

ASX ANNOUNCEMENT

28 JULY 2023

## HORIZON POWER TO PURCHASE VFB FOR LONG DURATION ENERGY STORAGE PILOT

*VSUN Energy vanadium flow battery project for high renewable energy penetration*

### KEY POINTS

- Western Australian regional energy provider Horizon Power has entered into a contract with VSUN Energy to purchase its first vanadium flow battery (VFB) for a long duration storage pilot in regional Western Australia.
- VSUN Energy to purchase, install and commission the VFB for Horizon Power in Kununurra, northern Western Australia.
- Project will increase understanding of VFB use for long duration energy storage and fossil fuel reduction scenarios in Horizon Power's microgrids across regional and remote Western Australia.
- Battery to be supplied by leading global VFB manufacturer Invinity Energy Systems plc (AIM: IES).

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Australian Vanadium Limited (ASX: AVL, "the Company" or "AVL") is pleased to announce that its 100% owned subsidiary VSUN Energy Pty Ltd has signed an agreement with Western Australia's regional energy provider, Horizon Power, for the purchase, installation and commissioning of a VFB in Kununurra, Western Australia.

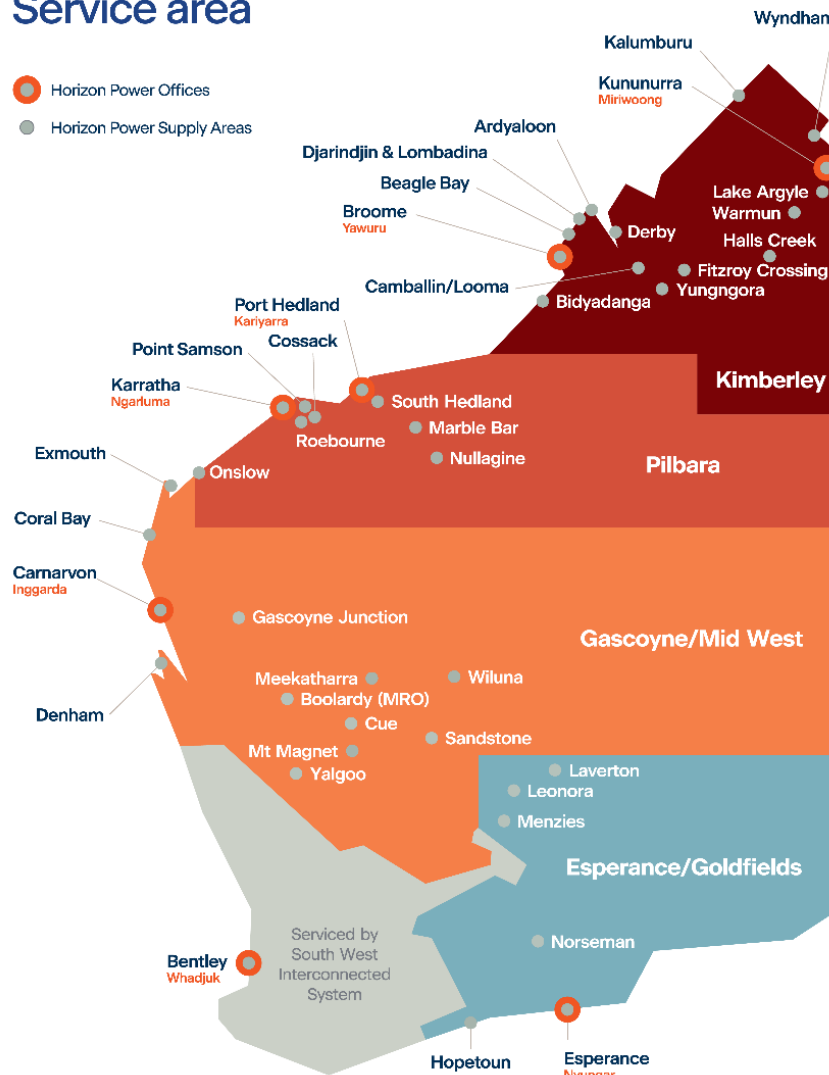
The 220kWh battery, which can deliver up to 78kW of power, will be sourced from leading global VFB manufacturer Invinity Energy Systems plc (AIM: IES).

The use of long duration energy storage, in the form of VFBs, could assist Horizon Power to accelerate the decarbonisation of its energy network, which covers 2.3 million square kilometres (see Figure 1). The VFB will be used for Horizon Power's long duration energy storage pilot which aims to increase understanding of how this technology can provide long periods of 100% renewable energy supply in regional and remote energy systems across Western Australia.

AVL's Chief Executive Officer, Graham Arvidson comments, "*This is the first contracted VFB project for an Australian energy utility. VSUN Energy has been actively pursuing opportunities for VFB deployments and is seeing an increased interest from all energy sectors for this effective energy storage technology which uses vanadium at its core. Horizon Power has chosen to be one of the early movers in Australia in support of a technology game changer for the many microgrids in the*

country. Horizon Power’s support of the VFB technology will also assist AVL and VSUN Energy’s planned vertical integration “pit to battery” strategy. Future VFB projects in Australia will not only be deployed locally, but have significant local content, including AVL’s vanadium electrolyte from its plant which is currently under construction in Wangara, Western Australia.”

## Service area



**Figure 1 - Horizon Power service area**

Horizon Power’s Chief Executive Officer, Stephanie Unwin, said that the pilot would support the organisation’s focus on solving the important technical problem of long duration storage and performance in harsh conditions, providing a pathway to reaching its decarbonisation goals.

