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5 July 2018

New Generation Electrolyte Developed for V-KOR Vanadium Battery

- KORID Energy has developed a new generation electrolyte that improves energy density up to 25%, significantly improving electrolyte efficiency and cost performance
- 30-50% of vanadium battery cost can be attributed to the cost of electrolyte, making vanadium raw material supply and electrolyte efficiency critical to commercial success
- The latest electrolyte technology from KORID provides significant improvements in temperature stability and power density
- Protean's vertical integration strategy aims to take advantage of the growing grid scale electrical storage market in Australia and globally

Protean Energy Limited (**Protean** or the **Company**) is pleased to update the market with the latest developments in V-KOR vanadium redox flow battery (**VRFB**) electrolyte technology delivered by Protean's 50% owned subsidiary, KORID Energy (**KORID**).

New Generation Electrolyte Technology

The recent development of a new generation vanadium electrolyte by KORID has achieved improvements of up to 25% in energy density, which represents a significant increase in electrolyte efficiency and cost performance. This technical achievement has material positive implications for the V-KOR battery's levelised cost of storage given that electrolyte represents 30-50% of the total energy storage system cost of VRFBs.

KORID is also researching production of electrolyte using ammonia metavanadate (NH_4VO_3) which has the potential to markedly reduce the production cost of electrolyte.

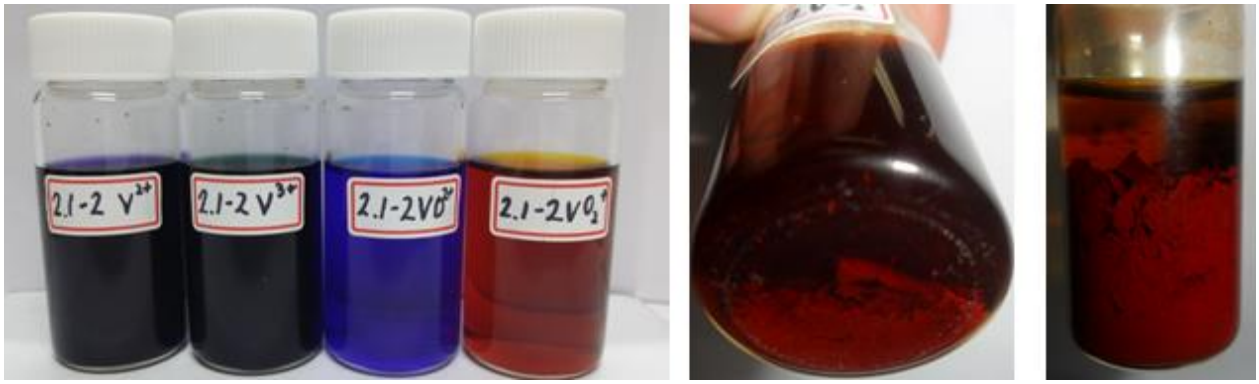

Figure 1**: **Temperature stability testing being conducted at KORID Energy's Seoul, Korea facility.

KORID owns a suite of patents covering the battery stack and intellectual property on electrolyte technology developed to date, with US$3 million spent in research, development, testing and IP protection. KORID has also recently completed testing of over 3,000 cycles on a V-KOR 5kW stack, representing 9 years of full daily cycles with no significant degradation of performance. The majority of the cost related to VRFB systems is within the vanadium electrolyte and is resultant in the extensive research into the optimisation of electrolyte technology as a high priority.

About the V-KOR Vanadium Battery Systems

The Vanadium Redox Flow Battery (VRFB) was invented over 20 years ago, and there have been several implementations of this technology in various countries. The V-KOR systems use vanadium ions in different oxidation states to store energy in the form of 2 liquid electrolytes. VRFBs are proven to have excellent durability and life spans up to 20 years.

An important attribute of VRFB systems is that their energy storage capacity is independent of the power rating, allowing them to be designed for highly specific energy and power requirements and making them well suited to applications with large energy storage capacity specifications. These batteries are currently used for grid scale energy storage applications where large-scale and long duration electrical energy storage is required. They are an ideal solution for rapidly growing intermittent renewable energy generation sources such as solar and wind.

V-KOR was developed in response to the growing demand for more efficient energy storage solutions to support intermittent renewable energy production. The Company offers battery solutions built to order for commercial, industrial and grid scale applications.

V-KOR is a commercial stage technology that offers a rechargeable flow battery with the ability to store high levels of energy for longer and with a greater life expectancy than existing battery solutions. The V-KOR technology and batteries are scalable with built solutions from 2kW to 5MW or larger to suit customer requirements.

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ABOUT PROTEAN ENERGY LIMITED (ASX: POW)

Protean Energy Limited is an energy company focused on the commercialisation of vanadium battery energy storage systems. The Company is also developing a multi-mineral project in South Korea through its 50% holding in Stonehenge Korea Limited (SHK). SHK is a JV company with two KOSDAQ-listed industry partners being DST Company Ltd (DST) and BHI Co Ltd (BHI). SHK owns 100% of the rights to 3 projects in South Korea, including the Company's flagship Daejon Vanadium Project.

For further information, see www.proteanenergy.com or phone: T: + 61 8 9481 2277