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ESS Inc. Announces the Energy Center™, a Flexible, Scalable and Environmentally Sustainable Long-Duration Battery Storage System

Utility-scale energy storage solution designed to meet a wide range of project requirements with configurable power and energy levels

Wilsonville, OR - February 10, 2021: ESS Inc., a manufacturer of long-duration iron-based flow batteries for commercial and utility-scale energy storage applications, announces the launch of its next-generation storage solution, the Energy Center™. The Energy Center is a flexible utility-scale energy storage system designed and sized to the specific needs of front-side-of-the-meter use cases and larger commercial and industrial facilities. Based on the company's second-generation, 12+-hour duration flow battery power module, the Energy Center's design approach leverages and builds upon the company's proven containerized storage structure to deliver compelling value for asset owners and the lowest environmental impact to the planet.

In contrast to the company's field-proven Energy Warehouse, a standalone 75 kW/500 kWh containerized system, the Energy Center can be tailored and scaled to accommodate specific projects and enable the stacking of a range of storage applications. The systems can be configured in different power capacities, starting at 3 MW, with energy durations ranging from 6 to 16 hours, to support large-scale renewable energy projects, provide transmission- and distribution-level services, and for utility peaker plant replacement applications. Underscoring their sustainable value and low operating cost, Energy Centers have a projected operating life of approximately 25 years without performance degradation.

"As we are seeing market requirements for utility-scale energy storage moving from traditional 2-to-4-hour lithium-ion-based capability to longer 8-to-12-hour durations that emphasize flexibility and long life, it is clear that proven and practical flow batteries offer key design and cost advantages over lithium," stated Mark Burton, Senior Engineer for Energy Storage at Enertis Solar. "We have been working closely with ESS on optimizing the overall design of the Energy Center solution to meet the unique site design and balance of plant requirements for these large, long-duration battery systems."

The Energy Center utilizes an environmentally benign and sustainable flow battery chemistry composed of earth-abundant iron, salt, and water, and containing no hazardous chemicals or rare-earth metals. The iron flow battery presents no fire, chemical, or explosive risk, eliminating the need for fire suppression, secondary containment, and hazmat precautions, resulting in the greenest, most sustainable, and easiest-to-permit storage technology available.

David Brown, Senior Principal and Co-founder of Obsidian Renewables, one of the largest developers of solar power facilities in the Pacific Northwest, commented, “A rapid and dramatic shift is occurring that favors pairing larger-scale battery installations with renewables. These projects are finding improved overall customer value from longer duration, daily cycling and the flexibility to adapt to evolving use cases that are not constrained by cycle life. We are excited about the economics, operating life and design flexibility that the ESS Energy Center solution offers.”

In an independent assessment conducted at the University of California-Irvine, scientists evaluated the environmental impact of three different flow battery chemistries, to which was added supplementary information analyzing four different lithium-ion designs. Researchers assessed production processes and end-of-life stages and compared results, measuring global warming potential, ozone depletion potential, acidification potential, freshwater usage and other environmental criteria. Among flow batteries, ESS Inc.’s all-iron technology presented the lowest overall environmental impact compared to batteries using vanadium and zinc. They’re also significantly less harmful to the environment than lithium-ion batteries, thanks to earth-abundant materials, far longer operating life, and ease of end-of-life material recycling.

“We are very pleased to introduce and deliver the only truly environmentally safe, highly flexible and customizable, long-duration storage solution to the market,” said Craig Evans, ESS Inc. President and CEO. “The availability of a low-cost, ultra-long-life energy storage solution with the lowest environmental impact will help reduce customer costs and meet the most stringent sustainability objectives. Based on the rapid and continued growth of renewable resources that are driving energy markets, long-duration storage solutions like ours will help catalyze the energy transition and tackle climate change head on.”

According to the industry’s top research firms, the market for long-duration storage on a global basis is projected to grow exponentially in the coming decades. In California alone, the state will need to deploy between 45-55 GW of long-duration energy storage to meet its goal of eliminating greenhouse gas emissions (GHG) from electricity by 2045.

ESS Inc.’s pioneering energy storage solutions include a comprehensive 10-year insurance policy covering the product performance. Backed by Munich RE, the world leader in the development of new insurance solutions for climate-friendly technologies, this policy provides customers with the assurance of a long-term performance guarantee.

About ESS, Inc.

ESS Inc. designs, builds and deploys the most environmentally sustainable, lowest-cost, iron flow batteries for long-duration commercial and utility-scale energy storage applications requiring from 4 to 16 hours of flexible energy capacity. The Energy Warehouse™ and Energy Center™ use earth-abundant iron, salt, and water for the electrolyte, resulting in an environmentally benign, long-life energy storage solution for the world's renewable energy infrastructure. Established in 2011, ESS Inc. enables project developers, utilities, and commercial and industrial facility owners to make the transition to more flexible non-lithium-ion storage that is better suited for the grid and the environment. For more information visit www.essinc.com.

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