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Australian VANADIUM LIMITED

ASX:AVL

Diggers & Dealers Mining Forum

August 2023

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Compliance & Cautionary Forward-looking Statements

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ASX Listing Rules 5.19 and 5.23

ASX Listing Rule 5.19

The information in this Presentation relating to production targets, or forecast financial information derived from a production target, is extracted from the announcement titled "Bankable Feasibility Study for the Australian Vanadium Project" released to the ASX on 6 April 2022 which is available on the Company's website www.australianvanadium.com.au.

The Company confirms that all material assumptions underpinning the production target, or the forecast financial information derived from a production target, in the original market announcement continue to apply and have not materially changed.

ASX Listing Rule 5.23

The information in this Presentation relating to exploration results and mineral resource and ore reserve estimates for the Australian Vanadium Project is extracted from the announcement titled "Bankable Feasibility Study for the Australian Vanadium Project" released to the ASX on 6 April 2022 which is available on the Company's website www.australianvanadium.com.au.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement, and that all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the competent person's findings are presented have not been materially modified from the original market announcement.

Forward Looking Statements

This Presentation may contain certain forward-looking statements with respect to matters including but not limited to the financial condition, results of operations and business of AVL and certain of the plans and objectives of AVL with respect to these items. These forward-looking statements are not historical facts but rather are based on AVL's current expectations, estimates and projections about the industry in which AVL operates and its beliefs and assumptions.

Words such as "anticipates," "considers," "expects," "intends," "plans," "believes," "seeks," "estimates", "guidance" and similar expressions are intended to identify forward looking statements and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the industry in which AVL operates.

These statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties, and other factors, some of which are beyond the control of AVL, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward-looking statements. Such risks include, but are not limited to resource risk, metal price volatility, currency fluctuations, increased production costs and variances in ore grade or recovery rates from those assumed in mining plans, as well as political and operational risks in the countries and states in which we sell our product to, and government regulation and judicial outcomes. For more detailed discussion of such risks and other factors, see the Company's Annual Reports, as well as the Company's other filings.

AVL cautions shareholders and prospective shareholders not to place undue reliance on these forward-looking statements, which relate only to events as of the date on which the statements are made.

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Australian Vanadium Limited

- The Australian Vanadium Project is one of the most advanced undeveloped vanadium projects globally
- Project located in Western Australia, with access to key infrastructure including gas, rail and port
- BFS completed highlighting strong project metrics including cash cost sub US$5/lb V_2O_5 and 25+ year mine life
- Simple open pit mining, with proven processing method for reduced development and technical risk
- Project to deliver diversified source of vanadium supply to a market currently dominated by Russia, China and South Africa
- Vanadium demand supported by global steel growth, with upside from fully commercialised battery technology ideal for the rapid growth long duration stationary energy storage market
- A$27.2M in cash at 30 June 2023 (with first $9.8M instalment of $49M Government Grant received)

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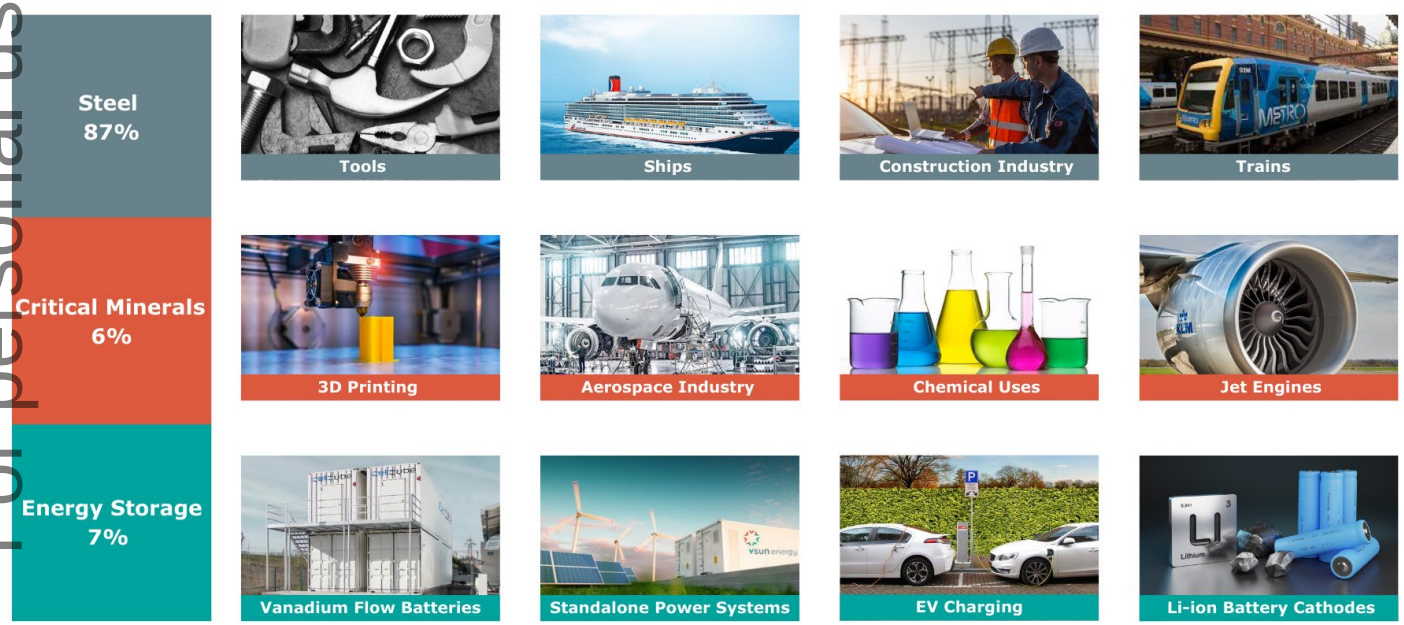
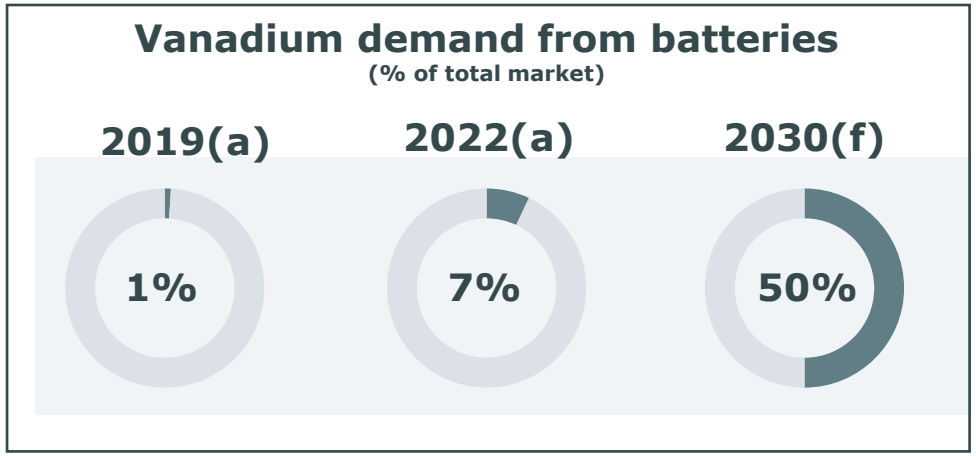
Vanadium Demand

