ASX Announcement

Quarterly Activities Report for period ending June 30th 2016

26.07.2016

ASX ANNOUNCEMENT

Australian Vanadium Limited

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Projects:

Gabanintha Vanadium
Gabanintha Gold, Copper

Highlights:

- AVL and subsidiary VSUN sign dealership agreement with leading German vanadium battery manufacturer GILDEMEISTER Energy Storage GmbH for sales of CellCubes in Australia
- AVL signs MOU with C-tech Innovation Limited UK and orders pilot electrolyte plant in first for WA
- AVL and VSUN complete first GILDEMEISTER CellCube sale of FB10-100 for rural WA property
- WA's first commercial vanadium battery ships from Europe
- Successful completion of non-renounceable Rights Issue raises $3.0 million to fund vanadium battery market development, vanadium electrolyte plant and ongoing Gabanintha Project evaluation
- Gabanintha engineering concept study expanded for additional mining and processing scenarios including concentrate-only and co-production of vanadium battery electrolyte opportunities. Initial outcomes highly encouraging for project advancement
- The Company receives R&D rebate of $410,000 for the 2015 Tax Year.
- Appointment of AVL MD to Chair new Vanitec Energy Storage Committee.

AVL advances integration strategy in June Quarter

During a busy June 2016 quarter, Australian Vanadium Limited ("AVL" or "the Company") has taken active steps in the realization of its vertical integration strategy which commenced in 2015. Involvement in the energy storage market and accelerating growth in the demand for vanadium redox flow batteries (VRFB) were made reality with activities in the quarter.

Agreements completed during the quarter and the completion of the first WA sale of a CellCube unit via 100% subsidiary company VSUN Pty Ltd, have rapidly advanced AVL and VSUN's strategy.

The Company plans to assess the commercial viability of establishing electrolyte production in Australia commenced with a landmark agreement with C-Tech Innovation, and the subsequent placement of an order for a pilot electrolyte mixing plant for delivery to WA.

The progress of study work on the high-grade Gabanintha Vanadium Project in Western Australia continued, with delays to reporting arising due to new guidelines from ASX and ASIC around scoping study reporting.

The Gabanintha Project will allow Australian Vanadium to supply high-quality vanadium products to electrolyte producers worldwide, as well as its own plant planned for Australia.

GILDEMEISTER Energy Storage GmbH

On 11 April 2016, AVL announced it has signed a dealership agreement with GILDEMEISTER energy storage GmbH (GILDEMEISTER). The agreement allows AVL to pursue sales of the CellCube range of VRFB in Australia through AVL's 100% owned battery focused subsidiary, VSUN Pty Ltd.

The agreement follows the signing of a Memorandum of Understanding (MOU) with GILDEMEISTER in February 2016, which laid out intentions to collaborate on future VRFB installations and electrolyte production in Australia.

GILDEMEISTER manufactures the CellCube energy storage system, which is based on vanadium flow technology. The company has invested 15 years of research and development into its battery systems, which have been commercially available for seven years. GILDEMEISTER has installed more than 100 systems – establishing itself as the provider of the world's most commercially advanced flow battery.

The dealership agreement represents AVL's continuing commitment to advancing VRFB technology and the wider uses of vanadium in energy storage. Working with GILDEMEISTER forms a key part of AVL's vertical integration strategy, which involves the production of high-purity vanadium electrolyte – a core component of flow batteries.

The key terms of the dealership agreement, include;

- Formalising the appointment of VSUN (100% owned AVL subsidiary) as a dealer to sell GILDEMEISTER CellCube range of VRFB products for an initial five-year period
- Approval for VSUN to actively market CellCube products using the internet and approved marketing activities
- Outlining reporting and lead generation requirements
- Co-operation with product marketing, technical and after sales support

The MOU signed in February allows the companies to collaborate on a number of key strategic initiatives in Australia including;

- The completion of a dealership agreement for distribution of CellCube energy storage systems in Australia
- Collaboration on and finalisation of sales leads prior to the completion of the dealership agreement.
- Joint marketing of vanadium redox flow battery technologies and CellCube products as the preferred solution to large-scale grid-energy storage across the energy consumer market.
- Securing long-term local vanadium electrolyte supply for the Australian market through the development of AVL's high-grade Gabanintha Vanadium Project in Western Australia.

