

Australian
VANADIUM
LIMITED



MRIWA NET ZERO MINING CONFERENCE 2022

September 2022

ASX:AVL

ASX CHAPTER 5 COMPLIANCE AND CAUTIONARY AND FORWARD-LOOKING STATEMENTS

The views expressed in this Presentation contain information derived from publicly available sources that have not been independently verified. No representation or warranty is made as to the accuracy, completeness or reliability of the information.

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 (other than the information on slide 36) 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.



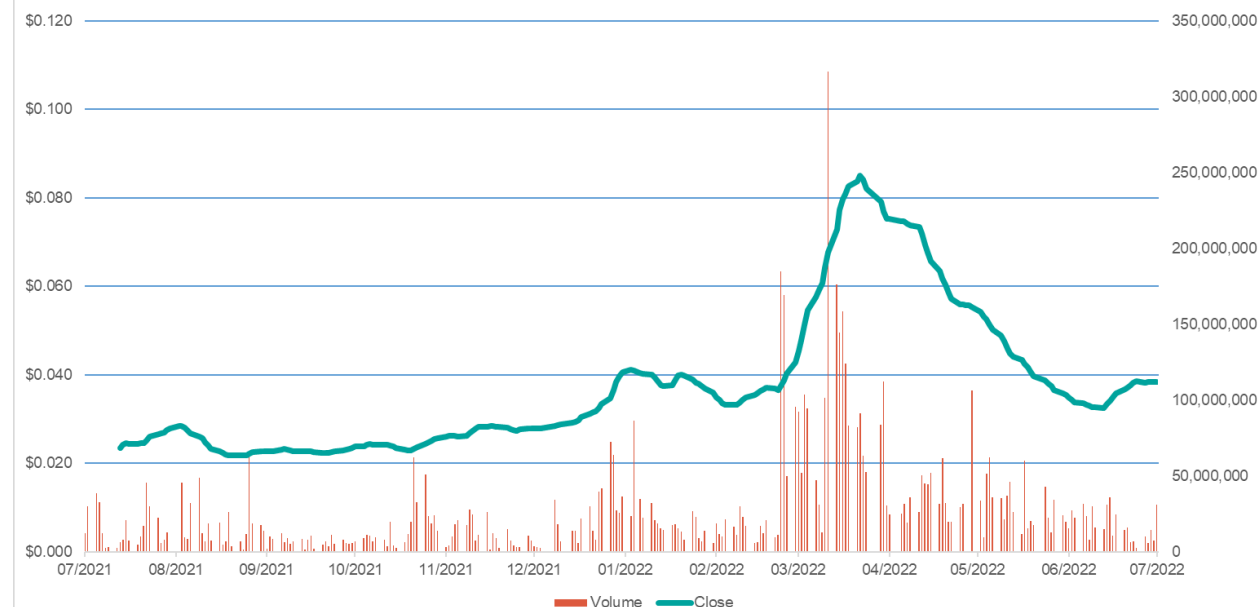
CORPORATE OVERVIEW

Australian Vanadium

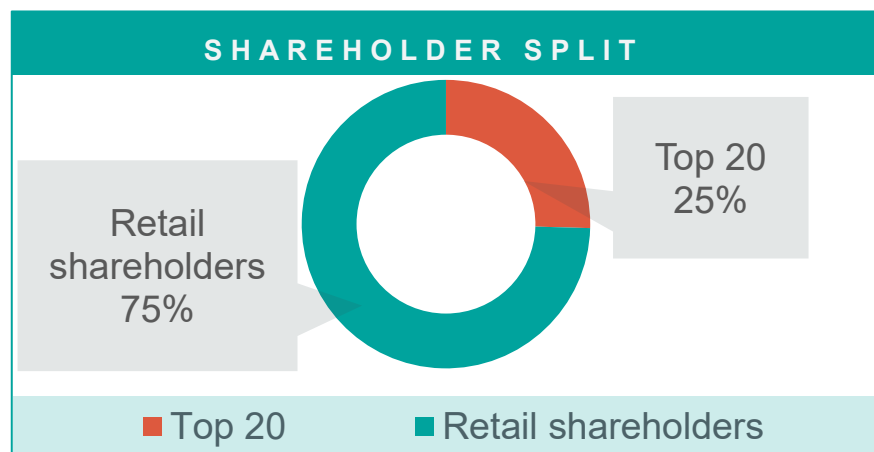
KEY STATISTICS AS AT 22/07/22

Ordinary Shares on Issue	3.94b
Share Price	A\$0.041
Options on Issue Exp 18/12/22 @ \$0.025	355,385,353
Option Price (AVLOA)	A\$0.017
Average Daily Traded Volume	27.3M (~\$1.39M)
Market Cap (Undiluted)	A\$161.5M
Shareholders	15,703
Cash at the end of last quarter	\$26.5M

AVL SHARE PRICE HISTORY (22/7/2022)



SHAREHOLDER SPLIT



TOP 5 SHAREHOLDERS

		%
1	Citicorp Nominees Pty Ltd	6.92%
2	BNP Paribas Nominees Pty Ltd ACF Clearstream	3.91%
3	Mr & Mrs Hoeksema	2.18%
4	Kalemois Pty Ltd	1.90%
5	HSBC Custody Nominees (Australia) Ltd	1.85%



