



Course length: One day if the course is customized to cover only retail or wholesale, one and one-half days if the course covers both retail and wholesale DSM programs

Prerequisites: None

CPE credits: 8-12 (depending on length)

An overview of how DSM programs are designed and implemented, and how program benefits and economics are assessed

Demand side management (DSM) is rapidly becoming a key mechanism for utilities seeking to manage peak loads without adding generation. Soon, DSM coupled with transactive electric distribution services may provide ongoing opportunities for electric consumers to actively participate in electric markets. Demand Side Management: Benefits, Program Mechanics, and Economics provides an overview of how wholesale and retail DSM programs are planned, designed, implemented, and evaluated, and how these programs interact with the wider electric market.



WHO WILL BENEFIT FROM THIS SEMINAR?

- New employees in DSM departments
- Account managers working with customers who benefit from DSM programs
- Customer service employees working with customers who benefit from DSM programs
- Resource and reliability planners needing to incorporate utility and retail DSM into supply planning
- Regulatory, PR, and legal personnel who are tasked with building support for DSM programs
- Staff involved with sustainability efforts who want to understand how DSM fits into their planning process

WHAT PARTICIPANTS WILL LEARN

- What DSM is and why it is a resource with growing importance
- Key principles of retail DSM programs
- How retail DSM programs are designed and implemented
- Key principles of wholesale Economic Demand Response (EDR) programs
- How wholesale EDR programs are designed and implemented
- The role of DSM in electric markets
- The importance of evaluation, monitoring, and verification to ensure benefits are being delivered
- The future of DSM and how it may become a key resource in a distributed grid

COURSE AGENDA

Note the agenda can be customized for a focus on retail or wholesale DSM. Sections subject to customization are indicated by an *.

Introduction to DSM

- What DSM is

- DSM load shape objectives
- How DSM is often a low-cost resource
- Variations in DSM (conservation, efficiency, demand response, sustainable energy)
- Two markets for DSM (retail, wholesale)
- Evolution of DSM and the roles of various stakeholders
- How DSM is used (public policy, regulation, resource alternative, reliability mechanism, market-based service, compliance tool)

Key DSM Drivers in Retail Programs

- Compliance with state requirements
- Establishing savings targets
- Designing portfolios (spending levels, energy and demand targets, coverage, cost effectiveness, program design, program goals)
- Estimating DSM potential (TEAPOT – technical, economic and achievable potential study)
 - Framework
 - Parameters
 - Data and data sources
 - Model outputs for TEAPOT studies
- Program versus portfolio approaches
- Market research and sampling plans
- Steps in program implementation
- The commission role in ratepayer-funded DSM
- Tracking systems for program data
- Reporting requirements
- Case studies of programs in various states

Principles in Retail DSM Planning and Design

- The need for planning
- DSM and Integrated Resource Planning (IRP)
- DSM planning frameworks
- Establishing objectives and options
- Use of potential analysis (market vs. forecast)
- DMS program design



- Process
- Types of incentives
- Estimating participation and costs
- Key factors in finalizing programs
- Benefit cost calculations and effectiveness tests
- Program implementation and management

Economic Demand Response (EDR) in the Wholesale Market

- The role of EDR in the wholesale market
- Markets in which EDR can participate (capacity, energy, regulation, reserves)
- Criteria for market participation
- Illustrative steps in EDR market participation
- Key EDR principles in the wholesale market
- The role of ISOs and the federal government in EDR wholesale markets
- Types of EDR and which markets work for which technology
- How EDR impacts market prices
- ISO New England case study (DSM's participation in forward reserve market)
- How EDR resources qualify to participate in ISO markets
- Verification of resources
- Barriers to demand response
- Using incentives to encourage EDR participation
- FERC's role in EDR wholesale market (rulemaking, research, information, action plans)
- Future of EDR in wholesale markets

Mechanics of Wholesale Demand Response Programs

- Participation in ISO/RTO programs
- The role of the Curtailment Service Provider (CSP)
- The process of identifying and contracting with end-use customers
- The EDR business proposition

- Strategies for customer participation
- Key customer decision points
- The operational process
- Real world program examples
- Customer issues

Program Evaluation, Measurement and Verification

- Why evaluation is important
- The basic measurement and verification (M&V) equation
- Types of evaluation and methods
- Key evaluation questions
- Typical evaluation methods
- Determining deemed savings or performance compliance
- How M&V results can be used
- Tracking systems

The Future of DSM

- Future directions in DSM
- Technology evolution
- Smart grids and smart consumers
- The possible future of transactive consumers/prosumers
- Retail markets facilitated by Distribution System Operators (DSOs) or Distribution System Platform Providers vs. wholesale markets facilitated by ISOs
- The role of the Clean Power Plan (CPP)
- How DSM is likely to be a key resource well into the future