C-Tech Innovation Limited MOU and Electrolyte Pilot Plant Purchase

AVL announced on 20th April 2016 it had signed a Memorandum of Understanding (MOU) with C-Tech Innovation Limited, a research, technology and innovation organisation based in the UK. C-Tech Innovation has developed technologies for electrochemical preparation of vanadium electrolyte as well as many other chemical and electrochemical technologies.

Under the MOU, AVL and C-Tech will collaborate on the development of vanadium electrolyte production capability in Australia through both stand-alone and mine-attached facilities. Vanadium electrolyte products will be used in third party vanadium flow battery products sold in Australia, New Zealand, the Pacific and South East Asia.

C-Tech Innovation delivers innovative products and processes for electrochemical and advanced thermal applications. This includes unique electrochemical processes for use in energy and environmental applications, such as metal recovery, water treatment, chemical synthesis, fuel cells and batteries. C-Tech's work with flow batteries, and in particular, their product solutions for the electrochemical production of vanadium electrolyte, are a strong attraction for AVL as part of the company's integrated vanadium strategy for VRFB.

C-Tech has developed a proprietary electrochemical process for the production of vanadium electrolyte suitable for use in vanadium redox flow batteries. Approximately 20% to 30% of the total cost of a VRFB battery is due to the vanadium electrolyte, which can be used to store electrical energy from grid or renewable generation sources. This stored energy is then able to be used later when the battery is discharged, for example, when demand is higher than supply from renewable sources, or to export back to the grid to maintain grid stability.

AVL's 100% owned subsidiary, VSUN, is also party to the MOU. All three parties will collaborate to develop electrolyte production capabilities in Australia, New Zealand and South East Asia. Key objectives of the agreement include;

- The contract supply and installation of a pilot-scale electrolyte mixing plant to Perth, Australia. The plant to be set up to allow testing of various vanadium sources with the aim of producing vanadium electrolyte of a suitable standard for use in commercial VRFB units;
- Design and supply of key components of a full-scale production electrolyte plant;
- Collaboration with other AVL consultants on design and specification of a mine-attached electrolyte purification and production facility as part of AVL Gabanintha feasibility study;
- AVL to act as an exclusive agent for C-Tech vanadium electrolyte cell technology in Australia, New Zealand and South East Asia.

C-Tech has developed important technology to support the anticipated rapid uptake of commercial vanadium flow batteries across the world as energy storage becomes a key part of renewable energy penetration. Raw materials such as vanadium require processing in order to prepare them for battery use. AVL's relationship with C-Tech is aimed at leveraging its existing technologies and exciting new ideas, providing AVL further opportunities to grow as it builds up its vanadium integration strategy.

On 7th June 2016, AVL announced it had purchased a vanadium electrolyte pilot plant from C-Tech Innovation Limited. This purchase will enable AVL to develop unique vanadium electrolyte production expertise and capability in Australia, through both stand-alone and planned mine-attached facilities. 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 vanadium redox flow battery products being sold in Australia, New Zealand, the Pacific and Asia.

Figure 1. C-Tech Electrochemical Pilot Plant

"The purchase and commissioning of this pilot plant is another concrete step forward for the company – in line with AVL's vanadium market integration strategy.

We are extremely pleased with AVL's positioning as a leader in the roll-out of vanadium-based technologies and applications, and we are very proud to be bringing this industry and its exciting down-stream processing opportunities, to Western Australia." – Vincent Algar, AVL's Managing Director

The equipment purchased from C-Tech is an experimental vanadium electrolyte production system, consisting of an electrochemical cell and complete balance of plant, to facilitate investigations into the commercial production of vanadium electrolyte.

The pilot system will be the first of its kind in Australia. Skid-mounted and self-contained, the unit has all the necessary components, (electrochemical cells, pumps, instrumentation, safety and process control mechanisms), to produce high quality vanadium electrolyte in a single operation, without the need for chemical reductants. The process creates a mixture of V^{3+} and V^{4+} ions in solution, used as the "fuel" in VRFB systems. The plant is capable of managing the ionic ratio of V^{3+}

to V^{4+} according to the specific battery requirements. The management of impurities in the feed is also a key indicator of VRFB performance, and the system will be used to assess and optimise different raw materials.

VRFB use the unique chemical properties of vanadium to hold four oxidation states in acid solution to operate. The batteries require only a single balanced initial solution to operate, making them distinct from other flow battery systems.

