ELECTRIC POWER RESEARCH INSTITUTE

GEARED

GridEd

The Center for Grid Engineering Education

Business Case Analysis in the Electric Utility Industry

This course is the fourth 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. Accommodating relentless changes in how electricity is used to power economic growth and prosperity, to meet changing customer wants and needs and to accommodate distributed renewable resources has profound physical and financial implications for the utility, its ratepayers, and all society. This course presents and demonstrates the foundations for utility investment decision making from three related cost/benefit perspectives:

1. ***Societal.*** Does the change in how energy services are used and supplied result in a better use of scarce societal resources —employing a conventional Cost/Benefit Analysis framework?
2. ***Utility.*** How to determine and quantify the costs incurred to accommodate new supply technologies and serve new electric load—using the utility Revenue Requirements framework.
3. ***Customer.*** Characterize how rate structures and enabling technology influence customers' decisions to adopt new electric technologies, and how the induced usage changes affect all other customers—employing a Customer Behavior framework.

The course will provide participants with a general understanding and specific subject area knowledge of how electric utilities plan and operate a power system. The lessons are reinforced through case studies focused on how utilities have invested in smart grid technologies, as well as accommodated distributed generation resources and foster new electricity uses. After the course, students can expect to bring a broader enterprise perspective to the execution of their jobs that benefits both their companies and their careers.

Who Should Attend

The course is designed to train and inform utility technical staff involved in designing, planning, or operating the electric power system. Others with related interests will learn how their job function fits into the investment decisions that are required to operate an electric system.

Registration Information

Date: September 29 & 30, 2014

Course Length: 2-Days

PDH* Available: 16-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 – Washington DC Office
2000 L Street, NW, Suite 805
Washington, DC 20036

Registration: http://grided.epri.com

Students should bring a laptop computer with Internet connection capability.

For More Information

Bernard Neenan: bneenan@epri.com or 865.218.8133
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Steven Coley, scoley@epri.com or 865.218.8179

*Professional Development Hours

Meet the Instructors

Bernie Neenan is a Technical Executive at the Electric Power Research Institute (EPRI). His research focus is characterizing how businesses and consumers respond to electricity prices, information, and technology. He is managing research collaboratives to characterize customer wants and expectations for electric vehicles, and to characterize consumer preferences for alternative ways to buy electrict.

Neenan was conferred a Bachelor's and Doctorate degree in Agricultural Economics by Cornell University, and a Master's in Food and Resource Economics by the University of Florida.

Jeffrey Roark is a Principal Technical Leader at the Electric Power Research Institute (EPRI). His primary responsibilities include extending the EPRI/DOE Cost/Benefit Analysis Methodology for Smart Grid Demonstration projects, as well as managing projects demonstrating operational and economic characteristics of intelligent devices deployed on the grid

Roark holds Bachelor's and Master's degrees in Electrical Engineering from Auburn University, and a Master's in Business Administration from the University of Alabama at Birmingham.

Course Outline

Day 1

Part 1.0 Utility Planning Analysis

- Basics
  - Regulatory Compact
  - Revenue Requirement Analysis
  - Does Ownership Structure Matter?
- Extensions of Utility Planning Analysis:
  - Value-based Planning
  - Integrated Least Cost planning

Part 2.0. Utility Cost/Financial Structures

- Utility Financial Structure
  - Utility Cost Structure
  - Revenue Requirement Calculation
  - Fixed Charge Rates
- Incremental Costs/Benefits
  - Load/loss Changes
  - Investment Deferral
  - Reliability Improvements
  - Marginal Cost

Part 3.0 Electric Rates and the Customers that Pay Them

- Costs to Rates Conventions
- A New Way—Customer-Driven Electricity Services
- Can We Influence Behaviors—a Review of the Evidence

Day 2

Part 4.0 Cost/Benefit Analysis (CBA)

- Types of CBA
  - Economic vs. Financial Analysis "Perspective"– Whose Costs & Benefits?
  - *Drawing the Circle*: What's in, What's out? Who's in, Who's out?
  - Utility Planning versus "Textbook" Financial Analysis
- General CBA Concepts
  - Comparison of Alternatives
  - Common Monetary Terms
  - Odds and Ends
- A General CBA Framework
  - Identifying and Measuring Impacts
  - Estimating Costs
  - Monetizing Benefits

Part 5.0 CBA Case Studies

- Smart Grid Investments
- Accommodating Distributed Generation

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