ASX ANNOUNCEMENT

22ND OCTOBER 2020

AVL TO COLLABORATE WITH UK COMPANY GSA ENVIRONMENTAL ON VANADIUM PRODUCTS

MOU in place for commercial and technical collaboration with leading-edge engineering and metals recovery/extraction consultancy

KEY POINTS

- **MOU signed for commercial and technical collaboration with UK consultancy GSA Environmental Limited (GSAe).**
- **GSAe possesses unique intellectual property in the extraction of vanadium, nickel and other metals from a wide range of hydrocarbon, mining and industrial waste products.**
- **AVL and GSAe will explore opportunities to value-add to AVL's Australian Vanadium Project through additional vanadium sources and economies of scale.**
- **The companies plan to jointly evaluate low cost vanadium feedstocks with a view to commercial and technical joint venture or investment.**
- **AVL is advancing the Australian Vanadium Project at Gabanintha towards completion of a Bankable Feasibility Study in mid-2021, strongly focused on the Project's ability to become the lowest cost primary vanadium producer.**

Australian Vanadium Limited (ASX: AVL, "the Company" or "AVL") is pleased to advise that it has signed an MOU with UK based GSA Environmental Limited (GSAe), an engineering consultancy with front end engineering design, project management and process safety consultancy capabilities. GSAe has multi-disciplined and extensive expertise across a range of industry sectors including oil and gas processing and refining, petrochemicals and renewables. GSAe has specific intellectual property relating to the extraction of vanadium from traditionally hard-to-process by-product material such as petrochemical wastes and slags.

GSAe and AVL will collaborate principally to evaluate feedstocks that have the capability to further improve the economics of the Australian Vanadium Project at Gabanintha ("the Project") and its planned processing facility near the port city of Geraldton in Western Australia.

Australian Vanadium Limited
Level 1, 85 Havelock Street
West Perth, WA 6005

Phone: +61 8 9321 5594
Fax: +61 8 6268 2699
Email: info@australianvanadium.com.au

ASX: AVL
FRA: JT7.F
ABN: 90 116 221 740

AVL has made significant progress through its PFS and highly detailed pilot studies, enabling the Company to reliably target lowest quartile cost production of primary vanadium[1].

With a number of by-products containing vanadium, such as fly ash, slags and petcoke slags, AVL's world class vanadium team in conjunction with staff from GSAe will collaborate and partner to investigate the commercial opportunities and possible economies offered by incorporating alternative vanadium units into the processing plant. Vanadium and other metals, such as nickel, are contained in a variety of wastes including fly ash which is generated from crude oil. This material is currently disposed of in landfill sites around the world. Extracting the saleable material from this waste will therefore have a positive economic and environmental impact.

Managing Director, Vincent Algar, comments, '*AVL and GSAe have developed a strong relationship through previous interactions and common interest in the environment and vanadium redox flow battery chemistry and technology. Teaming up the vanadium processing expertise in AVL with GSAe's unique clean environment and metal extraction skills will allow us to deliver further improvements and positive investor outcomes for AVL shareholders and other stakeholders*.'

Figure 1 **Petcoke stockpiles**

The MOU is for a two year initial term with an option to extend by mutual agreement. The MOU can be terminated by either party if an offtake agreement with a supplier is not concluded by the end of the term. The agreement provides the basis for the two companies to enter into a commercial agreement for use of GSAe's proprietary technology and technologies developed between AVL and GSAe.

For further information, please contact:

Vincent Algar, Managing Director +61 8 9321 5594

[1] See AVL's 2020 Annual Report

This announcement has been approved 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 with an Ore Reserve of 18.24Mt at 1.04% V_2O_5 comprised of a Proved Reserve of 9.82Mt at 1.07% V_2O_5 and a Probable Reserve of 8.42Mt at 1.01% V_2O_5, reported in compliance with the JORC Code 2012 (see ASX announcement dated 19 December 2018 '*Gabanintha Pre-Feasibility Study and Maiden Ore Reserve'* and ASX announcement dated 4 March 2020 *'Total Vanadium Resource at the Australian Vanadium Project Rises to 208 Million Tonnes'.*).

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.

ABOUT GSA ENVIRONMENTAL LTD

GSAe is an experienced engineering consultancy and process technology provider that has worked in the area of metals extraction since the mid-1990s when work began to develop and install the world's first batch hydrometallurgy plant to extract vanadium and nickel oxides from ash produced in European power stations using Orimulsion™ as a fuel.

In order to use Orimulsion™, strict environmental permits were required to ensure that the ash was dealt with responsibly. Oil (and hence the Orimulsion™ fuel) contains trace amounts of various metals, including vanadium and nickel. These are concentrated through refining in the heavy residues and then into the ash when used as a fuel. Nickel oxides are classified as a category 1 carcinogen; vanadium oxides as a mutagen and so the disposal route could not be to landfill.

GSAe developed a route to recover these oxides which would allow the fuel to be used. A plant utilising the batch techniques was built in Harwich, UK and successfully operated on Orimulsion™ ash until the fuel stopped being exported in 2003. The plant was then used on multiple nickel and vanadium bearing feed materials such as Flexicoke and spent catalysts until the transport of dangerous goods act made it impossible to receive feed material in 2010.

Since 2010, GSAe has built on the knowledge and understanding gained during the operation of this plant and adapted into the technology company. Significant research and development has led to new routes for the treatment of hydrocarbon residues, spent refinery catalysts, HFO ashes and, latterly TiO_2 wastes.

GSAe now holds patents for recovering vanadium; scandium and niobium from TiO_2 residues produced using the chloride process and is in the process of submitting a similar application for sulphate route residues.

APPENDIX 1

The Australian Vanadium Project – Mineral Resource estimate by domain and resource classification using a nominal 0.4% V_2O_5 wireframed cut-off for low-grade and nominal 0.7% V_2O_5 wireframed cut-off for high-grade (total numbers may not add up due to rounding).

2020 Feb	**Category**	**Mt**	**V_2O_5 %**	**Fe %**	**TiO_2 %**	**SiO_2 %**	**Al_2O_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**

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.