AVL will locate the test plant in a laboratory facility in the Perth metropolitan area and, on its arrival and commissioning , will commence testing a variety of vanadium source materials in the plant. Vanadium pentoxide (V_2O_5) powders will be sourced locally and internationally, allowing AVL to identify suitable material and suppliers for future commercial arrangements. Chemical analysis will be conducted and the results shared with C-Tech and GILDEMEISTER Energy Storage. Preparation of a solution that is suitable for use in GILDEMEISTER CellCube VRFB is a priority for AVL and VSUN.

Once a suitable supplier of V_2O_5 and consistent electrolyte results are achieved to the satisfaction of GILDEMEISTER, plans for a commercial electrolyte plant will be accelerated and arrangements with the suppliers finalised.

Raw materials such as vanadium require processing in order to prepare them for battery use. This relationship with C-Tech, leveraging its existing technologies and exciting new ideas, provides AVL with further opportunities to grow, as its vanadium integration strategy takes shape.

Developing expertise for future commercial production of electrolyte is a priority for AVL. This opportunity has the potential to be a high volume, high margin business unit, providing benefit to shareholders and simultaneously lowering the price of VRFB in the Australian market. This also enables the increased uptake of VRFB systems to occur in the many niches offered in the Australian energy market.

The plant is expected to be completed in August in the UK and shipped during September this year.

First WA CellCube Sale

On 18 May 2016 AVL announced completion of their first sale of a CellCube energy storage system in Australia. AVL's battery sales focused subsidiary VSUN Pty Ltd concluded the sale of a GILDEMEISTER CellCube FB 10-100 for installation at an agricultural property south of Busselton in Western Australia. The FB 10-100 can deliver 10kW of power and stores 100kWh of energy. It is a fully integrated containerised VRFB, and the first of its kind to be installed in Western Australia.

The CellCube is being installed along with a 15kW solar PV (photovoltaic) system delivered by partner Sun Connect. Together, the system will allow the client to store their unused solar energy and use it when solar power is unavailable. The storage capacity of 100kWh means up to 10 hours of power can be provided. The client is expecting to be up to 90% self-sufficient for their power needs, but will remain connected to the grid.

This sale will allow VSUN to proceed with this landmark installation. The installation of the CellCube FB 10-100 will allow VSUN to showcase the benefits of large battery storage devices to commercial customers. It will have the ability to time-shift up to 10 hours of power usage, by storing cheap, renewable energy from the solar PV system for later use.

AVL and an engineer from GILDEMEISTER will work with Sun Connect and Western Power to bed down the installation and connection of the PV system and the CellCube to the grid when the battery arrives in late August 2016. The operating system will allow VSUN to use the new knowledge to highlight the benefits that large flow battery systems can offer commercial customers, as well as the utilities, throughout Australia.

Site Background – Chapman Hill Road, Busselton

The property currently receives grid electricity from a Western Power single-phase power line, (see Figure 2). The client operates commercial laundry activities on site, as well as an irrigated native tree nursery. They are also planning new developments that will incorporate additional residential and commercial elements and increase the amount of power required, including the need for 3-phase power. To best meet these increased power requirements, the client has decided to install a 15kW solar PV system, (expandable to 30kW), attached to a CellCube FB10-100 VRFB system.

The CellCube battery meets Western Power SWIN (South West Interconnected Network) standards. The system configuration will also allow the existing single phase Western Power line to stay in place, with the battery able to deliver 3-phase power to the site. The CellCube FB10-100 battery is capable of being charged by the solar PV system, as well as from the grid in off-peak hours if required.

The battery order has been filled at the GILDEMEISTER facility in Vienna and, was shipped out earlier in July to Fremantle. The system is expected to arrive in Fremantle on 22nd August 2016 for road transport to the Busselton site. VSUN, with their partner Sun Connect, will then install the solar PV system and the CellCube battery system.

The total project value of the CellCube battery and solar PV system is A$164,000. This amount has been contracted to the client via a Power Purchase Agreement with a lease-to-buy component.

Figure 2. Location of Busselton agricultural property, site of first CellCube battery installation in WA.

Sales Leads Update

VSUN has now been operating since April 2016. The lead table currently being pursued has grown from 22 project leads (end of April Quarter 2016) to 35 leads at the end of June Quarter.

