



Southern California Edison Company Tehachapi Wind Energy Storage Project

Project Description

The Tehachapi Wind Energy Storage Project will be located at Southern California Edison's (SCE) Monolith Substation in Tehachapi, California and the 8MW x 4 hr (32MWh) BESS and 2 x 4MW/4.5MVA smart inverters will be housed in a 6,300 square foot facility. The project will evaluate the performance of the BESS to improve grid performance and assist in the integration of large-scale variable energy resourced generation. Project performance will be measured by 13 specific operational uses: providing voltage support and grid stabilization; decreasing transmission losses; diminishing congestion; increasing system reliability; deferring transmission investment; optimizing renewable-related transmission; providing system capacity and resources adequacy; integrating renewable energy (smoothing); shifting wind generation output; frequency regulation; spin/non-spin replacement reserves; ramp management; and energy price arbitrage. Most of the operations either shift other generation resources to meet peak load and other electricity system needs with stored electricity, or resolve grid stability and capacity concerns that result from the interconnection of variable energy resources.

SCE will also demonstrate the ability of lithium-ion battery storage to provide nearly instantaneous maximum capacity for supply-side ramp rate control to minimize the need for fossil fuel-powered back-up generation.

Goals/Objectives

- Validate the performance and effectiveness of lithium-ion technology
- Demonstrate the integration of intermittent of wind energy
- Develop a smarter, more efficient electrical grid
- Advance market readiness of utility-scale storage

Key Milestones

- Completed installation of baselining equipment (June 2011)
- Began facility construction (February 2012)
- Deployment of Energy Storage System (Q3 2013)
- Start of Measurement and Verification testing (Q1 2014)
- Completion of Measurement and Verification testing (Q1 2016)

Anticipated Benefits

- Create/retain jobs
- Improve power quality
- Increase system reliability
- Integrate more clean, renewable energy
- Foster energy independence



CONTACTS

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PARTNERS

LG Chem Ltd.
California Independent System Operator
Quanta Technology
Cal Poly Pomona

PROJECT DURATION

2/1/2010–03/31/2016

BUDGET

Total Project Value
\$54,856,495

DOE/Non-DOE Share
\$24,978,264/\$29,878,231

EQUIPMENT

Lithium-Ion Batteries
Smart Inverter
Transformers
Communication Gateway
Shunt Capacitor Bank
Phasor Measurement Unit

DEMONSTRATION STATES

California

CID: OE0000201

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