ELECTRIC POWER RESEARCH INSTITUTE

GEARED

GridEd

The Center for Grid Engineering Education

Distributed Storage and Generation Technologies and Applications

This course is the first of a series of four courses developed and offered by GridEd to address several evolving forces that will alter the fundamental operating characteristics of the electric grid, transforming it from a one-way central supply structure to one that has bidirectional power flows resulting from distributed energy resources (DER). Self generating consumers or those with electric storage devices will alter the design requirements for the electric distribution system. This course focuses on distributed storage and generation technologies and applications. The operation and applications of energy storage and distributed generation technologies for utility applications will be explored. The course content spans not only how these technologies work but also the history of their development and use and the benefits that DER can bring to generation requirements; transmission and distribution systems; microgrids; and off-grid applications. Students will also learn about the policy, cost, and technical challenges facing the wider use of electricity storage and what can be done to address those challenges.

Who Should Attend

The course is intended for anyone interested in the opportunities to incorporate storage or distributed generation into the grid and how these technologies will change the way the grid works. Students will include utility engineers and technicians, procurement officers, regulatory compliance staff, legal staff, and possibly regulators. Previous technical training is helpful but not necessary.

Registration Information

Date: July 16 & 17, 2014
Course Length: 1.5-Days
PDH* Available: 12-Hours
Registration Fee:
- $1,200 per person
- 20% discount for organizations sending three or more attendees
- 20% discount for individuals who take all four GridEd short courses

Location: EPRI – Charlotte Office
1330 W W.T. Harris Blvd.
Charlotte, NC 28262
Registration: http://grided.epri.com

Students should bring a laptop computer with Internet connection capability.

For More Information

Haresh Kamath, hkamath@epri.com or 650.855.2268
Steven Coley, scoley@epri.com or 865.218.8179

*Professional Development Hours

Meet the Instructors

Haresh Kamath is Program Manager for Energy Storage at the Electric Power Research Institute (EPRI). He manages the Institute's research into the development, assessment, and application of energy storage technologies for grid storage applications. Kamath is also a Technology Scout for EPRI's Technology Innovation Program, where he investigates advanced materials technologies for power-delivery applications, as well as advanced energy storage technologies. He was an author for the DOE-EPRI Handbook of Energy Storage and serves on the board of directors of the Electricity Storage Association.

Before joining EPRI, Kamath worked at Lockheed Martin Space Systems as a product engineer responsible for spacecraft batteries. He also served as an applications engineering and business-development manager at a startup energy storage company.

Kamath received his Bachelor's and Master's degrees in chemical engineering from Stanford University.

Course Outline

Day 1

Distributed Generation

- Distributed Generation: An Overview
- Applications of Distributed Generation
- DG Technologies
- Value analysis for Distributed Generation
- Regulatory Issues

Day 2

Energy Storage

- Introduction to Energy Storage
- Theoretical Principles for Energy Storage in the Grid
- Energy Storage Technologies and their Challenges
  - Technical Overview of Storage Technologies
  - Discussion of Cost Issues
  - Moving from Technology to Deployment
- Value Analysis for Energy Storage
  - EPRI Methodology for Value Analysis of Storage
  - Tools for Bulk Storage Applications
  - Tools for Distributed Storage Applications
- Regulatory Issues

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Electric Power Research Institute
3420 Hillview Avenue, Palo Alto, California 94304-1338 • PO Box 10412, Palo Alto, California 94303-0813 USA
800.313.3774 • 650.855.2121 • askepri@epri.com • www.epri.com