Margaret Lake Announces New Vanadium Redox Flow Battery Models

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VANCOUVER, March 10, 2020 - Margaret Lake Diamonds Inc. ("Margaret Lake" or the "Company") (TSX.V:DIA)(FKT:M85)(OTCPINK:DDIAF) is pleased to announce specifications for four models of its Vanadium Redox Flow Battery energy storage systems ("VFRB-ESS"), and is now in pre-sales and booking orders for projected 2021 delivery. The Company encourages interested system integrators and utilities to contact them for further details.

"We believe our systems will appeal to a wide variety of system integrators and utilities in the renewable energy and power distribution markets, as they have been designed for commercial, industrial, and utility scale operations," said Jared Lazerson, President and CEO of Margaret Lake.

The Company's models now offered for pre-sales are the 25kW / 100kWh and 50kW / 200kWh long life modules in 20ft and 40ft container format as well as scalable 5kW and 10kW indoor and outdoor modules. The Company offers utility level modules of 3.6MW / 14.4MWh. Storage systems are available in 4 and 8 hour capacities. The energy storage systems have been designed for the commercial, industrial, and utility scale storage for renewables, peak shaving, and infrastructure applications. Remote management and monitoring are available for all systems.

VRFB Energy Storage Systems

ELECTRICAL DETAILS	
Energy Capacity	100kWh
Nominal Power	25kW
Depth of Discharge Allowed	100%
Inverter Capacity	25kW
Output Voltage :	415V/3phase/50Hz/60Hz
Cycle Life	?15,000
KORID WARRANTY	
DC-DC Efficiency	78%
Cycle Efficiency	75%
AC-DC-AC Efficiency	70%
ENVIRONMENTAL	
Operating Conditions	0~50?, @ 90% humidity
Enclosure Rating	IP 54
Electrolyte Rating	Non - Flammable

Figure 1 - Inside view of 20 foot container

ELECTRICAL DETAILS	
Energy Capacity	200kWh
Nominal Power	50kW
Depth of Discharge Allowed	100%
Inverter Capacity	50kW
Output Voltage :	415V/3phase/50Hz (60Hz)
Cycle Life	?15,000
KORID WARANTY	
DC-DC Efficiency	78%
Cycle Efficiency	75%
AC-DC-AC Efficiency	70%
ENVIRONMENTAL	
Operating Conditions	0~50?, @ 90% humidity
Enclosure Rating	IP 54
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Figure 2 - 40Ft Container Format

Factory

The Company is currently reviewing and completing studies on a limited number of locations in the North East US for manufacturing. Factory footprint, process flow, equipment and personnel requirements have been completed for an initial Vanadium Flow Battery Factory with an annual output capacity of 50MW and 200MWh of storage.

Battery Design

The 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 eliminates weather impact on energy efficiency.

The battery is composed of four primary components: electrolyte tanks, cell stacks, power conversion system (including control system, communications, inverter, electrical wiring, etc.), and pumps / balance of plant equipment (Figure 4). The systems are designed for containerized deployment in twenty or forty foot containers. The 40ft design has a capacity of 100kW output, 400kWh storage.

Figure 4

Cell Stack

To date four cell stacks have been manufactured including 2.5kW, 5kW, 10kW, and 25kW (Figure 5). KORID has developed and is currently testing a 50kW cell stack for high usage industrial and gird scale utility and renewables applications.

Figure 5

Grid Scale Mass Storage

Designs have been completed for a 3.6MW output system (Figure 6) to meet the demand for grid scale 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 can be applied to time of day load shifting for renewables.

Figure 6

Joint Venture Transaction

For more information, refer to the Company's news release dated January 23, 2020. This press release refers to a joint venture to construct a factory (the "Factory") in the United States for the purpose of producing Vanadium Redox Flow Batteries and energy storage systems. The joint venture is between the Company and KORID Energy of Korea; KORID is partially owned by DST Inc. (KOSDAQ: 033430). There is a risk that the transaction will not be accepted or that the terms of the transaction may change substantially prior to acceptance final acceptance by the TSX Venture Exchange.

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 .

About KORID Energy and DST Inc.

KORID Energy is partially owned by DST Inc., a publicly traded company listed on the KOSDAQ Exchange in South Korea. It operates the following businesses: Automation Machinery, Mining and Metals Development and Processing, along with other diversified businesses. Its products and services include energy storage technologies, equipment for the automobile components industry, food processing equipment, mineral development and processing, rental services, and others. The company was founded on May 11, 1995 and is headquartered in Changwon-si, South Korea. For more information visit www.ds-t.co.kr.

About Margaret Lake Diamonds

Margaret Lake Diamonds Inc. (TSX.V: DIA) is a Canadian technology and strategic metals 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 Diagras Diamond property located approximately 50km from the Diavik and Ekati Diamond Mines.

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Neither the TSX Venture nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture) accepts responsibility for the adequacy or accuracy of this release.

Forward-Looking Statements

This press release contains forward-looking information or forward-looking statements (collectively "forward-looking information") within the meaning of applicable securities laws. Forward-looking information is typically identified by words such as: "believe", "expect", "anticipate", "intend", "estimate", "potentially" and similar expressions, or are those, which, by their nature, refer to future events. The Company cautions investors that any forward-looking information provided by the Company is not a guarantee of future results or performance, and that actual results may differ materially from those in forward-looking information as a 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.

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