

## Vanadium Electrolyte Production Update

### Highlights:

- **Vanadium electrolyte pilot plant due for arrival in Australia.**
- **Pilot plant to be located within laboratory facilities at a WA university.**
- **Test work on vanadium electrolyte to commence immediately upon pilot plant installation**
- **Vanadium pentoxide samples for test work have been sourced globally.**
- **Discussions with vanadium redox flow battery manufacturers about potential commercial supply of electrolyte continuing.**

Australian Vanadium Limited (ASX: AVL, “the Company” or “AVL”) is pleased to provide investors with an update on the progress of their pilot vanadium electrolyte plant.

The installation of the pilot vanadium electrolyte plant will enable AVL to develop unique vanadium electrolyte production expertise and capability within Australia. The company aims to develop both stand-alone and mine-attached vanadium electrolyte capacity to support the growing demand in the vanadium redox flow battery (VRFB) sector.

The pilot plant will be used to test and verify the production of vanadium electrolyte products that are suitable and approved for use in third party VRFB systems being sold in Australia, New Zealand, the Pacific and Asia.

### Shipping

As per the ASX announcement dated 7<sup>th</sup> June 2016, C-Tech Innovation Limited completed construction of the electrolyte processing pilot plant and shipped it from the United Kingdom to Perth, Western Australia. The plant is due to arrive within 10 days.

### Location

The pilot plant will be located within a laboratory facility at a Western Australian university. Installing the pilot plant at a university provides a cost effective solution and represents an excellent opportunity for collaboration between the commercial and educational fields in this technology space.

### Distribution

Ongoing discussions on the future sale and distribution of vanadium electrolyte continue with numerous VRFB manufacturers including GILDEMEISTER Energy Storage GmbH, who are experiencing rapid growth in demand for their large scale (MW) storage systems. Demand for electrolyte quality vanadium is rising and strongly supports the integration strategy adopted by AVL.

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### ASX ANNOUNCEMENT

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### Projects:

**Gabarintha** Vanadium  
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## Sourcing V<sub>2</sub>O<sub>5</sub>

AVL has commenced sourcing low-cost, high quality vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) for quality testing purposes from a wide variety of global sources including Brazil, China and Africa. To date the Company has sourced material from six international sources for the pilot test work. A ready supply of V<sub>2</sub>O<sub>5</sub> will enable AVL to rapidly develop commercial electrolyte production to support local and regional VRFB sales and service the anticipated rapid growth in large-scale stationary energy storage market development.

In the longer term the Company aims to supply its own vanadium pentoxide from the high grade Gabanintha Project for use in the production of vanadium electrolyte.

## About Australian Vanadium Limited

AVL is a diversified resource company with an integrated strategy with respect to 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 100%-owned, world-class Gabanintha vanadium project. Gabanintha is currently one of the highest-grade vanadium projects being advanced globally with measured, indicated and inferred resources of 91.4Mt, grading 0.82% V<sub>2</sub>O<sub>5</sub> and containing a discrete high-grade zone of 56.8Mt, grading 1.0% V<sub>2</sub>O<sub>5</sub> reported in compliance with the 2012 JORC Code (refer to YRR ASX Announcement dated 10 November 2015 and Table 1). AVL recently completed an advanced Concept Study which indicated strong justification for further study work on the resource, metallurgy, mine plan, environmental and hydrology to further de-risk Gabanintha and move it towards development.

AVL also aims to develop a local production capacity for high-purity vanadium electrolyte, which forms a key component of VRFB systems. The Company is acquiring a vanadium electrolyte pilot plant from C-Tech Innovation Limited, a research, technology and innovation organisation based in the UK. C-Tech Innovation Limited has developed technologies for electrochemical preparation of vanadium electrolyte as well as many other chemical and electrochemical technologies that can assist in the preparation of high quality vanadium electrolyte.

AVL, through its 100%-owned subsidiary VSUN Pty Ltd, is also actively marketing VRFB systems in Australia through a distribution agreement with world-leading flow battery manufacturer, GILDEMEISTER Energy Storage GmbH (refer to ASX Announcement dated 11 April 2016) and has recently successfully installed its first battery on a farm in south Western Australia. Since the installation, increased volumes of project valuations have been requested from the VSUN team and additional sales staff are being actively recruited.

For further information, please contact:

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*The information relating to the Gabanintha Project 2015 Mineral Resource estimate reported in this announcement is based on information compiled by Mr John Tyrrell. Mr Tyrrell is a Member of The Australian Institute of Mining and Metallurgy (AusIMM) and a full time employee of AMC (AMC Consultants Pty Ltd). Mr Tyrrell has more than 25 years' experience in the field of Mineral Resource Estimation. He has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and in resource model development 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. Tyrrell consents to the inclusion in the report of the matters based on the information made available to him, in the form and context in which it appears.*

*The information is extracted from the report entitled "Substantial high-grade vanadium resource highlights Gabanintha's world-class potential" released to ASX on 10 November 2015 and is available on the company website at [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, in the case of estimates of Mineral Resource 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 has not been materially modified from the original market announcement.*

<http://www.australianvanadium.com.au/wp-content/uploads/2015/02/Gabanintha-Resource-Update-2015-10-Nov-Final.pdf>

**TABLE 1**  
**GABANINTHA PROJECT**  
**MINERAL RESOURCES STATEMENT**

JORC Resource Class	Tonnes Million	In situ bulk density	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 %
<b>High Grade Zone</b>								
Measured	7.0	3.73	1.09	43	12	10	8	3.4
Indicated	4.3	3.29	1.07	41	12	12	9	4.6
Inferred	45.5	3.67	0.97	42	11	12	8	2.8
<b>Subtotal</b>	<b>56.8</b>	<b>3.65</b>	<b>1.00</b>	<b>42</b>	<b>11</b>	<b>12</b>	<b>8</b>	<b>3.0</b>
<b>Low Grade Zone</b>								
Indicated	13.4	2.39	0.55	24	7	27	19	8.7
Inferred	21.1	2.48	0.53	25	7	27	17	7.0
<b>Subtotal</b>	<b>34.6</b>	<b>2.45</b>	<b>0.53</b>	<b>25</b>	<b>7</b>	<b>27</b>	<b>18</b>	<b>7.6</b>
<b>TOTAL</b>								
Measured	7.0	3.73	1.09	43	12	10	8	3.4
Indicated	17.8	2.61	0.68	28	8	23	16	7.7
Inferred	66.7	3.29	0.83	37	10	17	11	4.1
<b>TOTAL</b>	<b>91.4</b>	<b>3.19</b>	<b>0.82</b>	<b>35</b>	<b>10</b>	<b>18</b>	<b>11</b>	<b>4.8</b>

Table 1. Gabanintha Project – Mineral Resource estimate using a 0.3% V<sub>2</sub>O<sub>5</sub> cutoff for low grade and 0.7% V<sub>2</sub>O<sub>5</sub> cutoff for high grade (total numbers may not add up due to rounding)