

ASX ANNOUNCEMENT

22ND JULY 2021

AVL AWARDED \$3.69M FEDERAL GOVERNMENT MANUFACTURING GRANT

AVL secures grant funding to design, build and operate an Australian vanadium battery electrolyte plant and develop local vanadium redox flow battery prototypes.

KEY POINTS

- **AVL has been awarded a competitive grant from the Australian Government under the Resources Technology and Critical Minerals Processing National Manufacturing Priority Grant.**
- **The grant is for matched funding to support AVL's plan to:**
 - **Include a high-purity processing circuit to produce battery, chemical and master-alloy grade vanadium pentoxide as part of the development of the Australian Vanadium Project.**
 - **Build and operate a commercial vanadium electrolyte plant based in WA, to support the rollout of vanadium redox flow batteries (VRFBs) in Australia.**
 - **Manufacture prototype/demonstration residential and stand-alone power systems (SPS) based on VRFB technology, for distribution into Australian energy markets.**

Australian Vanadium Limited (ASX: AVL, "the Company" or "AVL") is pleased to advise that it has been awarded a matched funding grant under the Australian Government's Resources Technology and Critical Minerals Processing National Manufacturing Priority roadmap.

The roadmap sets out plans for government support of manufacturing in Australia, with six key areas of focus. Downstream processing of critical minerals such as vanadium is one of the opportunities being encouraged through this grant funding.

The grant award was announced by Hon Christian Porter MP, Minister of Industry Science and Technology today.

Managing Director, Vincent Algar comments, “AVL is pleased to have been awarded this grant from the Australian Government. The grant will enable us to add further value to the vanadium products we plan to produce in Australia from the proposed development of the Australian Vanadium Project in the Mid-West region of Western Australia. The grant will provide support to AVL to achieve production of high-purity vanadium pentoxide, which is a key input to vanadium-titanium master alloys for critical steel applications and vanadium electrolyte for batteries. In turn this will assist development of the Project, with the Company now in discussion with off-takers for vanadium electrolyte in addition to vanadium pentoxide.

The grant will allow AVL to produce vanadium electrolyte commercially to support the development of the long duration energy storage market, which will play a key role in future grid stability in this renewable energy generation era.

VRFB battery systems are easier to manufacture than other batteries, due to the use of only a single metal component, vanadium, to store the energy. They are ideal for accelerating battery manufacturing in Australia, using locally produced vanadium and other battery components.”