Leads are all for the potential sale of CellCube systems and in some cases include solar photo-voltaic systems (PV). Emphasis in these leads continues to be for large CellCube systems (FB 200-400 and larger). Interest in multiple smaller units is growing as the capabilities of the systems become acknowledged. VSUN anticipates this interest to grow more rapidly following the installation of the Busselton FB10-100 system which includes 3-phase capability.

The CellCube product family includes 10kW, 20kW, 30kW and 200kW power delivery storage systems which can store between 40kWh and 1600kWh in a modular plug-and-play container sized design. The systems are ideal for commercial and grid-scale applications with a need for long duration energy storage (from 2 hours to 10 hours). The systems are scalable beyond 200kW power/1600kWh of storage in multiples of the existing range.

Gabanintha Engineering Concept Study Update

Work is ongoing to evaluate and update the Gabanintha Project mining and development studies. Following changes during the quarter to reporting requirements by ASIC relating to forward looking statements, (IS 214, ASIC), AVL have decided to review the immediate reporting of the outcomes of the Concept Study and expand this to a Scoping Study Level. Initial outcomes from the Concept Study work are highly encouraging for project development.

A steady rise in the market prices of vanadium products (principally V_2O_5 and Ferro Vanadium) since the start of 2016 has had an immediate positive effect on the potential economics of Gabanintha.

The current resource model is currently being subjected to a pit optimisation study, with a review of the mining costs being conducted. Processing costs from the Battery Limits Consulting study indicate Gabanintha can be a low cost producer due to its high grade resource and recovery characteristics.

As reported earlier, additional scenarios have been included relating to the following new opportunities;

- A concentrate-only option: This will consider the production of a magnetic concentrate only. This would involve considering the mining of a high grade starter pit (V_2O_5 head grade >1.1%) and processing this through a crushing, grinding and magnetic separation circuit. A concentrate product could then be considered for transportation to a nearby facility or export sale. This scenario is being modelled to determine capital cost and potential economic outcomes.
- Inclusion of a direct production capacity for vanadium battery electrolyte: Under this scenario, normal ore preparation would take place using standard preparation (crush, grind, magnetic separation), followed by standard roast and leach processes used in the preparation of vanadium ores. A portion of the vanadium in solution from the leach phase will be taken aside and processed for production of high purity vanadium electrolyte. The balance of the leach solution will be taken through to the production of steel market quality V_2O_5. This scenario is being modelled to determine capital cost and potential economic outcomes.
- Optimising capital cost by the selection of appropriate throughput rate at start-up: Since capital cost for a new plant is relatively high, the consultant is currently considering various production throughput options and associated capital costs for high cost-long lead time items such as the roaster and power plant.
- Complete current pit optimisation studies and integrate results into Scoping study update. This will include the intention to generate initial Mineral Reserves from the existing Measured and Indicated Resources.
- Review of power cost reduction opportunities for the project by considering the use of long term solar heating and PV technology and associated potential government grants (such as ARENA grants) in the processing plant design.

The Company will report the findings of the study as soon as all reporting requirements for production targets and forward looking statements can be met to the satisfaction of the regulators.

AVL to Chair newly formed Energy Storage Committee on international Vanadium body Vanitec

During the quarter, AVL's Managing Director, Vincent Algar, was appointed Chair of Vanitec's newly created Energy Storage Committee.

Vanitec is a not-for-profit international organisation established in 1972. During most of its existence Vanitec has operated as a technical committee of vanadium producers whose objective is to promote the use of vanadium bearing materials. Its members include all the world's major vanadium producers.

The Energy Storage Committee will report to the Vanitec Market Development Committee and will oversee developments in the energy industry market for vanadium. Its focus will be on identifying the future global vanadium supply and demand, the quality required and OH&S guidelines surrounding electrolyte production and distribution.

Corporate

Capital Raising Successfully Completed

A Non-Renounceable Rights Issue was announced on the 9th March 2016 and completed on 23th June 2016, raising a total of $3,066,498 to fund vanadium battery market development as well as a feasibility study on an Electrolyte Plant and ongoing Gabanintha Project evaluation.

AVL offered one new share for every 3 existing shares held for an offer price of $0.013. Each new share received a free listed attaching option exercisable at $0.02 on or before 31st December 2018.

As at the 23rd June 2016, the Company had issued 235,884,557 shares and new options with respect to the rights issue.

Board Changes

On 2nd May 2016, the Company advised of the following Board changes, which came into effect from 29th April 2016;

- Non-Executive Chairman.