Vanadium market demand is currently dominated by use in the steel industry, although its exposure to the energy transition through vanadium flow batteries (VFBs) could provide a sizeable diversification from steel.





(a) actual (f) forecast

Source – US based vanadium market specialist: TTP Squared, Inc

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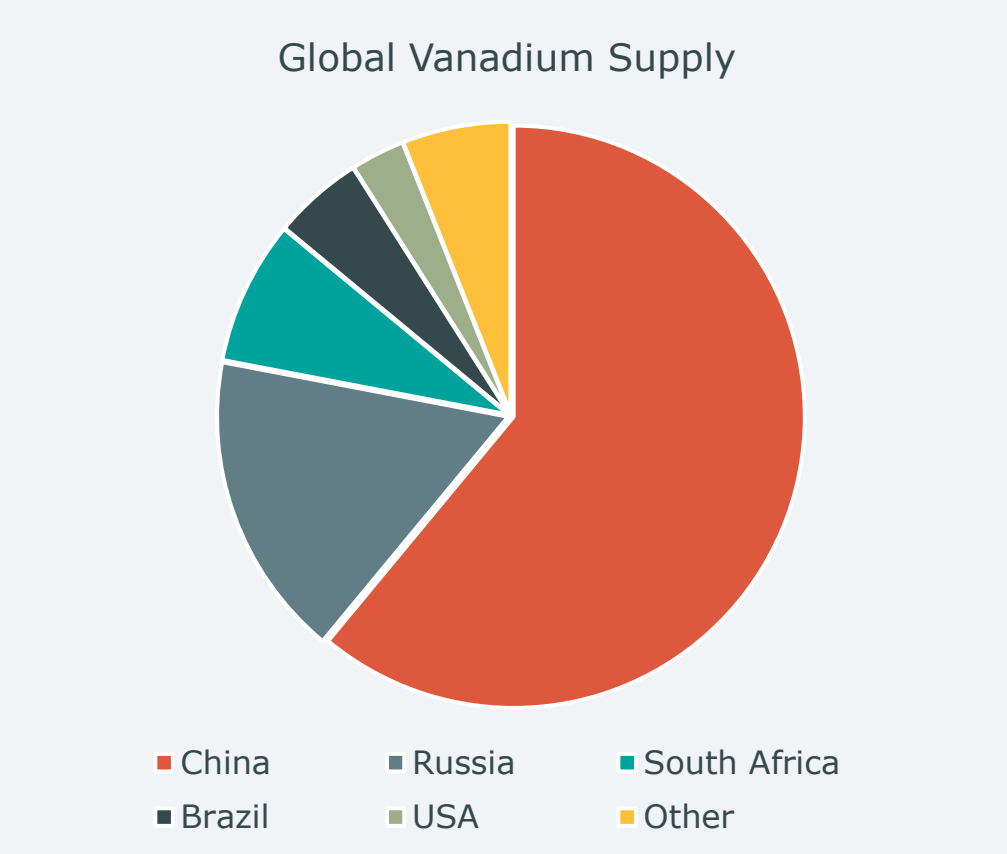
Vanadium Supply

- Global vanadium market of 118,000 MTV* in 2022
- AVL's planned production represents ~5% of current global supply
- Over 75% of global vanadium supply currently sourced from China, Russia and South Africa
- Onshoring thematic is increasing demand for diverse supply chains of vanadium for critical mineral and battery metal uses
- Steep cost curve driven by multiple supply production routes
- Long-term average price for commodity grade V_2O_5 is US$9/lb (inflated to 2020 USD)
- AVL forecast cost of production of sub US$5/lb