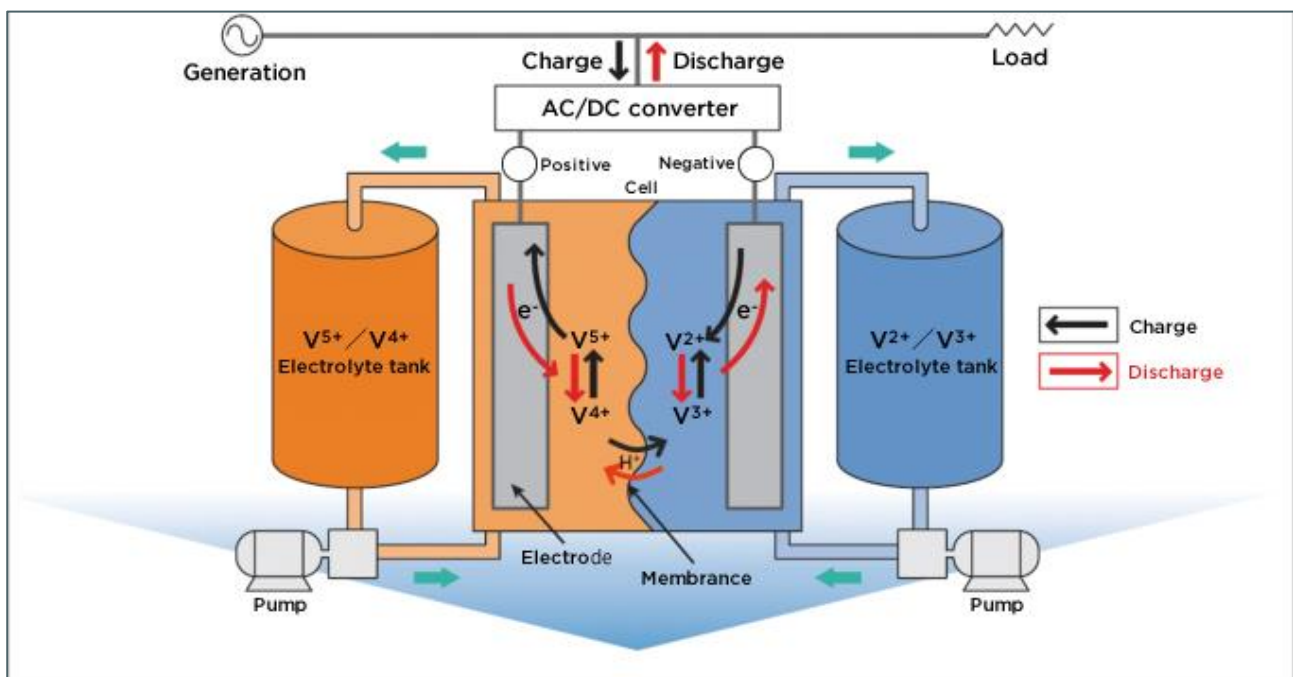


Figure 1 Vanadium redox flow battery - Sumitomo Electric

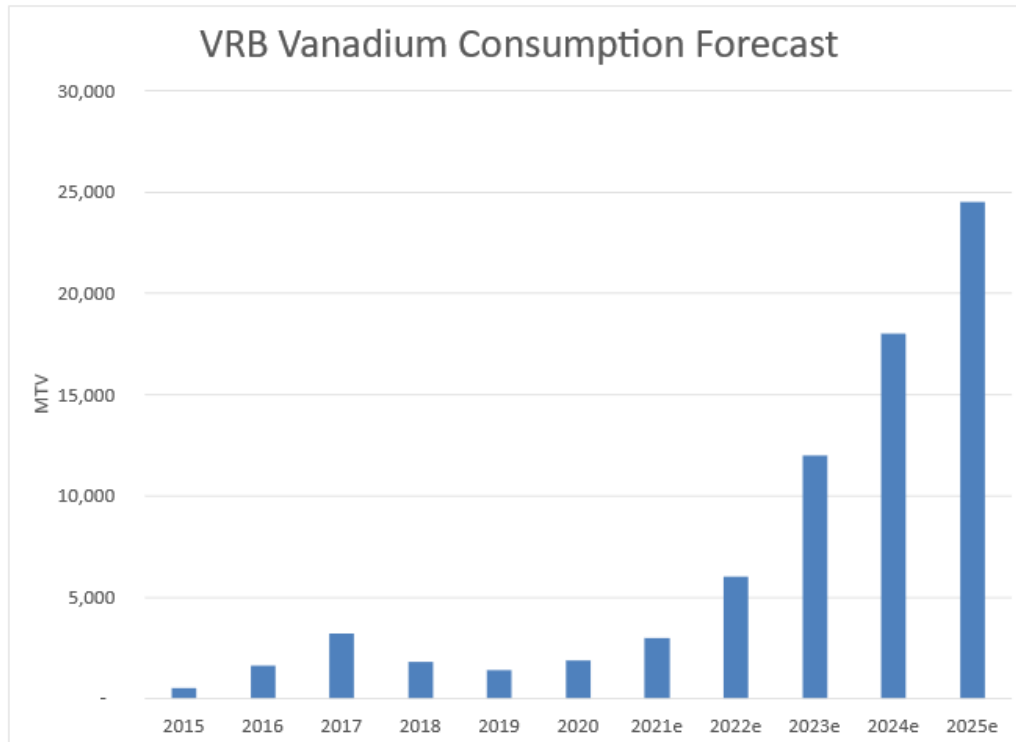
The VRFB uses four different vanadium oxidation states in liquid electrolyte to store chemical potential energy. Increasing the volume of electrolyte allows more energy to be stored. The vanadium electrolyte forms 30 to 60% of the cost of the battery, depending on how many hours of storage are required. VRFBs are ideal for providing long duration energy storage. Vanadium electrolyte can be leased to reduce capital cost and can be 100% reused or recycled at the end of the battery’s mechanical life.

The grant will also allow AVL to finalise its high-purity vanadium pentoxide processing route, manufacture vanadium electrolyte and manufacture prototypes of both an SPS and residential VRFB similar to the one pictured below.



Figure 2 Proposed 5kW/30kWh residential VRFB design

AVL's vertical integration strategy for the battery market has been developed since it launched VSUN Energy in 2016. VSUN Energy was created to focus on the development of the battery application of vanadium in Australia. The steel market currently consumes most of the world's vanadium production and defines both demand and prices. A secondary market for battery applications will create significant new demand (see Figure 3) and help to develop price stability. AVL has strongly championed the growing battery market for the past 5 years, with Managing Director, Vincent Algar helping to set up the Energy Storage Committee of the global vanadium organisation Vanitec, in conjunction with other key industry players such as Largo Resources, Bushveld Minerals and Glencore.



Source: TTP Squared, Inc.

Figure 3 VRFB Global Vanadium Consumption Forecast

The Company plans to supply V_2O_5 from the Australian Vanadium Project to manufacture vanadium electrolyte which will then be supplied to VRFB projects in Australia and in the Asia Pacific Region. The electrolyte plant will be the first and only plant of its type in the region.

VSUN Energy installs and maintains commercial VRFB systems. Customers will benefit from the availability of locally produced vanadium electrolyte, which is currently sourced mainly from China.

The AVL strategy and grant objectives complement both the Federal and State governments' plans for the battery industry in Australia and the addition of value to minerals mined in Australia. Emphasising the importance of the value and jobs be retained inside Australia.

The manufacturing project must be fully completed by 31st March 2024. The total project cost is \$7.4m, with matched funding of \$3.69m being provided by the Australian Government.