  Mr Brian Davis retired as Chairman of the Company and existing Non-Executive Director, Mr Brenton Lewis was appointed as Non-Executive Chairman

- Managing Director

Chief Executive Officer, Mr Vincent Algar was appointed as Managing Director of the Company. Mr Algar's promotion to the Board reflected his strong contribution to implementing the Company's vertical integration strategy since being appointed CEO in November 2014.

Mr Davis' valuable geological expertise will be retained as he continues as a technical consultant to AVL.

R&D Grant Funding

On 22nd June the Company announced that it had received $410,000 from the Federal Government's Research and Development Tax Incentive Scheme.

The scheme, administered jointly by AusIndustry and the Australian Taxation Office, allows the Company to claim a tax offset and receive a cash refund for up to 45 cents of each dollar spent on eligible Research and Development. The refundable tax offset relates to costs incurred by AVL during the 2014-2015 financial year.

Company Presentations and Conference Attendance

During the Quarter the Company attended and presented at a number of Industry conferences. These included;

- Melbourne Proactive Investors Lunch Seminar (presentation)
- Energy Storage Conference Melbourne (attendance)
- Resource Rising Stars Conference Gold Coast (presentation)
- International Flow Battery Forum Germany (attendance)

Tenement Schedule

Tenement Information as Required by Listing Rule 5.3.3 For the Quarter Ended 30 June 2016					
Project	**Location**	**Tenements**	**Economic Interest**	**Notes**	**Change in Quarter %**
Western Australia	**Gabanintha**	EL51/1534	100% Granted		0
		E51/1576	100% Granted		0
		EL51/843	100% Granted		0
		E51/1396	100% Granted		0
		P51/2634	100% Granted		0
		P51/2635	100% Granted		0
		P51/2636	100% Granted		0
		P51/2566	100% Granted		0
		P51/2567	100% Granted		0
		MLA51/878		100% On application	0
		E51/1685		100% On Application	0
Western Australia	**Nowthanna**	MLA51/771		100% On application	0
Western Australia	**Peak Hill**	E52/3349	100% Granted		0

For further information, please contact:

Vincent Algar, CEO

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Australian Vanadium Limited

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_2O_5 and containing a discrete high-grade zone of 56.8Mt, grading 1.0% V_2O_5 reported in compliance with the JORC Code 2012 (ASX Announcement 10 November 2015).

AVL also aims to develop a local production capacity for high-purity vanadium electrolyte, which forms a key component of vanadium redox flow batteries (VRFB). The Company has recently purchased 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.

This purchase will enable AVL to develop unique vanadium electrolyte production expertise and capability in Australia, through both stand-alone and planned mine-attached facilities. 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 products being sold in Australia, New Zealand, the Pacific and Asia.

AVL, through its 100%-owned subsidiary VSUN Pty Ltd, is also actively marketing VRFB in Australia through a distribution agreement with world-leading flow battery manufacturer, GILDEMEISTER Energy Storage GmbH.

Competent Person References

Competent Person Statement – Metallurgical Results
The information in this statement that relates to Metallurgical Results is based on information compiled by independent consulting metallurgist David Pass B.Sc (Hons), Mr Pass is a Member of The Australian Institute of Mining and Metallurgy. David Pass is employed by Battery Limits Pty Ltd Mr Pass 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 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr. Pass 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 . 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 persons 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

Material	JORC Resource Class	Million Tonnes	In situ bulk density	V_2O_5 %	Fe%	TiO_2 %	SiO_2 %	Al_2O_3 %	LOI%
High grade	**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
Subtotal		**56.8**	**3.65**	**1.00**	**42**	**11**	**12**	**8**	**3.0**
Low grade	**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
Subtotal		**34.6**	**2.45**	**0.53**	**25**	**7**	**27**	**18**	**7.6**
Subtotal	**Measured**	7.0	3.73	1.09	43	12	10	8	3.4
Subtotal	**Indicated**	17.8	2.61	0.68	28	8	23	16	7.7
Subtotal	**Inferred**	66.7	3.29	0.83	37	10	17	11	4.1
	TOTAL	**91.4**	**3.19**	**0.82**	**35**	**10**	**18**	**11**	**4.8**

Gabanintha Project – Mineral Resource estimate using a 0.3% V_2O_5 cutoff for low grade and 0.7% V_2O_5 cutoff for high grade (total numbers may not add up due to rounding)