

Zinc8 Energy Solutions

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Zinc8 Energy Solutions advancing low-cost battery and forging new market amid changing energy world

- Unique zinc-air flow battery technology, which can be readily scaled up
- Technology protected with many patents already issued
- Major new project for New York state

What Zinc8 Energy Solutions does:

Zinc8 Energy Solutions (CSE:ZAIR), founded in 2011, believes it is redefining long-duration energy storage, with its low-cost Zinc-Air battery offering a 20,000 hour operating life and over eight hours of storage.

The global rise in electricity from renewable sources has led to increased demand for advanced batteries that can be used to firm this intermittent supply.

Zinc8 Energy Solutions has developed zinc-air flow batteries as an alternative to lithium-ion batteries, which can be used in applications that require 'long duration, high-capacity' storage.

Its batteries are said to meet a need in both renewables storage and in industry and grid-scale opportunities in power acquisition and distribution. They are also a cleaner and steadier way of providing and acquiring power.

Potential uses include storing current from renewable energy sources such as wind or solar; commercial, industrial backup to replace diesel generators; industrial scale, on-demand power for peak shaving services to save grid costs; and grid-scale energy storage for energy trading.

There are three components to the system. Power from the grid or a renewable source comes into the 'zinc regenerator', where oxygen is released as a by-product. Zinc particles are then flowed to the 'storage tank' and maintained in potassium hydroxide (KOH) electrolyte until required.

Whenever power is needed, zinc particles are then sent to the 'power stack', recombining them with oxygen to generate electricity. The zinc oxide (ZnO) by-product is returned to the storage tank for later regeneration.

The technology, which has 20 issued US patents with six more pending, can be used in a wide-range of ways, including in renewable sources such as wind and solar, but also to replace diesel generators and for grid-scale storage.

The system is designed to deliver power in the range of between 20kW and 50MW and energy storage in the range of between 120kWh and 1GWh over extended periods.

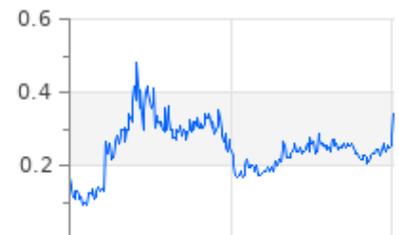
To underline potential advantages, compared to a lithium-ion (Li-ion) battery system, the firm has said that the cost per additional kilowatt hour is US\$10 for the MGX system compared to around US\$400 for Li-ion.

Energy in the system is also stored in electrolytes, which is limited only by the size of the tank and the amount of fuel

Price: 0.4

Market Cap: \$36.66 m

1 Year Share Price Graph



December 2019 June 2020 December 20

Share Information

Code: ZAIR

Listing: CSE

52 week High Low
0.43 0.145

Sector: Renewable Energy

Website: zinc8energy.com

Company Synopsis:

Zinc8 has assembled an experienced team to execute the development and commercialization of a dependable low-cost zinc-air battery. This mass storage system offers both environmental and efficiency benefits. Zinc8 strives to meet the growing need for secure and reliable power.

action@proactiveinvestors.com

provided, whereas in lithium batteries, storage within electrodes is limited by the size and number of electrodes. The system also has no fire hazard but the lithium-ion one does.

Last September, the group appointed a new CEO and president, Ron MacDonald. He had served as a director of the company since February last year and brought over 35 years' experience from both the private and public sectors. The appointment followed the company's name change from MGX Renewables Inc.

How is it doing:

At the beginning of this year, Zinc8 struck a major deal with the New York Power Authority (NYPA) to install a 100 kilowatt, or one-megawatt hour, zinc-air battery energy storage system in New York state.

NYPA is the US's largest state public power organization. It came after the company's battery was selected as a winner after the utility called for partnerships with early-stage cleantech startups to help modernize the power system with more distributed energy resources and grid edge solutions.

NYPA will contribute US\$2.55 million to the project over three years, Zinc8 said, and the system will be installed at a demonstration site for one of NYPA's existing commercial and industrial customers, while other additional demonstration sites are considered.

Zinc8 chief Ron MacDonald called the agreement a "milestone" in the firm's path to full commercialization and said it not only contributed to the rapid advancement of clean energy in New York State, but also opened "the door for Zinc8 to deploy its technology into the broader utility market".

This major deal came a few months after one in October, 2019, which saw the system deployed at a low-energy-footprint estate in Surrey, British Columbia, Canada.

The residence known as '75 house' was designed by renowned architect Omer Arbel and uses a technique of pouring concrete into fabric formwork deployed within minimal plywood rib structures, yielding walls and columnar roof forms.

Inflection points:

- More deals, projects
- Advances in technology

What the boss says:

Zinc8's CEO Ron MacDonald chatted to Proactive following news of the huge New York Power Authority deal, which, he explained, came after New York Governor Andrew Cuomo's earlier calls for 3 GW of energy storage by 2030 and new transmission capacity amid today's changing energy landscape.

"There is a fundamental shift in how energy is generated, moved and stored," said MacDonald, citing the example of the rapid rise of electric vehicles, which are a green creation, but they (the cars) still need to be charged up (by energy).

"Moving the energy from the gas tank over to the wires is creating a huge problem and it's global," said the company boss, adding that his firm helps to address this issue. It's (the New York deal) validating what I've been saying for about a year now, that we're forging a new market that currently does not exist and it's because of our technology."

He expects the New York project will take around two years to build out and then: "We want to hit the market on a commercial basis in three years - that's a really short timeline."

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Contact us +44 (0)207 989 0813 action@proactiveinvestors.com

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