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Ameresco Completes First Phase of Department of Defense Funded Flow Battery Investigation

Initial findings from three-phase research on advanced energy storage systems published in partnership with the Environmental Security Technology Certification Program

FRAMINGHAM, Mass.--(BUSINESS WIRE)-- [Ameresco, Inc.](#), (NYSE: AMRC), a leading energy efficiency and renewable energy company, today announced the completion of phase-one of a multi-stage investigation of how flow battery technology could support microgrids with the Department of Defense (DoD). Conducted in partnership with 2ndPath Energy, this research is funded by the U.S. Department of Defense's Environmental Security Technology Certification Program (ESTCP), which promotes the transfer of innovative technologies from proof-of-concept to field or production use.

Energy storage has become a critical part of Ameresco's innovative microgrid solutions, with lithium-ion technology serving nearly all of today's distributed energy storage needs. However, alternative technologies such as flow batteries offer the potential for unique opportunities – particularly related to very long duration capabilities with reduced degradation over life. This ESTCP project offered a well structured and low risk method to evaluate vanadium-redox flow battery technology in a controlled environment, offering valuable feedback to the DoD and industry.

In particular, Ameresco's ESTCP-funded project aims to assess, validate, and demonstrate the operational effectiveness of vanadium-redox flow battery storage technology and quantify the extent to which it could replace or significantly reduce the need for diesel generators in military microgrids. Phase-one work involved analytical modeling and simulation efforts, the findings of which are published in a report titled "[Demonstrating the Benefits of Long-Duration, Low-Cost Flow Battery Storage in a Renewable Microgrid.](#)" The work also studied the economic benefits that flow batteries could provide through utility billing savings and energy market participation at five installations spread across different geographic regions of the United States.

"We are seeing growing interest from our Federal Government customers in how new energy storage technologies could complement lithium ion batteries to support their mission objectives," said Nicole Bulgarino, EVP and General Manager of Federal Solutions at Ameresco. "I commend our Ameresco team involved in this important research and our project partners who have helped make it possible. These findings and the future work to follow allow us to better understand the technology and provide the best long term solutions to our customers, while advancing the state of the art of energy storage technology within industry."

Phase-two of this research project is scheduled to begin in late 2020 and will involve

Hardware in the Loop (HIL) testing in partnership with the National Renewable Energy Laboratory (NREL) in Golden, Colorado. This work will physically test flow battery equipment in a laboratory environment to validate Phase 1 observations while better characterizing the performance of a flow battery in a sequence of grid tied and islanded scenarios. If successful, Ameresco seeks to complete a third and final phase in the way of a field demonstration.

The goal of the ESTCP program is to identify and demonstrate the most promising, innovative and cost-effective technologies that will help meet the high-priority environmental requirements of the Department of Defense. Projects like this add to the body of knowledge available on advanced energy technologies like flow batteries. Ameresco looks forward to reporting on the outcome of this investigation and future developments.

To learn more about Ameresco's research or download a copy of the phase-one report, [click here to visit the ESTCP website](#).

About the Environmental Security Technology Certification Program

Environmental Security Technology Certification Program (ESTCP) is the DoD's environmental technology demonstration and validation program. The Program was established in 1995 to promote the transfer of innovative technologies that have successfully established proof of concept to field or production use. ESTCP demonstrations collect cost and performance data to overcome the barriers to employ an innovative technology because of concerns regarding technical or programmatic risk, the so-called "Valley of Death." The Program's goal is to identify and demonstrate the most promising innovative and cost-effective technologies and methods that address DoD's high-priority environmental requirements. Projects conduct formal demonstrations at DoD facilities and sites in operational settings to document and validate improved performance and cost savings. To ensure the demonstrated technologies have a real impact, ESTCP collaborates with end-users and regulators throughout the development and execution of each demonstration. Transition challenges are overcome with rigorous and well-documented demonstrations that provide the information needed by all stakeholders for acceptance of the technology.

About Ameresco, Inc.

Founded in 2000, Ameresco, Inc. (NYSE:AMRC) is a leading independent provider of comprehensive services, energy efficiency, infrastructure upgrades, asset sustainability and renewable energy solutions for businesses and organizations throughout North America and Europe. Ameresco's sustainability services include upgrades to a facility's energy infrastructure and the development, construction and operation of renewable energy plants. Ameresco has successfully completed energy saving, environmentally responsible projects with Federal, state and local governments, healthcare and educational institutions, housing authorities, and commercial and industrial customers. With its corporate headquarters in Framingham, MA, Ameresco has more than 1,000 employees providing local expertise in the United States, Canada, and the United Kingdom. For more information, visit www.ameresco.com.

The announcement of a customer's entry into a project study contract is not necessarily indicative of the timing or amount of revenue from such contract, of the company's overall revenue for any particular period or of trends in the company's overall total project backlog.

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