Source – US based vanadium market specialist: TTP Squared, Inc

* MTV is Metric Tonne Unit of Vanadium

Australian Vanadium Project - a Premier Location

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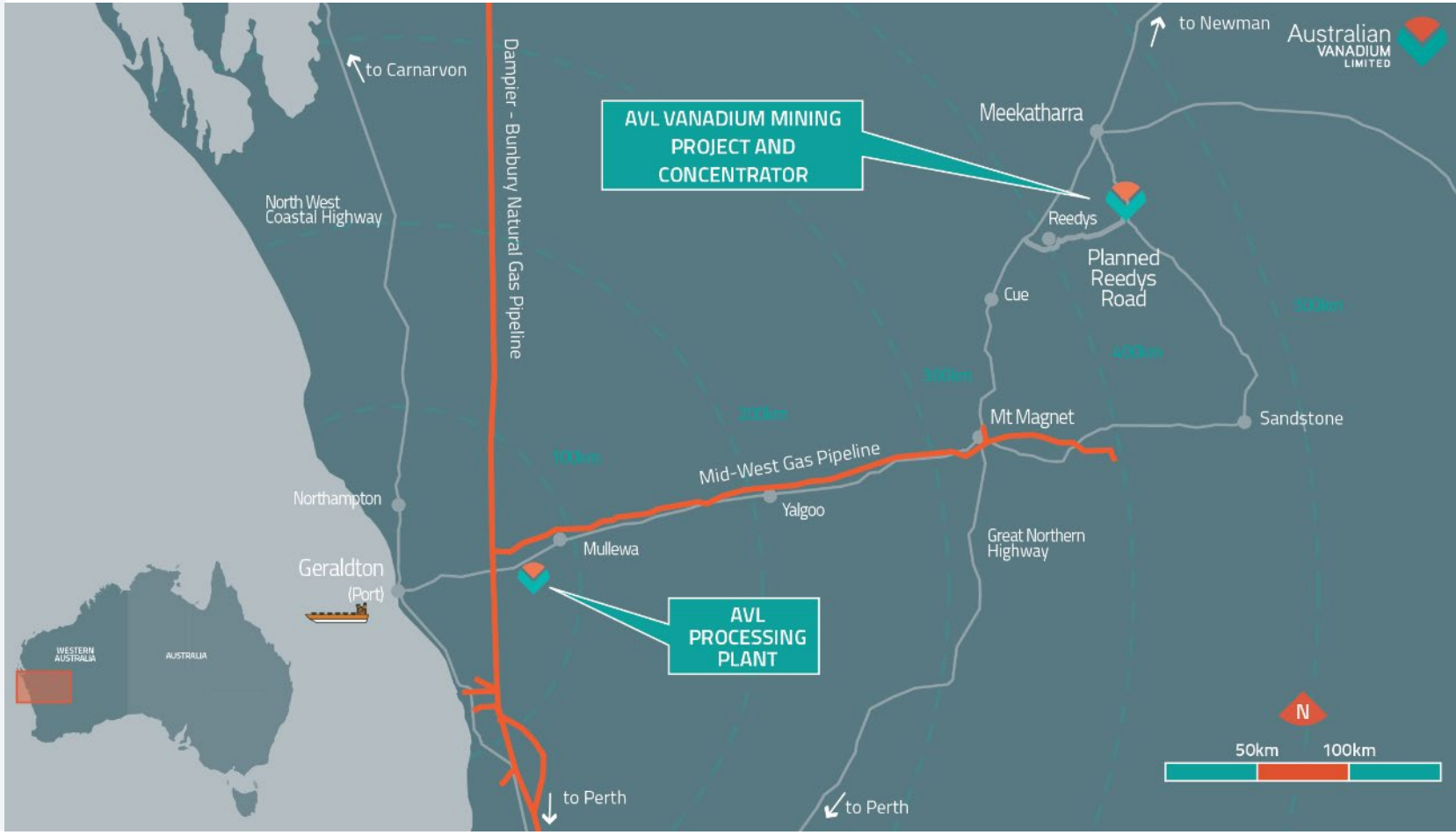
Project Overview

- Access to scalable power, water and infrastructure
- Simple open pit mining
- Concentrate transported to coastal location for processing

Strategic separation of Mine and Plant

- Location near coast lowers project capex and provides access to lower cost energy, labour and services
- Plant layout and location provide optionality for expansion to drive scalability



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Processing Hub Optionality

Western Australia's Mid West Region is an emerging vanadium jurisdiction

AVL's processing plant has been strategically situated to enable optionality for future processing of regional VTM concentrates

AVL-Neometals a leading example of critical metals collaboration in Mid West

Australian Vanadium Project Economics

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Pre-production Capex US$435M	C1 OPEX US$4.43/lb V_2O_5	EBITDA Annual Average A$175M
25+ years Mine Life	15 month Construction Timeframe	Annual V Production 11,200t V_2O_5

Note: Information within this slide as detailed in ASX Announcement "Bankable Feasibility Study for Australian Vanadium Project" dated 6th April 2022. All material assumptions underpinning the production target and forecast financial information derived from a production target continue to apply and have not materially changed

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Robust Mine Plan, Low Capital Intensity & Unit Costs[1]

Capital Cost

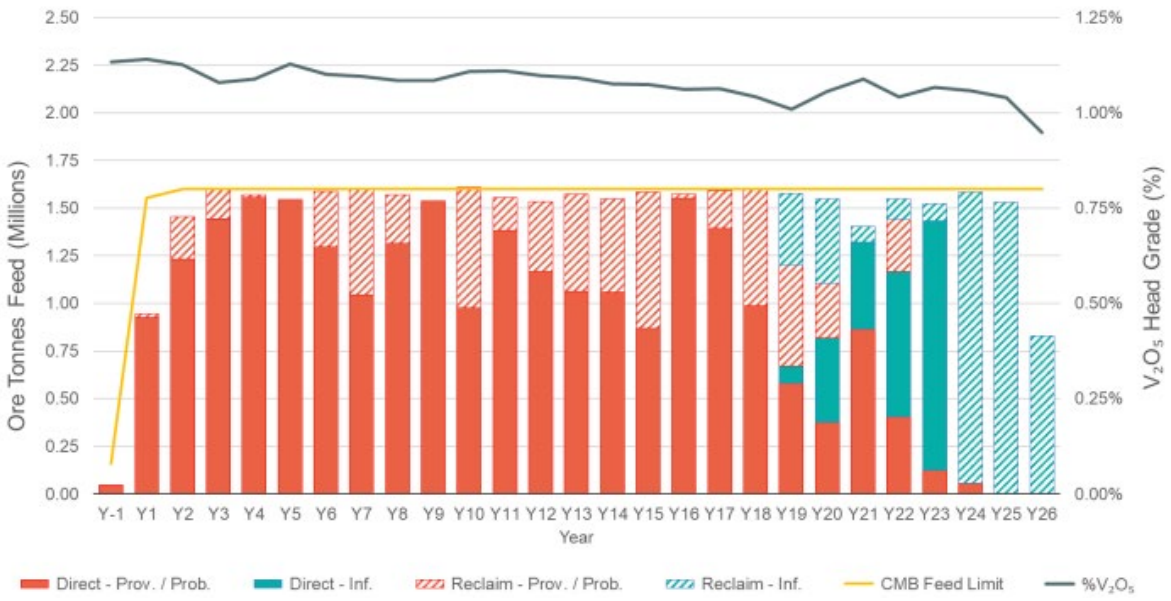
- US$435M capex to first production (ex-contingency)
- US$92M in post production capex over first 4 years of operation
- Proximity to key infrastructure and separation of processing plant from mine reduce total capex

