

Australian Vanadium Limited signs MoU with C-Tech Innovation Limited to develop Electrolyte Plant in Australia.

Highlights:

- MOU signed with leading UK technology company C-Tech Innovation Limited (C-Tech) to collaborate on the development of a vanadium electrolyte plant in Australia.
- C-Tech is an innovative research and technology company focused on preparation of vanadium electrolyte for use in Redox Flow Batteries (VRB).
- Under the MoU a Test Plant capable of mixing and producing battery-ready electrolyte is to be established in Western Australia.
- C-Tech will also collaborate with AVL (along with other consultants) on a commercial-scale electrolyte plant.
- The addition of direct electrolyte capacity will be considered as part of the Gabanintha Project feasibility studies and plant design. C-Tech will assist in optimising metal recovery along with conventional metallurgical methods.
- MoU allows AVL to negotiate the exclusive licence to market the proprietary C-Tech electrolyte stack technology in Australia, New Zealand and South East Asia

Australian Vanadium Limited (ASX: AVL) is pleased to announce it has signed a Memorandum of Understanding (MoU) with C-Tech Innovation Limited, a research, technology and innovation organisation based in the UK. C-Tech 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.

20.4.2016

ASX ANNOUNCEMENT

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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 Vanadium Redox Flow Batteries (VRB).

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 VRB 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.

VRB's are unique energy storage devices particularly suited to commercial on-grid and off-grid applications, due to their scalability, long asset lives with deep and high cycling capability. Their low risk operation makes them particularly suitable for commercial operations where safety is of paramount importance.

AVL's 100% owned subsidiary, VSUN, is also party to the MoU. All three parties will collaborate so as 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 Vanadium Flow Battery 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 MD Ged Barlow said the opportunity presented a huge potential for the company and its technology to tap into the expanding Australasian renewables market.

"AVL's plans to vertically integrate vanadium mining with electrolyte production and flow battery commercialisation is an important step in creating a low cost and sustainable infrastructure for VRB energy storage. Our involvement in this partnership is hugely exciting for us from both a technological and a commercial standpoint."

AVL CEO Vincent Algar said the MoU was an important step forward for Australian Vanadium.

"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. This relationship with C-Tech, leveraging its existing technologies and exciting new ideas, provides AVL further opportunities to grow as it builds up its vanadium integration strategy"

"Details of the test plant contract can now commence with finalisation and shipping to follow as soon as possible."

AVL is focused on the development of its 100% owned world class Gabanintha Vanadium project. The project will include a local production capacity for high-purity vanadium electrolyte, which forms a key component of flow batteries

Gabanintha is currently one of the highest-grade projects being advanced globally with Measured, Indicated and Inferred Resources of 91.4Mt grading 0.82% V₂O₅ and containing a discrete high grade zone of 56.8Mt grading 1.0% V₂O₅ reported in compliance with the JORC Code 2012 (ASX Announcement 10 November 2015).

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