Vanadium Markets

PRIMARY

STEEL



92%

of current global
vanadium consumption



Construction
Industry



Ships



Tools



Trains

CHEMICAL, AEROSPACE & OTHER



6%

of current global
vanadium consumption



Jet Engines



Chemical uses



Aerospace
Industry



3D Printing

EMERGING & FUTURE

RENEWABLE ENERGY STORAGE & AUTOMOTIVE



2%

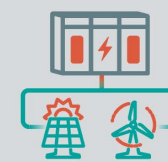
of current global
vanadium consumption



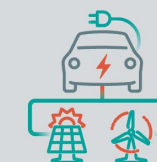
Vanadium Redox
Flow Batteries



Automotive
Industry



Standalone
Power Station



EV Charging



**Unique FeTi Co
Product sales
opportunity**

**Infrastructure – port,
water, gas, rail, road,
power, airport**

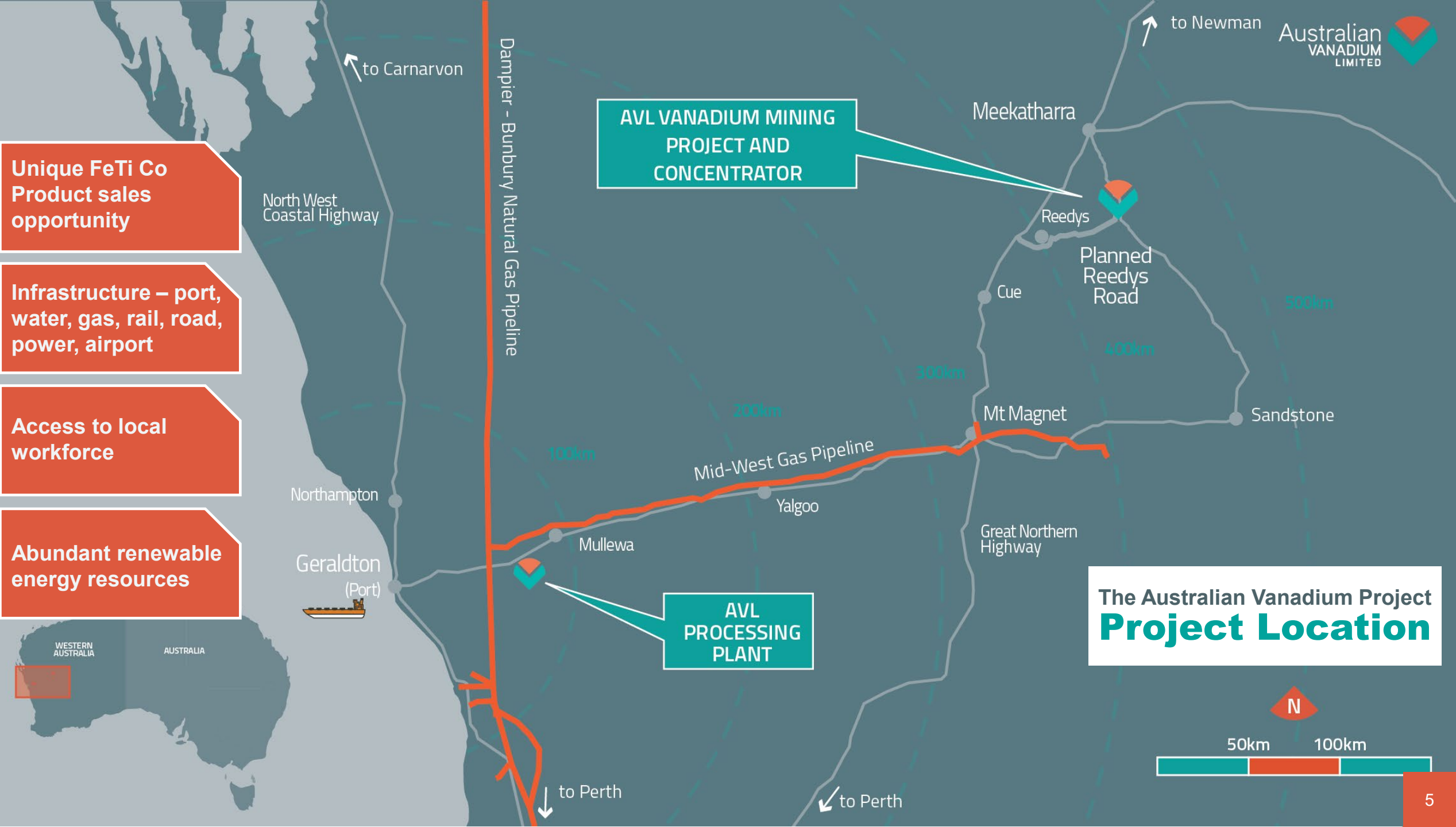
**Access to local
workforce**

**Abundant renewable
energy resources**

**AVL VANADIUM MINING
PROJECT AND
CONCENTRATOR**

**AVL
PROCESSING
PLANT**

**The Australian Vanadium Project
Project Location**



AUSTRALIAN VANADIUM LIMITED

Executive Summary



Highest Grade

The Australian Vanadium Project is located near Meekatharra, Western Australia and is among the highest-grade vanadium projects in the world.



Attractive Economics

Recently announced Bankable Feasibility Study. 25+ year mine life. Cash available to fund ongoing vanadium project work and developing key downstream markets ahead of finalising debt financing.



Front End Engineering and Contractor

CMB EPC and Processing Plant EPCM evaluation and engagement underway



Critical Mineral Project

AVL has recently been awarded a A\$49 million grant under the Australian Government's Modern Manufacturing Initiative Collaboration Stream towards the development of the Australian Vanadium Project.



Focus on Export Finance and Offtake engagement

Targeting FID in Q4 2022.