For further information, please contact:

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This announcement has been produced in accordance with the Company's published continuous disclosure policy and has been approved by the Board

ABOUT AUSTRALIAN VANADIUM LTD

AVL is a resource company focused on vanadium, seeking to offer investors a unique exposure to all aspects of the vanadium value chain – from resource through to steel and energy storage opportunities. AVL is advancing the development of its world-class Australian Vanadium Project at Gabanintha. The Australian Vanadium Project is currently one of the highest-grade vanadium projects being advanced globally, with 208.2Mt at 0.74% vanadium pentoxide (V_2O_5), containing a high-grade zone of 87.9Mt at 1.06% V_2O_5 , reported in compliance with the JORC Code 2012 (see ASX announcement dated 4th March 2020 ‘*Total Vanadium Resource at the Australian Vanadium Project Rises to 208 Million Tonnes*’ and ASX announcement dated 22nd December 2020 ‘*Technical and Financial PFS Update*’).

VSUN Energy is AVL’s 100% owned subsidiary which is focused on developing the market for vanadium redox flow batteries for energy storage.

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, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant 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.

APPENDIX 1

The Australian Vanadium Project – Mineral Resource estimate by domain and resource classification using a nominal 0.4% V₂O₅ wireframed cut-off for low-grade and nominal 0.7% V₂O₅ wireframed cut-off for high-grade (total numbers may not add up due to rounding).

2020 Feb	Category	Mt	V ₂ O ₅ %	Fe %	TiO ₂ %	SiO ₂ %	Al ₂ O ₃ %	LOI %
HG	Measured	10.1	1.14	43.9	13.0	9.2	7.5	3.7
	Indicated	25.1	1.10	45.4	12.5	8.5	6.5	2.9
	Inferred	52.7	1.04	44.6	11.9	9.4	6.9	3.3
	Subtotal	87.9	1.06	44.7	12.2	9.2	6.8	3.2
LG 2-5	Indicated	44.5	0.51	25.0	6.8	27.4	17.0	7.9
	Inferred	60.3	0.48	25.2	6.5	28.5	15.3	6.7
	Subtotal	104.8	0.49	25.1	6.6	28.0	16.1	7.2
Trans 6-8	Inferred	15.6	0.65	28.4	7.7	24.9	15.4	7.9
	Subtotal	15.6	0.65	28.4	7.7	24.9	15.4	7.9
Total	Measured	10.1	1.14	43.9	13.0	9.2	7.5	3.7
	Indicated	69.6	0.72	32.4	8.9	20.6	13.2	6.1
	Inferred	128.5	0.73	33.5	8.8	20.2	11.9	5.4
	Subtotal	208.2	0.74	33.6	9.0	19.8	12.1	5.6

The Australian Vanadium Project - Ore Reserve Statement as at December 2020, at a cut-off grade of 0.7% V₂O₅.

Ore Reserve	Mt	V ₂ O ₅ %	Fe ₂ O ₃ %	TiO ₂ %	SiO ₂ %	LOI%	V ₂ O ₅ production kt	Ore Reserve	Mt
Proved	9.8	1.08	59.9	12.4	8.7	3.5	63.2	Waste	244.5
Probable	22.4	1.04	61.7	11.8	8.3	2.8	158.9	Total Material	276.7
Total Ore	32.1	1.05	61.2	12.0	8.4	3.0	222.1	Strip Ratio	7.6

COMPETENT PERSON STATEMENT — MINERAL RESOURCE ESTIMATION

The information in this announcement that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (consultant with Trepanier Pty Ltd) and Mr Brian Davis (consultant with Geologica Pty Ltd). Mr Barnes and Mr Davis are both members of the Australasian Institute of Mining and Metallurgy (AusIMM) and the Australian Institute of Geoscientists (AIG). Both have sufficient experience of relevance to the styles of mineralisation and types of

deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Barnes is the Competent Person for the estimation and Mr Davis is the Competent Person for the database, geological model and site visits. Mr Barnes and Mr Davis consent to the inclusion in this announcement of the matters based on their information in the form and context in which they appear.

COMPETENT PERSON STATEMENT — ORE RESERVES

The technical information in this announcement that relates to the Ore Reserve estimate for the Project is based on information compiled by Mr Ross Cheyne, an independent consultant to AVL. Mr Cheyne is a Fellow of the Australasian Institute of Mining and Metallurgy. He is an employee and Director of Orelogy Mine Consulting Pty Ltd. Mr Cheyne has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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. Mr Cheyne consents to the inclusion in the announcement of the matters related to the Ore Reserve estimate in the form and context in which it appears.

COMPETENT PERSON STATEMENT – METALLURGICAL RESULTS

The information in this announcement that relates to Metallurgical Results is based on information compiled by independent consulting metallurgist Brian McNab (CP. BSc Extractive Metallurgy). Mr McNab is a Member of AusIMM. He is employed by Wood Mining and Metals. Mr McNab has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is undertaken, to qualify as a Competent Person as defined in the JORC 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr McNab consents to the inclusion in the announcement of the matters based on the information made available to him, in the form and context in which it appears.