EPRI-DOE Handbook of Energy Storage for Transmission & Distribution Applications

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Cosponsor
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Sandia National Laboratories
Chapter 1 – Introduction

Chapter 2 – National Perspective on the Benefits of Electricity Storage.

Chapter 3 – T&D Applications for Benefit - Cost Assessments.

Chapter 4 – Energy Storage Benefits and Benefit Quantification.

Chapter 5 - Common Financial Parameters and Cost Elements.

Chapter 6 – Lead Acid Batteries.

Chapter 7 – Nickel-Cadmium and Other Nickel Electrode Batteries.

Chapter 8 - Sodium – Sulfur Batteries.

Chapter 9 – Zinc Bromine Batteries.

Chapter 10 - Vanadium Redox Batteries.

Chapter 11 - Sodium Polysulfide – Sodium Bromide Batteries.

Chapter 12 - Superconducting Magnetic Energy Storage.

Chapter 13 - Flywheel Energy Storage.

Chapter 14 - Electrochemical Capacitors.

Chapter 15 - Compressed Air Energy Storage.
Project Partners

Electric Power Research Institute (EPRI)
- **Project Lead: Dan Rastler**

National Rural Electric Cooperative Association (NRECA)
- **Project Lead: Dale Bradshaw**

AECOM
- **Project Lead: Dave Gauntlett**

Advisory Panel: ESA; Utility Representatives; Industry Representatives; Consultants
Compile a new Energy Storage Handbook

- How-to guide for selection and installation of energy storage systems
- Review of select storage technologies, performance characteristics and value propositions
- Detailed cost data from ~ 40 system vendors and integrators
  - First time that same cost data will be shared by DOE/Sandia, EPRI and NRECA
- Schematics and one-lines for select applications to illustrate interconnection and configuration options
Chapter Outline

- Energy Storage in Today’s Applications
- Storage Technologies and Performance Characteristics
- Storage Applications and Some Value Propositions
- Considerations in Acquiring a Storage System
- Sample Energy Storage Projects: Past and Present
- Additional Reading and Resources
Development of Cost Database

Surveyed System Vendors and Integrators to obtain specific cost information

- Batteries – 24 to 30
- Flywheel - 1
- CAES – 3
- Pumped Hydro – Using EPRI study information
- Inverters - 4
Release Detail

Schedule:
• Review Draft: March 2012
• Publish Date: June end, 2012

Handbook to be published by Sandia National Laboratories:
Print and PDF release

Cost database in Handbook is static
EPRI and NRECA will develop interactive screening tools