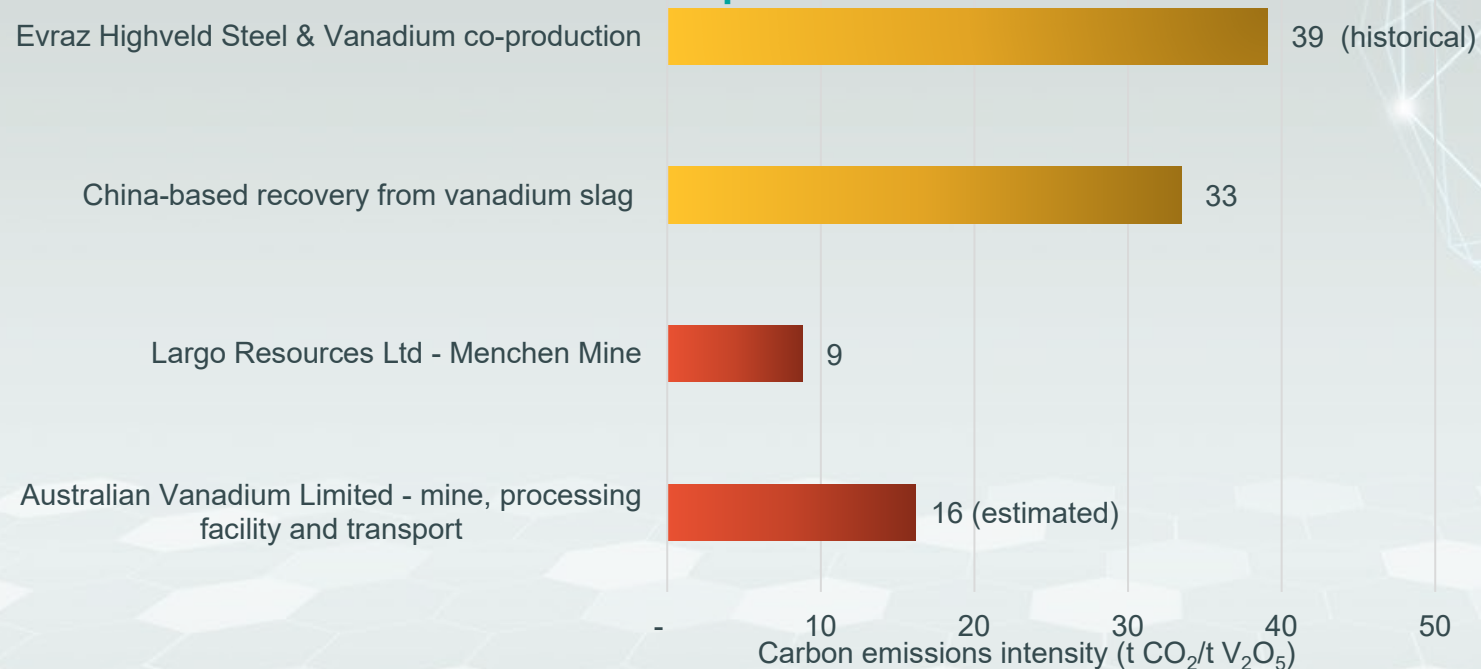
Downstream Options

AVL is also focused on developing key downstream markets - 100% owned subsidiary VSUN Energy promotes vanadium redox flow batteries (VRFBs) for renewable energy storage, a vanadium supply growth market.

ESG IN ACTION

Strong ESG Focus

Carbon emissions intensity of global vanadium production operations



The vanadium produced by the AVL Project is estimated to result in a **net reduction** in GHG emissions of approximately 1,250 t CO₂/t V₂O₅ or **14 million t CO₂-e per annum**, considering direct and indirect GHG emissions. (if used in 400MPa HSLA steel and VRFBs)^{2,4}

The pathway to net zero for the minesite and processing plant has been mapped to 2050

1. Largo Resources. (2019). 2019 Sustainability Report.

2. Kumar, Santos, Braham, Sellers, Banerjee and Dixit, Texas A&M (2021). Punching above its weight: life cycle energy accounting and environmental assessment of vanadium microalloying in reinforcement bar steel

