



Seeo Inc. Solid State Batteries for Grid-Scale Energy Storage

Project Description

Seeo and its partners are demonstrating a large-scale prototype of a solid-state electrolyte lithium-ion rechargeable battery for use in Smart Grid energy storage applications. Seeo seeks to validate this technology to address the needs of Community Energy Storage Systems—small (less than 100 kW) distributed energy storage systems alongside pad-mounted and pole-mounted transformers. The battery pack is more than a 50 percent improvement in weight and energy density; has 10-15+ year operating life with 3,000-5,000 or more cycles; has no volatile or flammable components; and will be 35 percent cheaper than existing lithium-ion batteries. This approach allows independent control over mechanical and electrical properties. The cell can withstand temperatures as high as 150°C and voltages of 10 volts without incident. An independent analysis of the environmental and economic impact of battery improvement will also be conducted.

Goals/Objectives

- Develop and deploy a prototype battery system that validates Seeo's technology
- Improve battery installation and maintenance
- Produce a plan for manufacturing and commercializing the technology at utility scale

Key Milestones

- Polymer temperature and voltage assessment complete (September 2011)
- Produce a total of 1,000 cells with optimized power and energy (March 2012)
- Finalize pack design (June 2012)
- Prototype pack assembly complete (July 2013)
- Complete prototype pack performance testing and validation (December 2013)

Benefits

- Job creation
- Electricity reliability improved
- Cost of electricity reduced
- Gasoline consumption decreased
- Greenhouse gas emissions reduced
- Global competitive edge gained by the US



Seeo 10kWh system installed in the field with a photovoltaic array



CONTACTS

Kimberly Nuhfer
Project Manager
National Energy Technology Laboratory
3610 Collins Ferry Road
Morgantown, WV 26507-0880
304-285-6544
Kimberly.Nuhfer@netl.doe.gov

Mohit Singh
Principal Investigator
Seeo Inc.
3906 Trust Way
Hayward, CA 94545-3716
510-782-7336

PARTNERS

University of California Berkeley

PROJECT DURATION

7/30/2010–7/29/2014

BUDGET

Total Project Value
\$12,392,122

DOE/Non-DOE Share
\$6,196,060/\$6,196,062

EQUIPMENT

Modified Coating Line
Stacking Machine
Pouch Forming and Sealing
Cell Cycling

DEMONSTRATION STATES

California

CID: OE0000223

Managed by the National Energy Technology Laboratory for the Office of Electricity Delivery and Energy Reliability

