

AVL Signs First CellCube Vanadium Battery Sale in Western Australia

Highlights:

- AVL's 100% owned subsidiary, VSUN Pty Ltd, concludes its first CellCube sale. The sale and installation will be the first commercial vanadium flow battery to be commissioned in Western Australia.
- The GILDEMEISTER CellCube FB 10-100 is to be installed at a Busselton agricultural property as part of a 15kW solar PV installation.
- The CellCube order is being filled at the GILDEMEISTER facility in Vienna. Once prepared, it will be shipped to Fremantle for road transport to the Busselton site.
- The CellCube is able to deliver up to 10kW of power and has a storage capacity of 100kWh. This can provide up to 10 hours of renewable power to the site, supplied by charging from the solar PV system.
- The CellCube will provide 3-phase power to the site which currently has only a single phase power connection to the grid.
- Our client is expecting to be up to 90% self-sufficient for their power needs, but will remain connected to the grid.

Australian Vanadium Limited (ASX: AVL, "the Company" or "AVL") is pleased to announce the completion of its first sale of a CellCube energy storage system in Australia, by its subsidiary VSUN. This follows the recent completion of a definitive Distribution Agreement with the international leader in Vanadium Redox Flow Battery (VRB) systems, GILDEMEISTER energy storage GmbH (GILDEMEISTER).

VSUN has 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 vanadium flow battery, 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. 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.

AVL's Managing Director Vincent Algar said that this first sale is an enormous step forward for the Company's vanadium integration strategy.

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ASX ANNOUNCEMENT

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“By achieving this sale in conjunction with the client and network operator, we can proceed with this landmark installation. Seeing is believing and the installed CellCube FB 10-100 will allow VSUN to showcase the benefits of large battery storage devices to commercial customers,” Mr Algar said.

“This includes 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.”

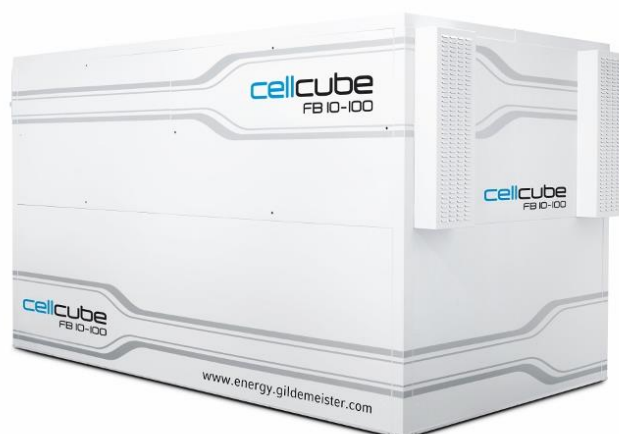


Figure 1. GILDEMEISTER CellCube FB 10-100. 20ft sea container sized energy storage system

“Working with Sun Connect and Western Power, we will bed down the installation and connection of the PV system and the CellCube to the grid. We will use our new knowledge to highlight the benefits that large flow battery systems can offer commercial customers, as well as the utilities, throughout Australia.”



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

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 VRB system.

The CellCube battery meets Western Power SWIN standards, (South West Interconnected Network). 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 is currently being filled at the GILDEMEISTER facility in Vienna and, once prepared, will be shipped to Fremantle 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.

OTHER SALES LEADS

Although VSUN has only been operating since April 2016, it has already developed 22 project leads for the potential sale of CellCube systems. Emphasis in these leads is on the large CellCube systems (FB 200-400 and larger). 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.

To support the rapid increase in interest and enquiries for CellCube systems VSUN is expanding its sales and technical team.

Background to VSUN

VSUN – renewable energy solutions – is a highly progressive, innovative energy business that has capitalised on its international connections and synergies as a wholly-owned subsidiary of Australian Vanadium Limited. In Australia, VSUN is the distributor of GILDEMEISTER CellCubes. GILDEMEISTER uses vanadium in electrolyte solution in its CellCube systems.

The GILDEMEISTER technology has large cost-saving energy ramifications for a range of industries, particularly mining, commercial, industrial and agricultural. It will significantly lower costs and improve reliability of many operations currently relying on solar power, or for companies that are looking to install it.

VSUN will show that many operations (both in urban and rural Australia) may also find it cheaper to add solar PV or wind power and GILDEMEISTER CellCube technology to their operations, rather than incur expensive network upgrade costs. The opportunities provided by this technology are significant and highlight the company's enormous potential for growth.

AVL Strategic Objectives

AVL's vertical integration strategy which is focused on vanadium, includes three pillars of activity to drive cashflow generation and shareholder value. These are:

- Growing VSUN to deliver additional vanadium battery sales into the many niches being identified in the commercial energy sector across Australia.
- The planned production and sale of high-purity vanadium electrolyte – a core component of flow batteries, to be achieved through the development of an Australian vanadium electrolyte plant.
- The progression of the Company's flagship Gabanintha Vanadium Project in Western Australia, to be achieved through the identification of cornerstone investors and the completion of feasibility studies.

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. It also contains 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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