3. Weber, Peters, Baumann and Weil (2018). Life Cycle Assessment of a Vanadium Redox Flow Battery

4. Umwelt (2021) Greenhouse Gas Management Plan for the Australian Vanadium Project

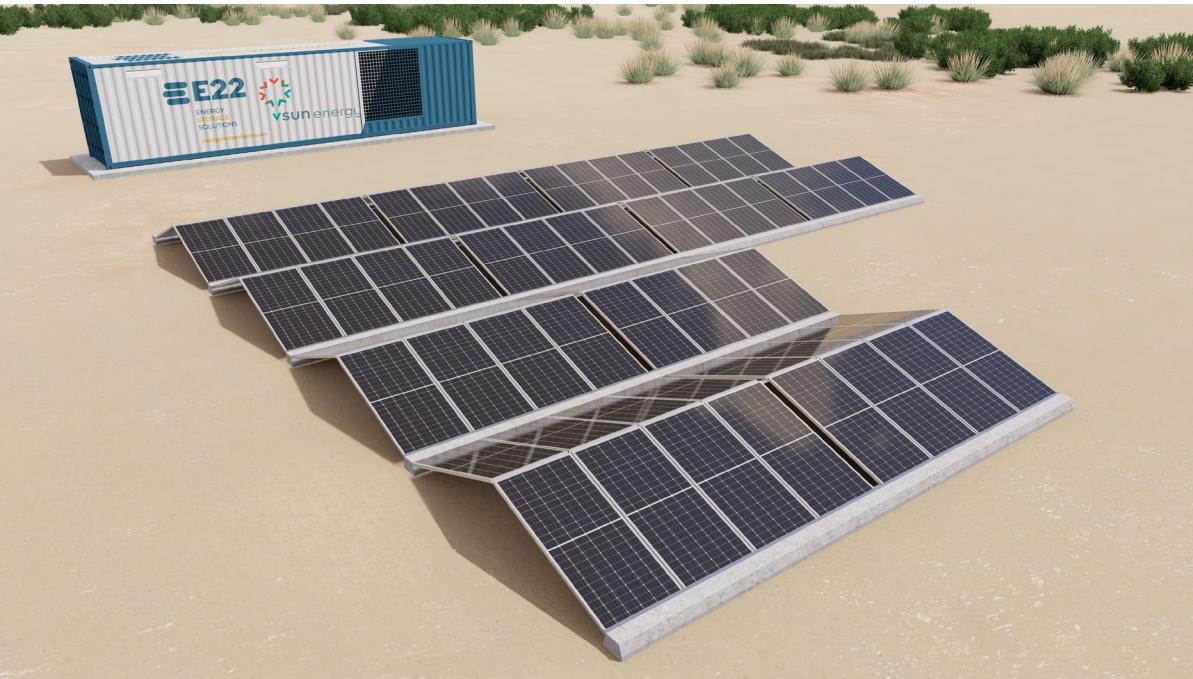


EMISSION REDUCTION

Pathway to Net Zero

Engineering Design

- ▶ Pelletising & Roasting using Straight Grate/Rotary Kiln combination design, plus other process design improvements in leaching & precipitation circuits
- ▶ Air cooling or using process water rather than cooling requiring electricity demand
- ▶ Potential tree planting at processing plant site to generate carbon offsets



Renewable Energy Strategy

- ▶ AVL will utilise renewable energy resources on its sites from start-up (potential is 35 – 80%)
- ▶ Use of solar and/or wind generation at the minesite and processing plant
- ▶ Installation of VRFBs at both sites for energy storage and EV charging
- ▶ Collaboration with ATCO for delivery of green hydrogen into the natural gas supply at the processing plant
- ▶ Potential use of electric or green hydrogen fuelled vehicles onsite and for haulage
- ▶ Downstream processing of vanadium electrolyte
- ▶ Subsidiary focused on growing the vanadium redox flow battery market through installation and maintenance of systems

Why use the VRFB for energy storage?



Able to store large amounts of **energy** for later use



Easy to scale power and energy separately



Lifespan over 20 years with **no degradation in performance** over time



Non-flammable making it safer than other batteries on the market



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



Vanadium electrolyte can be **reused indefinitely** or used in steel market

THE AUSTRALIAN VANADIUM PROJECT

Vanadium Electrolyte Plant

- Vanadium electrolyte plant being built at Kwinana industrial area, south of Perth
- Partly funded by Australian Government manufacturing grant of \$3.69M
- Vanadium electrolyte technology and vanadium feedstock to be provided by U.S. Vanadium LLC
- Plant build being undertaken by WA engineering group Primero
- Initial plant to produce 1.6M litres per annum (able to store 33MWh) of vanadium electrolyte for use in Australian deployed VRFBs
- Local electrolyte production provides AVL and VSUN Energy with competitive advantage