Robust Mine Plan

- 1.6Mtpa annual concentrator ore feed, designed for consistent blend
- LoM yield of 900kt of concentrate sent to processing plant at 1.39% V_2O_5 LoM average grade

Unit Costs

- Competitive C1 cash cost of US$4.43/lb
- Steep cost curve driven by multiple supply production routes
- Long-term average price for commodity grade V_2O_5 is US$9/lb (inflated to 2020 USD)



[1] ASX Announcement "Bankable Feasibility Study for Australian Vanadium Project" dated 6 April 2022

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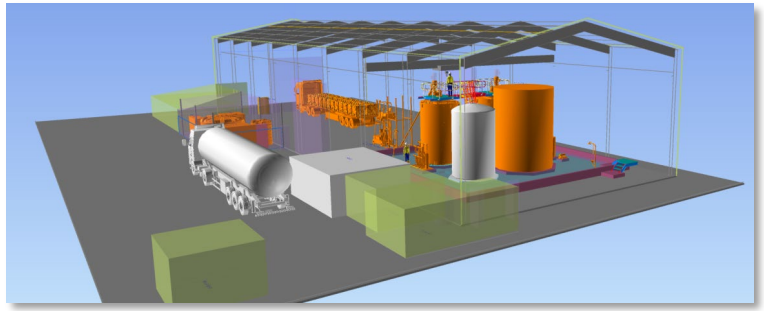
Australian Vanadium Project: Vanadium Electrolyte

Project Update

- 33MWh per annum electrolyte plant under development (Federal Grant)
- AVL to be an early mover in electrolyte manufacture in Australia
- Located in Perth, Western Australia
- Detailed design complete, long lead equipment received, targeting first production in 2023
- Utilises proven US Vanadium technology

US VANADIUM



Above: Design for AVL vanadium electrolyte plant

Left: US Vanadium LLC vanadium electrolyte plant in Arkansas, USA

Below: Delivery of equipment to AVL's vanadium electrolyte plant in Perth, WA

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VSUN Energy: Current Projects Overview

VSUN Energy is a 100% owned subsidiary AVL

Current Projects

- Horizon Power 78kW/220kWh pilot project in Kununurra, WA
- IGO - supply and installation of an 80kW/300kWh VFB at Nova Nickel
- Water Corporation – successful completion of trial of a 5kW/30kWh VFB
- Victoria – supply and installation of a 20kW/80kWh VFB
- Consultancy work for major mining clients underway
- Tender applications up to 50MWh
- Well positioned with significant future opportunities and client pipeline
- Design of residential VFB well progressed (Federal Grant)
- Strong relationships with key VFB OEMs

"Vanadium redox flow batteries are specifically designed to deliver energy over a long period of time, which is crucial for achieving the high levels of decarbonisation we are after. If the pilot is successful, there is potential to expand the use of long-duration, 100 per cent renewable energy across Horizon Power's 2.3 million square-kilometre network."

Minister for Mines and Energy, Bill Johnston

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Progressing the AVL Project to production

Delivered

- ☑ BFS completed
- ☑ Mining lease approval
- ☑ Completion of large-scale process plant pilot program
- ☑ Board and management team evolution to project execution skillset
- ☑ $49M Australian Government grant executed
- ☑ 1.2Gl pa water licence for processing plant granted

Catalysts

Project Development

- ☐ Completion of ECI & appointment of contractor for mine infrastructure
- ☐ Purchase of long lead items
- ☐ Appointment of mining contractor
- ☐ Process ECI and FEED completion
- ☐ Supply of gas, power, haulage and port

Approvals

- ☐ Finalise approvals including EPA and Native Title

Offtake

- ☐ Secure bankable vanadium offtake including option for project finance
- ☐ Secure FeTi coproduct offtake agreements

Finance

- ☐ Appoint Bank MLA Group for Project Finance
- ☐ Lenders' Independent Technical Expert due diligence assessment underway
- ☐ Progress discussions with Government debt and Export Finance agencies
- ☐ Additional grant milestone payments

Target commencement of construction during 2024 and production in 2025

Investment Thesis
Aim be the World's 4th Primary Vanadium Producer with a lowest quartile operating cost, long life, scalable asset

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Australian Vanadium Project

- Advanced project, low cost, 25+ year mine life with strong operating parameters
- Process based on known technology, lowering development risk
- Access to all key infrastructure

Growing vanadium fundamentals

- Steel demand enough to underpin project offtake
- Increasing demand for vanadium from new sectors and regions
- VFB demand to provide medium term decoupling of vanadium from steel dynamics

Advancing funding strategies

- $49M Federal Grant
- Potential lenders consortium progressing due diligence
- Project to be funded by debt, grants and equity
- Advanced state of executing offtake strategies

Long–term optionality

- Regional scalability: port, rail, gas
- VSUN Energy technology subsidiary positioned to leverage VFB market growth
- Electrolyte processing and vertical integration
- Lithium-ion: V use

