

Margaret Lake Progresses Reliable and Affordable U.S. Energy Storage

28.05.2020 | [ACCESS Newswire](#)

Company Evaluating New Lubrizol Electrolyte that Would Bring Reliability and Scale to Margaret Lake's Vanadium Battery Solutions

VANCOUVER, May 28, 2020 - Margaret Lake Diamonds Inc. (TSXV:DIA)(FRA:M85)(OTC PINK:DDIAF) is pleased to announce as part of its efforts to accelerate reliable energy storage through vanadium redox flow batteries (VFRB), the company will soon begin testing a new vanadium electrolyte from The Lubrizol Corporation.

This electrolyte is essential in holding energy and electricity inside the battery, but it has typically been available only through non-domestic sources, carrying significant transportation costs, tariffs and time-intensive handling processes.

Margaret Lake's VFRBs provide value for both utilities and commercial business. For utilities, the batteries bring reliable energy storage, ensuring energy that is generated is captured and not wasted, reducing the strain on the power grid by dispersing energy from renewable sources. For businesses, the battery allows the capture of energy when it is more affordable or available, enabling not only a sustainable power source but cost savings by supplementing traditional energy sources.

Vanadium Electrolyte

The Vanadium electrolyte is core to the VFRB, and the unique physical characteristics of vanadium are the primary reason behind the batteries' high level of consistency and performance, lack of degradation over time, and long life compared with lithium ion batteries. The electrolyte makes up 35% of the cost of the VFRB for four hours of energy storage and 50% for eight hours of energy storage, making U.S.-based supply partners critical in enabling affordable VFRBs for U.S. installations.

Battery Design

The Company's proprietary Vanadium Flow Battery has been developed, tested and is patent-protected. The flow battery design allows for limitation of storage only based on the capacity of the electrolyte tanks versus the fixed capacity of lithium-ion. The battery is non-flammable and non-explosive. There is no degradation as a result of cycling, partial charging, or time with a 100% depth of discharge and projected lifetime of 20 years. Battery efficiency is currently rated at up to 80%. The battery is scalable into the MW-range through simple parallel connection of multiple units. The systems are shipped in self-contained weatherproof and securely protected housing. The systems can be managed and maintained by remote or online maintenance through intelligent battery management. Temperature management and climate-controlled containers eliminate weather impact on energy efficiency. The systems are designed for indoor or containerized deployment in twenty- or forty-foot containers. The 40-foot design has a capacity of 50kW output, 200kWh storage (Figure 1).

Figure 1 - 40Ft Container Format

Figure 2 - Cell Stack

Grid Scale Mass Storage

Designs have been completed for a 3.6MW output / 14.4kWh-28.8kWh energy storage system to meet the

growing demand for grid scale and renewables applications. There are a variety of applications to support both renewables and existing infrastructure, as well as energy security.

Placing batteries at substations or near high-demand areas reduces need for new infrastructure, such as transmission lines, substation capacity, and traditional power plants or hydro dams. The power is often wasted in the night only for a lack of battery capacity. Grid scale energy storage systems allow for charging at night during very low demand times (off peak) and release that energy during the day during peak demand, reducing the need for new transmission lines or power plants. This both increases overall efficiency and provides backup/standby power for energy security and a robust and efficient energy infrastructure. The same concept may be applied to time of day load shifting for renewables.

Factory

Margaret Lake is in commercial negotiations for a U.S. factory site in the North East. Factory blueprint, process flow, equipment and personnel requirements have been completed for a three-phase construction of a Vanadium Flow Battery Factory with an initial Phase I annual output capacity of 50MW and 200MWh of storage. The factory is a joint venture between Margaret Lake and KORID Energy of Korea; KORID is partially owned by DST Inc. (KOSDAQ: 033430) a factory automation and process equipment manufacturer serving the automobile, food processing, mining and energy storage industries.

Remarks regarding the Joint Venture by Former Maine Secretary of Energy John Kerry and former New York Governor George Pataki are available at <https://youtu.be/KIre7TMNb5k>.

Margaret Lake Diamonds

[Margaret Lake Diamonds Inc.](#) (TSX.V: DIA) is a Canadian technology and mineral exploration company focused on construction of Vanadium Redox Flow Battery Factory in the United States and Vanadium Exploration Globally. The Company continues to maintain an interest in the Diagrass Diamond property located approximately 50km from the Diavik and Ekati Diamond Mines in the Northwest Territories of Canada.

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result of various factors. The reader is referred to the Company's public filings for a more complete discussion of such risk factors and their potential effects which may be accessed through the Company's profile on SEDAR at www.sedar.com.

SOURCE: [Margaret Lake Diamonds Inc.](#)

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