, geochemical and geophysical data, and further domained by weathering state have been separately estimated using hard boundaries between domains. The model is depleted by fault zones, and surficial colluvium zones that have been interpreted based on the geological, geochemical and geophysical data. • Block model validation has been completed by statistical comparison of drill sample grades with the OK and IDW check estimate results for each estimation zone. Visual validation of grade trends along the drill sections was completed and trend plots comparing drill sample grades and model grades for northings, eastings and elevation were completed. These checks show reasonable comparison between estimated block grades and drill sample grades, with differences in block model grade compared to the drill sample data for V_2O_5 primarily attributable to volume variance and estimation smoothing effects. • With no mining having taken place there is no reconciliation data available to test the model against.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages have been estimated on a dry, in situ, basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The adopted lower cut-off grade for reporting of 0.4% V_2O_5 is supported by the metallurgical results and conceptual pit optimisation study as being reasonable.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• It has been assumed that these deposits are amenable to open cut mining methods and are economic to exploit to the depths currently modelled using the cut-off grade applied. No assumptions regarding minimum mining widths and dilution have been made.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be*	• Metallurgical amenability has been assessed based on results from TMT's ongoing metallurgical testwork programs for Yarrabubba and batch kiln testwork undertaken on representative orebody blends. • The work conducted since the previous Yarrabubba

Criteria	JORC Code explanation	Commentary
	rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Mineral Resource estimate release (TMT: ASX announcement November 10th, 2021) has consisted of: • Preparation of the 'preliminary orebody blend', a composite consisting of the core mineralisation units. This sample was milled to P80 150 µm and P80 250 µm, magnetically separated and then dispatched for pyrometallurgical testing with FLSmidth. • This testing has yielded a maximum solubility of 97.1% from the Yarrabubba material with an average of 92.6% achieved under optimal temperature conditions. • A beneficiation Grind Liberation program with discrete mineralisation unit composites to identify the optimum grind point for Yarrabubba for ilmenite and vanadium recovery. This work has identified a P80 of 150 µm as the optimal point across mineralisation units. Samples of these concentrates will be tested by muffle furnace roast-leach to confirm vanadium recoverability at optimal conditions • Resampling of DTR composites, undertaking of the DTR targeting the optimal grind size of P80 150 µm for Yarrabubba.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• The company has undertaken preliminary waste rock disposal options assessments with a proposed landform and backfilling to be reviewed in the reserve assessment. The previous landform was assumed for the purposes of this Mineral Resource estimate such that disposal will not present a significant barrier to exploitation of the deposit, and that any disposal and potential environmental impacts will be correctly managed as required under the regulatory permitting conditions.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• The density measurements available for analysis included 98 samples by calliper method, and 267 samples by weight in air, weight in water method across a range of material types from the drill core. A total of 98 samples have been measured using both methods and show a very good correlation between the two measurement methods with a mean density of 3.35 t/m³ for calliper method versus 3.38 t/m³ for the weight in air

Criteria	JORC Code explanation	Commentary

		weight in water method.
		• The density measurement result data has been separated by weathering state into oxide, transition and fresh, and further by mineralisation type into waste, disseminated mineralisation and massive mineralisation. Some of the combined weathering / mineralisation type domains did not have sufficient data, so the domain results were compared with results from measurements from the North Tenements block measurements to determine suitability to use these data where insufficient data is available in the South. Fresh massive magnetite has a mean density of 4.40 t/m³ measured in the South compared to 4.36 t/m³ in the North, while fresh disseminated the same mean of 3.80 t/m³ in both areas. The mean density for the various mineralisation domains has been applied in the block model as follows:
		  • Massive magnetite mineralisation mean density in t/m³: Oxide: 3.83; Transition: 4.0; Fresh: 4.40.
		  • Disseminated magnetite mineralisation mean density in t/m³: Hanging wall 1: Oxide: 3.3; Transition: 3.9; Fresh: 4.2.
		  Hanging wall 2: Oxide: 3.25; Transition: 3.39; Fresh: 3.58.
		  Remaining disseminated units: Oxide: 3.06, Transition: 3.36; Fresh 3.38.
		• Waste rock in t/m³: Cover: 1.92; Oxide: 2.52; Transition: 2.96; Fresh: 3.07.

Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Classification of the Mineral Resource was carried out taking into account the level of geological understanding of the deposit, quantity, quality and reliability of sampling data, assumptions of continuity and drill hole spacing. • The Mineral Resource estimate has been classified in accordance with the JORC Code, 2012 Edition using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1, Section 2 and Section 3 of this Table. • The Mineral Resource is classified as an Indicated Mineral

Criteria	JORC Code explanation	Commentary
		Resource for those volumes where in the Competent Person's opinion there is adequately detailed and reliable, geological and sampling evidence, which are sufficient to assume geological and mineralisation continuity. • Indicated Mineral Resources are reported for portions of the fresh materials in the massive magnetite and the immediate hangingwall disseminated magnetite unit. The confidence in grade and geological continuity is considered to be good for these zones, based on the along strike and sectional continuity observed in the chemical analysis and drill hole logging data, from the nominal drill section spacing of 100 m, with nominal 50 m on section hole spacing, the geophysical (TMI) modelling continuity and correlation with drill data and the surface mapping. • The Mineral Resource is classified as an Inferred Mineral Resource where the model volumes are, in the Competent Person's opinion, considered to have more limited geological and sampling evidence, which are sufficient to imply but not verify geological and mineralisation continuity. • Inferred Mineral Resources are reported for all massive and transitional magnetite oxide material, the volumes of the massive magnetite and the immediate hangingwall disseminated unit not classified as Indicated. This is generally for the extrapolated zones of these units down dip and along strike, or where there appears to be greater structural complexity, and in the areas where possible structural influences on the geological and grade continuity are not well understood at this stage. For all remaining hanging wall disseminated mineralisation lenses and the foot wall unit there is a generally lower confidence in the geological and grade continuity due to along strike and down dip variability seen from the drill analysis result data and hence these zones are also classified as Inferred pending further information being collected. • The Mineral Resource estimate appropriately reflects the view of the Competent Person.

Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Internal audits and peer review were completed by CSA Global which verified and considered the technical inputs, methodology, parameters and results of the estimate. No external audits have been undertaken.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available*	• The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. • The Mineral Resource statement relates to global estimates of in situ tonnes and grade. • No mining has taken place at this deposit to allow reconciliation with production data.