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Appendices

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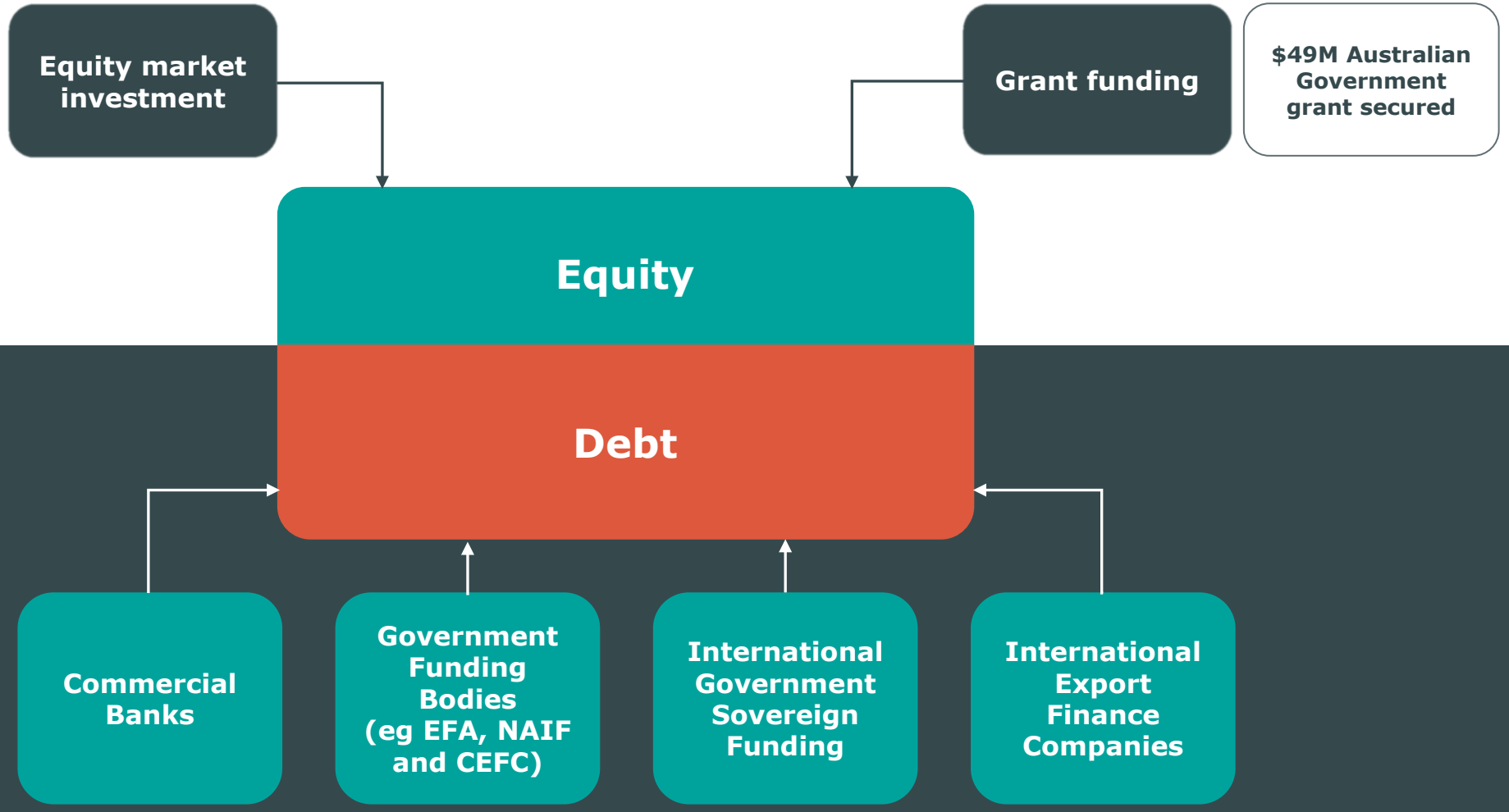
Funding model



Vanadium Market:
Steel growth underpins pricing dynamics
Potential upside from energy storage thematic

