



Opening Remarks

Department of Energy, Energy Advisory Committee
September 30, 2015

SCE Approach

- **Storage Technology Laboratory Evaluation**
 - Validate storage technology performance
 - Create degradation models to optimize system operation (extend life, improve business case)
- **System or Sub-system Laboratory Testing**
 - Validate system integration (from a safety and operational performance perspective)
- **Field Demonstration and Pilots**
 - Refine deployment and connection processes
 - Validate system performance and reliability in the field
- **System Deployment**
 - Extract energy storage system benefits

SCE Focus

- Deploy energy storage as a distribution asset
 - Support distribution circuit needs (e.g., lower line loading)
- When no distribution-function is required, participate in the energy market
 - Enhance energy storage business case

Storage Distribution Value

Measuring, monetizing and capturing storage distribution values still remains a challenge

Well Known Values

- Distribution upgrade deferral

Partially Known Values

- Equipment life extension
- Voltage support

Unknown Values

- Power quality improvement
- DER integration enhancement
- Reactive Power compensation
- Reliability improvement
- Other unidentified values

Remaining Challenges/Gaps

- Availability of truly grid-ready integrated systems
 - Storage component may be mature, integration into complete turn-key system has not reached full maturity
- Capturing promised value streams in actual applications & building positive business cases
- Siting, Siting, Siting
 - Land availability, system footprint, public acceptance
- Demonstrating required reliability at the system level
- Integrating with existing utility communication infrastructure & new Smart Grid technologies
- Validating large systems prior to deployment
- Availability of standard application definitions and test procedures