

TreadStone cuts flow battery component costs up to 53%

DOE-funded DuraC coating cuts electrode and plate costs, the two most expensive flow battery components

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/EINPresswire.com/ -- [TreadStone](#)

[Technologies](#) Inc., a Tier 1-ready supplier of patented precision coatings for fuel cells, electrolyzers and flow batteries, announced it has advanced into Phase 3 of a U.S. Department of Energy-funded program to cut the cost of flow battery electrodes and bipolar plates by up to 53%. Phase 3 is the program's commercialization stage.



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The program, supported by the DOE's Advanced Materials and Manufacturing Technologies Office, known as [AMMTO](#), centers on TreadStone's proprietary carbon coating, [DuraC](#). Applied to metal substrates through roll-to-roll or spray manufacturing processes, DuraC is built to replace the costlier carbon-graphite bipolar plates and electrode substrates used across the flow battery industry today, at equal or better performance.

DuraC's case rests on two things: durability and efficiency. The coating is engineered to hold up in some of the harshest electrochemical environments in energy storage, including bromine-based chemistries, while maintaining

the low contact resistance and high energy efficiency flow battery systems need over a full service life. TreadStone is validating the coating in parallel across multiple chemistries: zinc-bromine, all-iron and aqueous organic. That makes DuraC electrolyte-agnostic by design.

“There's a misconception that carbon means cheap,” Eric Shepardson, President and Chief

Operating Officer of TreadStone Technologies, said. "It doesn't. What it means is it is durable enough to survive some of the toughest chemistries we test against, including bromine, without giving up performance. Durability, efficiency and a cost reduction of up to 53% on the two most expensive components in a flow battery stack: that's a combination worth paying attention to."

As part of Phase 3, TreadStone is building a flow battery system for independent testing and validation at Pacific Northwest National Laboratory, known as PNNL, a proof point ahead of commercial deployment.

Flow batteries are widely seen as the leading technology for long-duration grid storage, four hours or more, a category lithium-ion cannot serve economically at scale. Cost and component durability have been the two barriers holding back wider deployment, and electrode and plate coatings are the most direct lever for closing that cost gap. A DOE-funded program reaching a commercialization phase is a meaningful signal, meaning a rigorous federal funding body has reviewed and funded the underlying science.

The DuraC program builds on TreadStone's broader track record in corrosion-resistant, conductive coatings, developed originally for fuel cells and electrolyzers and now extended into flow batteries. Since 2010, the company has been awarded more than \$12 million in competitively bid U.S. government grants, and its research partnerships include DOE national laboratories such as Sandia National Laboratories, Oak Ridge National Laboratory and Pacific Northwest National Laboratory.

About TreadStone Technologies

TreadStone Technologies Inc. develops patented, high-performance corrosion-resistant coatings for electrochemical energy systems and advanced manufacturing platforms. The company's Direct Particle Binding technology, known as DPB, enables customers to reduce material costs, extend component lifetimes and improve system efficiency across fuel cell, electrolyzer, flow



Eric Shepardson, President and COO



TreadStone Technologies Inc. Logo

battery, aerospace and defense applications. TreadStone holds 67 patents and maintains relationships with the U.S. Department of Energy and Tier 1 aerospace and defense customers. The company is headquartered in Monmouth Junction, New Jersey.

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