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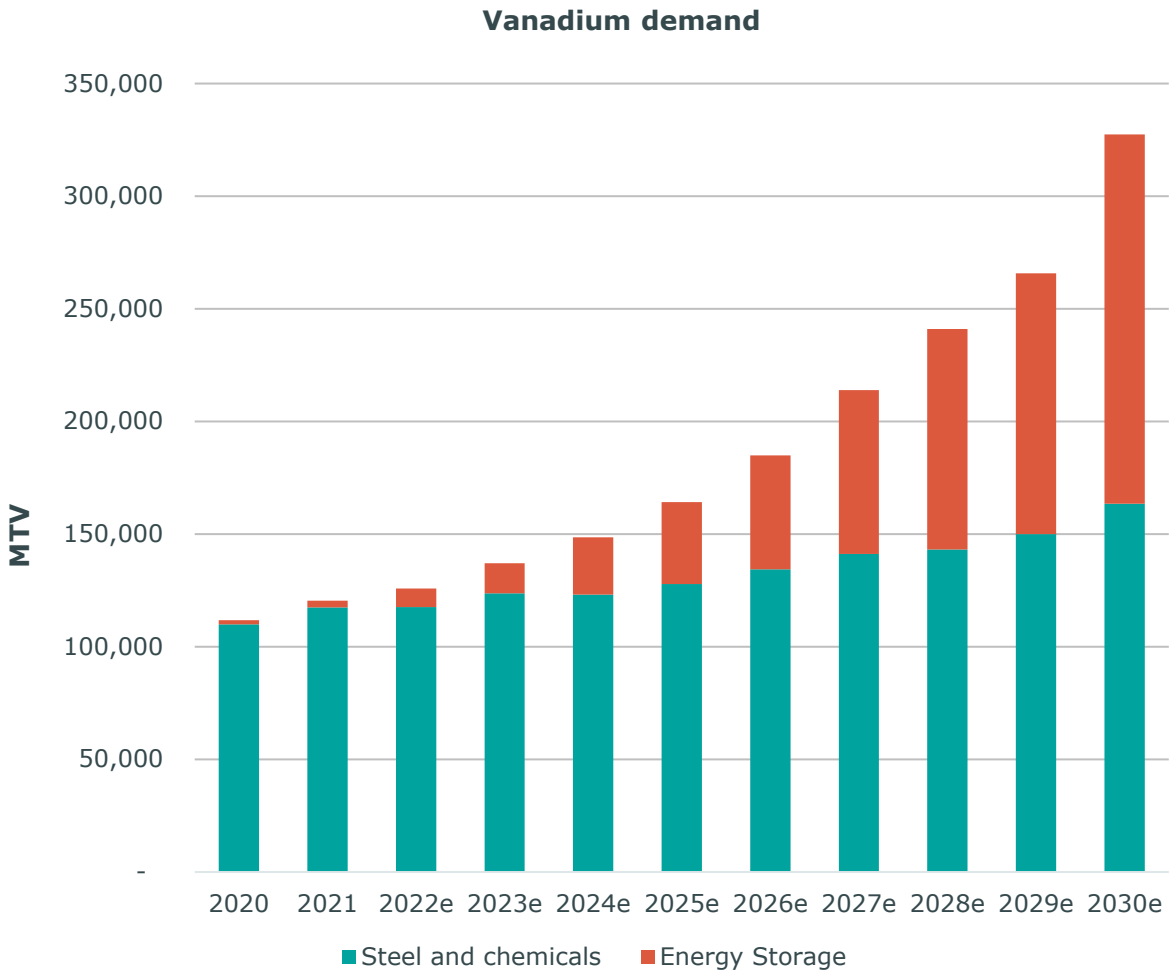
- Vanadium is used to strengthen steel and has had a historic correlation to global steel demand
- Vanadium delivers longer life, stronger and lower weight steel reducing the amount of steel required for an application
- Vanadium alloy steels are a cost effective and proven way to materially reduce $C0_2$ emissions from the steel industry (currently account for 8% of global carbon emissions)
- Forecast 2.2% CAGR from steel through to 2030 (Wood Mackenzie)
- Vanadium demand from steel industry growth adequate to support AVL scale project (6,300MTV/year), with energy storage demand growth as upside



Source – US based vanadium market specialist: TTP Squared, Inc

Vanadium Flow Batteries (VFB)

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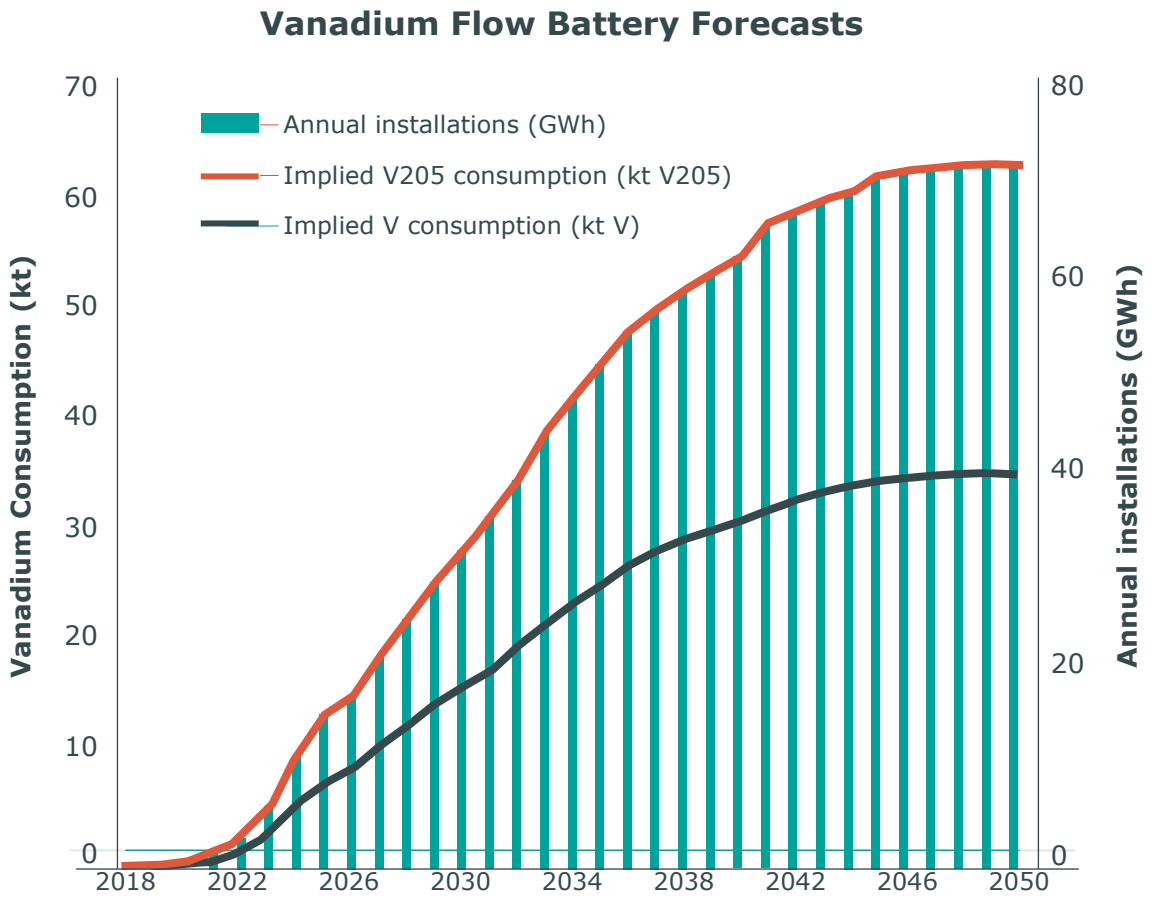
- Vanadium flow batteries (VFBs) are a mature and proven technology ideally positioned to meet demand for large, long duration stationary storage
- Demand for large, long duration energy storage likely to drive diversity in energy storage technologies
- VFB market growth could disconnect V demand from long term steel correlation
- By 2030, global forecast of 1,000GWh+ additional energy storage (BloombergNEF, Wood Mackenzie)
- By 2030, Australia is forecasted to require 63GWh additional energy storage, an annual growth rate of 7GWh (AEMO Step Change scenario)