U.S. Vanadium LLC electrolyte plant in Arkansas, US

VSUN ENERGY

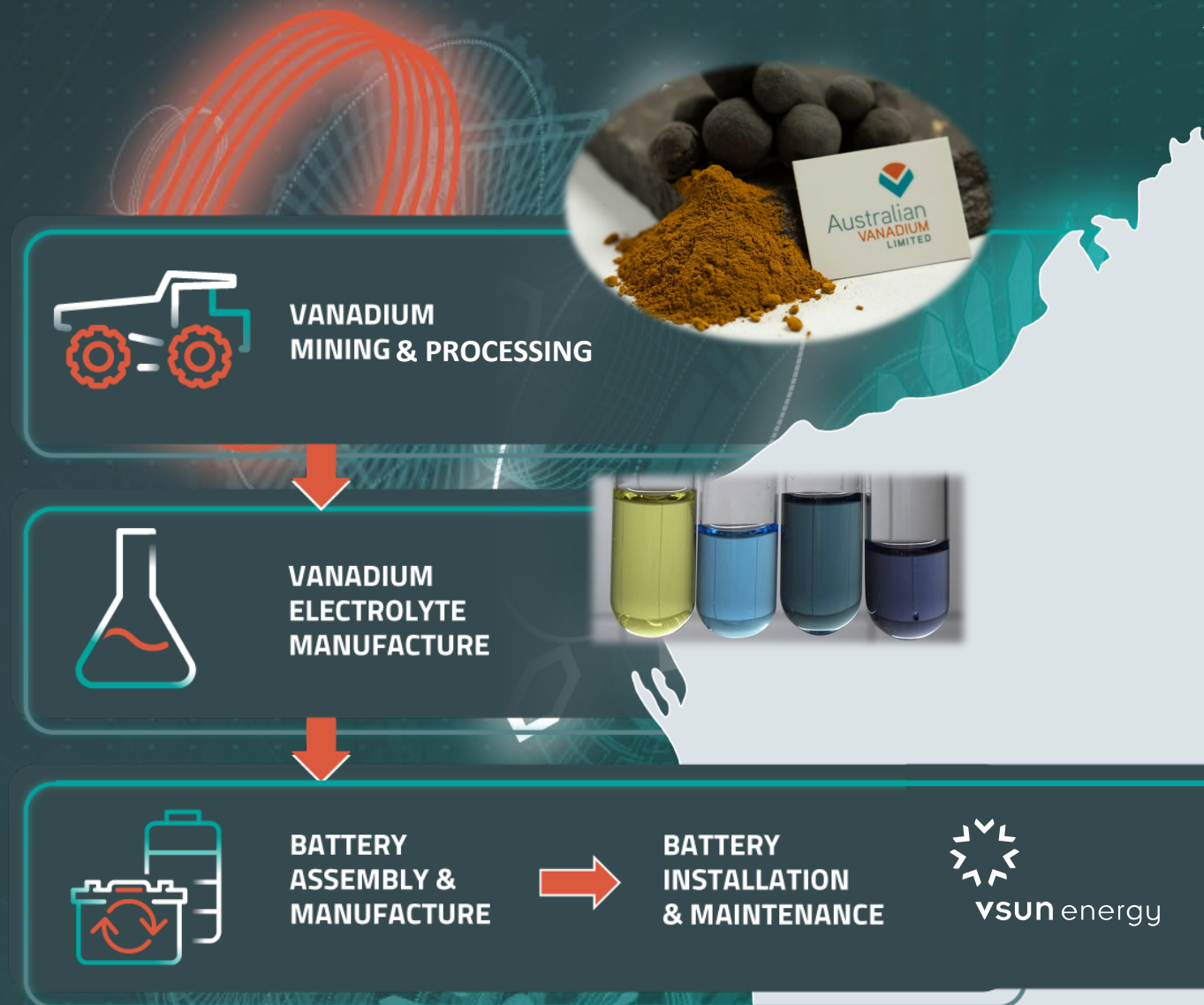
IGO BATTERY UPDATE

- First VRFB-based standalone power system (SPS) project for a mining operation in WA.
- VRFB from manufacturer E22 in Spain currently being tested in Perth prior to deployment.
- SPS to be trialled by IGO Limited (ASX: IGO) to target 100% renewable energy to power a water bore pump.
- Mining sector offers a wide range of opportunities for fossil fuel reduction using 100% renewable energy coupled with long duration energy storage (12+ hours) using VRFB SPS configuration by VSUN Energy.
- Project partly funded by \$3.69M Australian Government Modern Manufacturing Initiative Grant.
- System design, testing and implementation are being completed by VSUN Energy, 100% owned subsidiary of Australian Vanadium Limited.





65kW/300kWh VRFB arrival in Western Australia

Vertical Integration Vanadium Production





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