



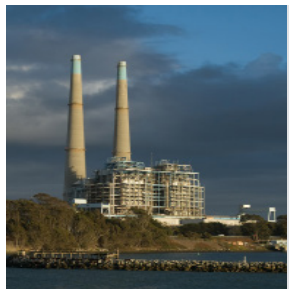
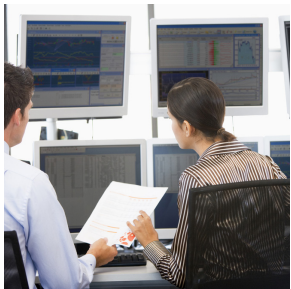
**Course length:** One day

**Prerequisites:** None

**CPE credits:** 8

### A comprehensive overview of the natural gas physical system and marketplace with a focus on how they interact with electric generation and markets

In recent years, electric systems traditionally dependent on coal power have seen a number of coal units shut down and be replaced with natural gas. Unlike coal units that store coal onsite, gas units are dependent on gas pipelines and markets to deliver supply as power plants are dispatched. Yet many individuals involved the electric industry don't have a basic understanding of how gas systems and markets function and the various tariff rules and gas industry practices that impact gas availability. Gas Fundamentals for Power Markets: Supply, Storage, and Transport provides detailed knowledge that helps participants evaluate what is required for obtaining reliable and cost-effective gas supply and what the factors are that determine when gas is, or is not, available to power generators.



### WHO WILL BENEFIT FROM THIS SEMINAR?

- Employees of ISOs and other system operators needing a deeper understanding of gas supply and markets
- Employees of utilities and independent power producers needing a better understanding of gas supply and markets
- Finance, accounting, legal, and sales professionals interacting with ISOs, traders, procurement groups, merchant generators, transmission owners, and retail marketers
- Regulatory commissioners and staff in regions with growing dependence on gas generation

### WHAT PARTICIPANTS WILL LEARN

- What gas markets are, how they are structured, and how they affect gas price and availability
- How gas supply is procured
- The various factors associated with interstate and intrastate transportation and storage
- The role of gas marketers and what they offer to generators
- How physical and financial products are used to create a gas supply portfolio

### COURSE AGENDA

#### Introduction to Gas Markets

- Why gas markets matter to the electric business
- The delivery chain – production, processing, pipeline, market hubs, storage, citygate, LDC
- Market structure – market participants in the value chain and how they interact
- Gas infrastructure – pipeline, storage and markets
- Services involved in acquiring gas (commodity, transportation, storage, hub services, balancing, risk management)

- Competitive services vs. regulated services
- How the various service components make up the delivered cost to the consumer
- The current state of gas markets

#### Commodity

- Who a buyer can acquire gas from
- Ways of trading – bilateral vs. electronic exchange
- Types of commodity deals – firm, baseload, swing
- The role of a gas marketer
- Components of a commodity transaction (term, pricing, volume, firmness, receipt/delivery points, credit)
- How producers and markets typically structure their sales arrangements and bundle transport with commodity
- Risks associated with commodity transactions
- Key decision points in structuring a gas commodity portfolio

#### Interstate Pipeline Transportation

- Regulation of interstate pipelines
- Transport services (firm, interruptible, no-notice, secondary markets, balancing)
- Components of a transport contract (service, term, pricing, contract quantity, receipt/delivery points, credit)
- How capacity is determined on a daily basis
- Nominations and scheduling (including time frames)
- When and how schedules can get cut
- Operational and emergency flow orders
- Risks associated with transportation
- Key decision points in determining transportation portfolio

#### LDC Transport

- Regulation of LDCs
- Transport on LDCs (firm vs. IT, balancing)





- Nominations and scheduling (including time frames)
- Delivery priority and when transport can be curtailed
- Risks associated with LDC transport
- Key decision points in using LDC transport

### Storage

- Regulation of storage
- Different ways to use storage
- Storage services (injections, withdrawal, inventory, firm vs. IT, quickturn vs. seasonal)
- Components of a storage contract (including pricing)
- Dynamics of how storage market is currently working
- Determining the value of storage
- Risks associated with using storage
- Key decision points in using storage

### Hub Services

- What hub services are (parking, lending, balancing, wheeling)
- Components of a hub services contract (including pricing)
- Risks associated with hub services
- Key decision points in using hub services

### Financial Products and Risk Management

- Review of various risks associated with procuring gas supply
- Commodity positions – long vs. short
- Price risk and price volatility including examples of price spikes elsewhere (California, Texas)
- Techniques for determining risk levels
- Tools for managing risk (physical and financial including OBAs)
- Key decision points in use of risk management tools

### Putting It All Together

- How generators plan and implement gas procurement portfolio strategies
- Why there is no perfect hedge or strategy
- Issues for generators and how they can be addressed
- How the markets are evolving to work together better