Source: Wood Mackenzie

Vanadium Supply

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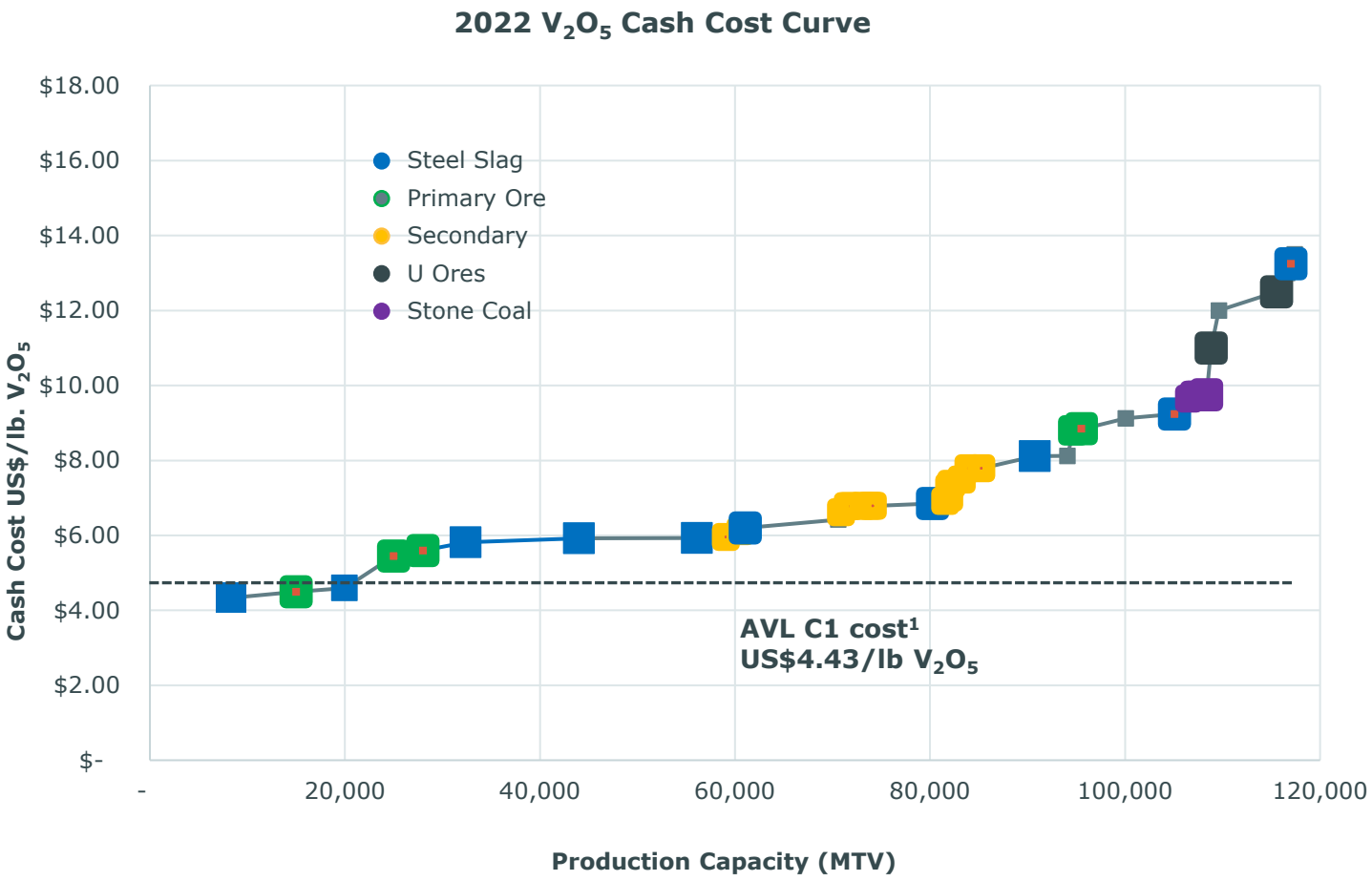
- Global vanadium market of 118,000 MTV* in 2022
- Steep cost curve driven by multiple supply production routes
- Long-term average price for commodity grade V_2O_5 is US$9/lb (inflated to 2022 USD) [2]



* MTV = metric tonnes vanadium

[1] ASX Announcement "Bankable Feasibility Study for Australian Vanadium Project" dated 6 April 2022

[2] TTP Squared, Inc

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Vanadium Markets: Critical Metal Demand

- US, EU, Canada, Australia, Japan, Brazil, South Africa, and the UK have all classified vanadium as a critical metal essential to their economies (Source: Vanitec)
- Vanadium is used extensively in aerospace, defence and specialty chemical industries
- Demand from aerospace industry for high purity vanadium driving a focus on supply chain security
- Historically, non-ferrous demand for vanadium has been c. 10% of global demand

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VFB Technical Merit

Long duration, competitive techno-economics >4h

Easy to scale power and energy separately

Lifespan over 25 years with little to **no degradation in performance** over time

Non-flammable making it one of the safest and most stable battery chemistries

Multiple daily cycles, with **100% depth of discharge** available

Vanadium electrolyte can be **reused indefinitely** or recycled for use in steel market or VFB's

Low Operating Costs

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Competitive C1 cash cost of US$4.43/lb

Coproduct credit of $2.40/lb

Cash cost of production supports project economics against backdrop of long term average V_2O_5 price of US$9/lb

