

Advanced Energy Storage Device Testing

SAND2013-9080P

Reliable & Independent Evaluations
Providing Energy Storage Solutions

The U.S. Department of Energy Office of Electricity DOE/OE supports third party analysis of stationary storage technologies at Sandia National Laboratories' testing facilities.

Projects: Scale of devices ranges from **cell formats to 1 MW systems**
Promising technologies & proposals are considered on a semi-annual basis for new projects.

Testing Objectives & Goals

- Validation of performance and life for energy storage solutions
- Focus on grid storage applications
- Provide consulting and testing services for academic, industry and government developers and manufacturers of storage solutions
- Enable validation and development
From cell, pack, and system level designs through integrated activities at our facilities
- Support subject matter experts
 - Performance battery testing
 - Abuse testing
 - Advanced modeling
 - Power electronics

Funding Considerations, Publications

*OE funding supports, or assists through cost sharing, testing and analysis of technologies performance and cycle life

***Results may be published** and/or reported at annual DOE peer-review

More information available at:

<http://www.sandia.gov/batterytesting/>

Advanced Energy Storage Device Testing

Reliable & Independent Evaluation of Energy Storage Solutions

Cell, Battery, and Module Testing & Equipment

- **CELL TESTS:**
125+ channels; 0 V to 10 V, 3 A to 100+ A
- **BATTERY to MODULE TESTS:**
14 channels from 36 V, 25 A to 72 V; 1000 A
- **Equipment** (includes but not limited to):
Temperature chambers
Millimeters, shunts and power supply
for high precision testing
Equipment for spectral impedance
IR camera



72 V 1000 A Bitrode (2 Channels)



Energy Storage Test Pad (ESTP)

System Testing

- Scalable from 5 kW to 1 MW, 480 VAC, 3-Phase Power
- 1 MW/1 MVAR load bank for either parallel microgrid, or series UPS operations
- Subcycle metering in feeder breakers for system identification and transient analysis

UPCOMING EVENTS

***** The 2014 winter Call for Proposals: 15 November 2013 – 15 January 2014**

Spring Acceptance Notifications e-mailed on 15 February 2014

**** 2014 spring Call for Proposals: 16 January – 15 July 2014**

Summer Acceptance Notifications e-mailed on 15 August 2014

Proposal guidance available: <http://www.sandia.gov/batterytesting/>

The database will be open year round for [FAST-Track Proposals](#). These should be limited in scope to less than two months of testing, and have strong justification for expedited processing.

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