



VSUN Energy Targets Stand-alone Power Systems Project

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ASX ANNOUNCEMENT

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Projects:

Gabanimtha – Vanadium
Blesberg, South Africa –
Lithium/Tantalum/Feldspar
Nowthanna Hill –
Uranium/Vanadium
Coates – Vanadium

Highlights:

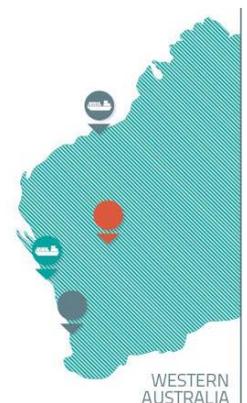
- VSUN Energy has submitted a registration of interest to Western Power for its Stand-alone Power Systems project
- 60 locations in regional Western Australia have been identified by Western Power
- Western Australian Energy Minister, Ben Wyatt, has given permission for Western Power to conduct this large demonstration project
- Vanadium redox flow batteries are becoming a key technology in the global energy story

Australian Vanadium Limited (ASX: AVL, “the Company” or “AVL”) is pleased to announce that its 100% owned subsidiary, VSUN Energy, has submitted a registration of interest for Western Power’s Stand-alone Power Systems (SPS) project.

Western Power has been authorised by the Western Australian Energy Minister, the Hon. Ben Wyatt MLA, to conduct a large demonstration of SPS within part of the South West Interconnected Network. 60 locations within the state have been identified by Western Power. This project will build upon the previous SPS trial in 2017, where 6 properties in the Great Southern were provided with SPS. Lessons learnt from this initial rollout will be integrated into the larger project.

SPS are hybrid systems which are not physically connected to the existing network. The systems use a combination of renewable energy, batteries and back-up diesel generators, enabling generation, storage and reliable delivery of power. They are particularly useful in areas on the fringe of the existing grid where power is not as stable, or in remote, off-grid locations.

Vanadium redox flow batteries (VRFB) have particular strengths which are useful in SPS. The ability to store large amounts of energy



● GABANINTHA ● PERTH
● PORT HEDLAND ● PORT GERALDTON

means that there is a reduced reliance on diesel, if sized correctly diesel can be removed altogether. VRFB are non-flammable, meaning that they are ideally suited to the many bushfire prone areas in Western Australia. The systems can be cycled as many times as the customer wants, without degradation to performance and be charged and discharged at the same time, allowing them to form the basis of the grid with their integrated inverters. They provide 4+ hours of energy, the battery VSUN Energy installed at a native tree nursery in Busselton in late 2016 (see ASX Announcement dated 18th May 2016) is a 10kW power system with 100kWh of energy storage, meaning that it can deliver 10kW for 10 hours, or with a smaller load, provide 5kW continuously for 20 hours. The system in Busselton has not needed to draw energy at all from the grid in over a year and a half of operation, in spite of cloudy periods during the winter. It is still performing in the same manner as it was when it was installed.

VSUN Energy has relationships with a variety of manufacturers of VRFB around the world and is able to provide solutions ranging from the small domestic through to multi-megawatt systems. The growing number of manufacturers and general interest in the vanadium market is testament to a growing knowledge and understanding of the systems and their strengths.

Managing Director, Vincent Algar, comments “we have been in talks with Western Power since before we installed the battery in Busselton, members of the Western Power staff have visited the battery and been provided with analytical data to further their understanding. As a distributor rather than generator, it’s hard for Western Power to install renewable energy systems without regulatory change. It’s great to see WA Energy Minister, Hon. Ben Wyatt MLA supporting the renewable energy industry and allowing this type of project to proceed. It will provide valuable lessons to Western Power and the wider energy industry. Vanadium batteries aren’t a panacea, but they have their place in the energy market. With recently announced projects at Monash University and the University of Adelaide, we are starting to see this Australian invented technology being embraced in its home country.”



Figure 1 Vanadium redox flow battery in Busselton, Western Australia

For further information, please contact: **Vincent Algar, Managing Director**