Vanadium Could End up Taking a Lead in Energy Storage for Grid-connected Applications

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FN Media Group Presents USA News Group News Commentary

USA News Group - While the Li-ion energy storage market has seen unprecedented growth, to the point of element shortages, Vanadium may be the better technology for several grid-connected applications. It now appears that the vanadium has a shot a taking the lead in energy storage for grid-connected applications, large-scale energy storage operations, and any operation whose chief concerns are sustainability and safety.

Vanadium, an element previously used to create strong steel alloys, is now being recognized as a key component in safer, longer lasting batteries. Currently, there are no significantly active vanadium mines in North America and even with the surge in demand, most supply still comes from China, Russia, or Africa.

As the world begins to rely more and more on renewable sources of electricity, long-term grid storage is proving to be a minor obstacle to the success of this transition. Vanadium batteries could be a realistic solution. In turn, vanadium resource companies are already benefiting from the new focus on vanadium supplies and technology including Stina Resources Ltd., Largo Resources Ltd. (OTC: LGORF) (TSX:LGO), Sparton Resources Inc., (TSX-V: SRI), and Glencore plc (OTC: GLNCY) (LSE:GLEN).

One source for a total vanadium solution may come from newcomer Stina Resources Ltd.(OTC: STNUF) (CSE: SQA). Until just the last year, this emerging company was primarily concerned with providing the Vanadium and electrolytes for these Vanadium Redox Batteries (VRBs). Now, with two major acquisitions in hand, they are offering a complete VRB solution for grid-connected energy storage.

WHY VANADIUM MAY BE BETTER FOR STORAGE

Today, vanadium batteries that have been in use for a decade are expected to last 10 to 20 more years. Likewise, new vanadium battery formulations are expected to see 20 to 30 years virtually maintenance free and last much longer than that (as many as 10 additional years) with few anticipated problems.

These batteries are also incredibly safe. They are non-flammable and have demonstrated no known risk of exploding.

As an example, Stina Resources' CellCube solution offered through its new Enerox subsidiary takes these advantages even farther. The cube design is set up to allow expansion of capacity to be as easy as plugging in another unit. The batteries can be completely discharged with no harm to the unit or any power supply attached to it. They are also extremely durable; climate will not affect their operation, and they can operate at their highest output levels for extended periods with no ill effects.

STINA RESOURCES GOES ALL-IN ON VANADIUM GRID STORAGE

Stina Resources is one of the few vanadium companies offering full vertical integration, and one of the most comprehensive. Their mining operation was the core of their business until fairly recently. As such, it is well-developed.

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Stina owns more than 4,000 acres of pure play vanadium mining area in Nevada. The land is only about 10% explored and is adjacent the Gibellini project which consists of 6,600 acres and has a resource of over 130 million pounds of vanadium. This area is possibly the largest deposit in North America.

But more prominently, two recent acquisitions have solidified their footing as a force in the vanadium battery production and technology space.

In 2018, Stina acquired Gildemeister Energy Storage. Now named Enerox, what was Gildemeister Energy Storage began as an offshoot of a research institute. Due to its foundations in the research arena, Enerox retains more than a dozen energy-storage patents, many of them involving vanadium batteries, their formulations and components.

With all of this put together, Stina is now able to produce their own resources, manufacture batteries, as well as implement and maintain them. It appears that there is no step in this VRB production and supply process that the company doesn't control.

LONGER LIFE VANADIUM COULD OUTSHINE EVEN LITHIUM

Right now, vanadium batteries are taking a back seat to Li-ion. However, with as quickly as Li-ion batteries wear out, and as fast as the world is using up the necessary components to create them, it likely won't be long before vanadium batteries begin earning their due credit.

Already, the grid-connected energy space is one place where vanadium batteries are becoming a first choice. The microgrid market energy storage market alone is expected to reach well over \$22 billion in the next 8 years.

In a relatively short period of time, VRB technology has been installed in well over 100 locations around the world, with a heavy focus in its home territory of Northern Europe.

VRBs are non-flammable, environmentally friendly, and have much, much longer life-spans-they last more than 10,000 cycles, and maintain 90% of their capacity over 20 years.

With these promising new advances, VRBs have captured the energy sector's full attention. Look for innovations and a considerable focus on VRBs and vanadium resources on the immediate horizon.

POWER GRID PLAYERS OF INTEREST INCLUDE

<u>Largo Resources Ltd.</u> (OTC: LGORF) (TSX:LGO) - though more interested in the vanadium supply and mining side of the equation, Largo Resources still has the ability to compete given their size and the fact that they own so many large mines in a number of different regions.

<u>Sparton Resources Inc.</u> (TSXV: SRI) - Sparton Resources is another Canada-based company with roots in mining. However, like Stina, they plan to move further into the vanadium battery production space. Currently, they produce mostly smaller capacity batteries. Their newest technology allows for several megawatts of storage.

Glencore plc (OTC: GLNCY) (LSE: GLEN) - Glencore is a commodity trading and mining company. They are one of the world's leading producers or vanadium, having invested in the practice of mining vanadium for its own value early on. They have taken a similar role in the mining and production of cobalt.

For a more in-depth look into SQA and the vanadium battery space you can view an in-depth article at USA News Group:

http://usanewsgroup.com/2018/04/19/vanadium-batteries-are-ready-to-challenge-the-lithium-ion-status-quo/

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