Operating Costs[1] (US$/lb V_20_5)	Life of Mine
Mining costs	1.42
CMB processing costs	0.93
Processing plant	2.02
Haulage & other	2.46
Total C1 costs (before credits)	6.83
By products	-2.40
Total C1 cost (after credits)	4.43
Depreciation	1.00
Total C2 cost	5.43
Sustaining capex	0.21
Royalties and other costs	0.47
Total C3 cost	6.11

[1] ASX Announcement "Bankable Feasibility Study for Australian Vanadium Project" dated 6 April 2022

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Board

Cliff Lawrenson
Non-Executive Director

Experienced Chair and extensive executive career in resources, energy, infrastructure and investment banking

Daniel Harris
Non-Executive Director

Over 40 years of global vanadium experience, including processing and operation

Miriam Stanborough
Non-Executive Director

Over 20 years of experience in the mineral processing industry across a range of commodities

Peter Watson
Non-Executive Director

Chemical engineer, with 40 years of experience in senior technical, project and management roles, in addition to corporate experience running ASX-listed companies

Anna Sudlow
Non-Executive Director

Corporate finance executive with experience in the mining and resources sectors across a range of commodities and jurisdictions

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Executive Team

International vanadium expertise – track record in project execution and operations

Graham Arvidson
Chief Executive Officer

18 years of experience in the mineral sector experience spans vanadium and lithium project development and operations

Todd Richardson
Chief Operating Officer

Over 20 years of experience in the vanadium sector and an expert in vanadium process design, commissioning and operations

Louis Mostert
Chief Legal and Commercial Officer

20 years of experience in project contracting and finance, corporate advisory, mergers and acquisitions

Tom Plant
Chief Financial Officer

30 years of experience in various corporate and commercial roles. Strong background in debt and equity funding solutions, investment evaluation and corporate transactions

Ross Jennings
Chief Safety and People Officer

Over 18 years of experience in the mining industry and has worked in leadership roles across operations, health, safety and emergency response

Flormirza Cabalteja
Executive General Manager Project Delivery – Downstream

16 years of experience in the operations and design/commissioning in the minerals sector for nickel, cobalt, vanadium and ammonium phosphate-based fertilizers

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Geology & Mining: Resource Table

Domains	Category	Mt	V_2O_5 %	Fe %	TiO_2 %	SiO_2 %	Al_2O_3 %	LOI %
HG 10	Measured	11.3	1.14	43.8	13.0	9.2	7.5	3.7
	Indicated	27.5	1.10	45.4	12.5	8.5	6.5	2.9
	Inferred	56.8	1.04	44.6	11.9	9.4	6.9	3.3
	Subtotal	**95.6**	**1.07**	**44.7**	**12.2**	**9.1**	**6.8**	**3.2**
LG 2-5	Measured	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Indicated	**54.9**	**0.50**	**24.9**	**6.8**	**27.6**	**17.1**	**7.9**
	Inferred	**73.6**	**0.48**	**25.0**	**6.4**	**28.7**	**15.4**	**6.6**
	Subtotal	128.5	0.49	24.9	6.6	28.2	16.1	7.2
Trans 6-8	Measured	-	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-	-
	Inferred	14.9	0.66	29.0	7.8	24.5	15.1	7.8
	Subtotal	14.9	0.66	29.0	7.8	24.5	15.1	7.8
Total	Measured	11.3	1.14	43.8	13.0	9.2	7.5	3.7
	Indicated	82.4	0.70	31.7	8.7	21.2	13.5	6.2
	Inferred	145.3	0.71	33.0	8.7	20.7	12.0	5.4
	Subtotal	239.0	0.73	33.1	8.9	20.4	12.3	5.6

Note: Mineral Resource estimate by domain and resource classification using a nominal 0.4% V_2O_5 wireframed cut-off for low grade and nominal 0.7% V_2O_5 wireframed cut-off for high grade (total numbers may not add up due to rounding)

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Geology & Mining: Ore Reserve Table1

The updated Ore Reserve for the Australian Vanadium Project 2022 Bankable Feasibility Study is detailed in the table below

Ore Reserve	Mt	V_2O_5%	Fe_2O_3%	TiO_2%	SiO_2%	LOI%	V_2O_5 production kt	Ore Reserve	Mt
Proved	10.5	1.11	61.6	12.8	9.5	3.7	70.9	Waste	238.5
Probable	20.4	1.07	63.4	12.2	9.2	3.0	152.9	Total Material	269.4
Total Ore	**30.9**	**1.09**	**62.8**	**12.4**	**9.3**	**3.2**	**223.8**	Strip Ratio	7.7

The Ore Reserves and Inferred Resources utilised for the life of mine (LOM) schedule for the Australian Vanadium Project 2022 Bankable Feasibility Study, inclusive of the Ore Reserve above, is detailed in the table below.

Ore Reserve	Mt	V_2O_5%	Fe_2O_3%	TiO_2%	SiO_2%	LOI%	V_2O_5 production kt	Ore Reserve	Mt
Proved	10.5	1.11	61.6	12.8	9.5	3.7	70.9	Waste	296.5
Probable	20.4	1.07	63.4	12.2	9.2	3.0	152.9	Total Material	335.7
Inferred Resources	8.2	1.04	63.4	12.0	9.2	3.1	57.6	Strip Ratio	7.6
Total Ore	**39.2**	**1.08**	**62.9**	**12.3**	**9.3**	**3.2**	**281.4**		

The Ore Reserve for the Australian Vanadium Project 2022 Bankable Feasibility Study was developed by Orelogy Consulting Pty Ltd. The economic evaluation of the Project in this presentation is underpinned by Reserves and Inferred Resources comprising:

- The Ore Reserve including both Proved and Probable classified material
- Additional Inferred Mineral Resources comprising approximately 20.5% of the proposed process plant feed material

1. Note: Tonnage and contained metal have been rounded to reflect the accuracy of the estimate, and numbers might not add due to rounding