*“Long duration energy storage provides backup power during times of peak demand or when the power supply is interrupted, storing high volumes of excess energy when demand is low and the ability to shift energy storage into the night. It can also minimise the need for costly fossil fuel generation and grid infrastructure upgrades.*”

*The VFB is specifically designed to deliver large amounts of energy over a long period of time and is temperature resilient – which is critical for our unique regional and remote networks.*

*This is an exciting trial which will allow us to increase our understanding of the technology in a regional energy system and its ability to provide long periods of 100% renewable energy.”*

Matt Harper, Chief Commercial Officer at Invinity Energy Systems, comments, “*Due to their durability, safety and reliability, vanadium flow batteries have a vital role to play in reducing the use of fossil fuels in power generation, particularly in remote communities. Invinity is pleased to be supplying this proven and commercialised technology, that has its roots in Australia, for VSUN Energy and Horizon Power who are spearheading the use of alternative-to-lithium batteries in an important market for Invinity.*”

The contract between Horizon Power and VSUN Energy allows for termination of the agreement if completion is not achieved by 28 March 2024, subject to extension of time by mutual agreement between the parties. The agreement otherwise contains termination clauses which are considered standard for agreements of this nature.

Site planning and development work will now commence, with the Invinity Energy Systems’ VFB to be delivered and installed early next year.

For further information, please contact:

**Graham Arvidson, CEO**

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

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## 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 one of the most advanced vanadium projects being developed globally, with 239Mt at 0.73% vanadium pentoxide ( $V_2O_5$ ), containing a high-grade zone of 95.6Mt at 1.07%  $V_2O_5$  and an Ore Reserve of 30.9Mt at 1.09%  $V_2O_5$  comprised of a Proved Reserve of 5Mt at 1.11%  $V_2O_5$  and a Probable Reserve of 20.4Mt at 1.07%  $V_2O_5$ , reported in compliance with the JORC Code 2012 (see ASX announcement dated 1<sup>st</sup> November 2021 '*Mineral Resource Update at the Australian Vanadium Project*' and ASX announcement dated 6<sup>th</sup> April 2022 '*Bankable Feasibility Study for the Australian Vanadium Project*').

VSUN Energy is AVL's 100% owned renewable energy and energy storage subsidiary which is focused on developing the Australian market for vanadium flow batteries for long duration energy storage. VSUN Energy was established in 2016 and is widely respected for its VFB expertise. AVL's vertical integration strategy incorporates processing vanadium to high purity, manufacturing vanadium electrolyte and working with VSUN Energy as it develops projects based on renewable energy generation and VFB energy storage.

## APPENDIX 1

The Australian Vanadium Project – Mineral Resource estimate by domain and resource classification using a nominal 0.4% V<sub>2</sub>O<sub>5</sub> wireframed cut-off for low-grade and nominal 0.7% V<sub>2</sub>O<sub>5</sub> wireframed cut-off for high-grade (total numbers may not add up due to rounding).

Zone	Category	Mt	V <sub>2</sub> O <sub>5</sub> %	Fe %	TiO <sub>2</sub> %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	LOI %
HG	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
	<b>Subtotal</b>	<b>95.6</b>	<b>1.07</b>	<b>44.7</b>	<b>12.2</b>	<b>9.1</b>	<b>6.8</b>	<b>3.2</b>
LG	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
	<b>Subtotal</b>	<b>128.5</b>	<b>0.49</b>	<b>24.9</b>	<b>6.6</b>	<b>28.2</b>	<b>16.1</b>	<b>7.2</b>
Transported	Inferred	14.9	0.66	29.0	7.8	24.5	15.1	7.8
	<b>Subtotal</b>	<b>14.9</b>	<b>0.66</b>	<b>29.0</b>	<b>7.8</b>	<b>24.5</b>	<b>15.1</b>	<b>7.8</b>
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
	<b>Subtotal</b>	<b>239.0</b>	<b>0.73</b>	<b>33.1</b>	<b>8.9</b>	<b>20.4</b>	<b>12.3</b>	<b>5.6</b>

The Australian Vanadium Project - Ore Reserve Statement as at April 2022, at a cut-off grade of 0.7% V<sub>2</sub>O<sub>5</sub>.

Ore Reserve	Mt	V <sub>2</sub> O <sub>5</sub> %	Fe%	TiO <sub>2</sub> %	SiO <sub>2</sub> %	LOI%	V <sub>2</sub> O <sub>5</sub> 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
<b>Total Ore</b>	<b>30.9</b>	<b>1.09</b>	<b>62.8</b>	<b>12.4</b>	<b>9.3</b>	<b>3.2</b>	<b>223.8</b>	Strip Ratio	7.7

## ASX CHAPTER 5 COMPLIANCE AND CAUTIONARY AND FORWARD LOOKING STATEMENTS

### **ASX Listing Rules 5.19 and 5.23**

#### **ASX Listing Rule 5.19**

The information in this announcement relating to production targets, or forecast financial information derived from a production target, is extracted from the announcement entitled 'Bankable Feasibility Study for the Australian Vanadium Project' released to the ASX on 6<sup>th</sup> April 2022 which is available on the Company's website [www.australianvanadium.com.au](http://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 announcement relating to exploration results and mineral resource and ore reserve estimates for the Australian Vanadium Project is extracted from the announcement entitled 'Bankable Feasibility Study for the Australian Vanadium Project' released to the ASX on 6<sup>th</sup> April 2022 which is available on the Company's website [www.australianvanadium.com.au](http://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 release 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 reflect the view of AVL only as of the date of this release.

The forward-looking statements made in this announcement relate only to events as of the date on which the statements are made.

AVL will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this announcement except as required by law or by any appropriate regulatory authority.