

## North American Natural Gas Physical & Financial Fundamentals - NGPF

This two-day course is designed to introduce delegates to the functionality of the natural gas industry, transportation, storage, trading and hedging. Discussion includes physical natural gas beginning with exploration and concluding with the delivery to the burner-tip. It will provide an understanding of the role of pipelines in the natural gas industry and a broad insight to the dynamics that impact the economic decisions facing industry participants. It covers the physical aspects of commodity markets and natural gas as a commodity, discusses the influence of shale gas, defines trading and hedging, presents the main types of contracts for natural gas trading and hedging, defines and discusses natural gas volatility, and includes examples of primary types of natural gas trading.

Delegates will interact with the material through a series of group quizzes and simulations.

### **Includes Online Pre-study Module**

This course is accompanied by a preparatory course available online. Delegates will receive an online voucher as part of their joining instructions upon confirmation of registration. By taking advantage of this "blended" learning approach, in-class time and learning are optimized.

---

### **Who Should Attend?**

As this is an introductory course, all facets of an organization are likely to attend. The most likely to attend are: human resources, info systems, credit department, accountants, legal, quantitative analysts, consultants, programmers, trade support staff, secretarial, marketing/sales, risk managers.

---

### **Course Contents**

#### **DAY 1**

- **8:30am**
  - Welcome and Introduction
- **9:00am**
  - Overview of the Natural Gas Value Chain
  - Physical Natural Gas
    - Natural gas as a hydrocarbon
    - Measuring natural gas

**USA: (+1) 713 343 1699 | UK: (+44) 1865 250521 | Singapore: (+65) 6837 8030**

Email us at [info@mennta.com](mailto:info@mennta.com)



- Common trading quantities
- **10:00am**
  - The Shale Gas Revolution
    - New natural gas reserves
    - Horizontal drilling and fracking
    - The effect of shale natural gas on:
      - Production
      - Pipelines
      - Basis values
      - LNG exports
- **11:00am**
  - Natural Gas Supply & Reserves
  - Physical Natural Gas Monthly Supply Management
    - Base load vs. swing
    - Bid week and physical gas trading
- **12:00pm**
  - Lunch
- **1:00pm**
  - Production of Natural Gas
    - Exploration and production
    - Gathering, processing and treating
  - Pipelines
    - Role of the transporter
    - Pipeline system components (transmission pipe, compression stations, valves, metering stations, control stations)
    - U.S. pipeline network
    - LNG terminals
- **2:00pm**
  - Transportation Tariffs
    - What is a tariff?
    - The role of FERC
    - Regulated service offerings
    - Regulatory rate proceedings
    - Cost of service
    - Firm vs. interruptible service
- **3:00pm**
  - Natural Gas Storage
    - Geologic structures
    - Uses of storage
    - Injections and withdrawals

USA: (+1) 713 343 1699 | UK: (+44) 1865 250521 | Singapore: (+65) 6837 8030

Email us at [info@mennta.com](mailto:info@mennta.com)



- Types of storage
- Storage capacity and types by region
- Storage inventory: base gas vs. working gas
- Storage capacity utilization
- Storage fees
- The EIA storage report
- **4:30pm**
  - End of Day 1

## DAY 2

- **8:30am**
  - Welcome and Review
- **9:00am**
  - Natural Gas Markets - Hubs
  - Market Transportation Participants
    - Shippers
    - LDCs
    - Direct end users
    - Marketers
  - Nominations & Scheduling
    - Nomination terminology
    - Nomination process
    - Scheduling
    - Gas control
    - Imbalances
- **10:00am**
  - Natural Gas Deregulation
    - Pre-open access vs. open access
    - History of natural gas regulation
    - Federal and state regulation
    - Regulated market challenges: interstate vs. intra-state price differences, and the take or pay crisis
    - The beginnings of Open Access: key FERC orders
    - The emergence of the spot market
    - FERC order 636
    - How the market operates now
- **11:00am**
  - Trading, Hedging & Risk Management
    - What does “trading” mean?

**USA: (+1) 713 343 1699 | UK: (+44) 1865 250521 | Singapore: (+65) 6837 8030**

Email us at [info@mennta.com](mailto:info@mennta.com)



- What is hedging?
  - Definition of risk management
  - Risk management vs. hedging
  - The risk management process
  - Dealing with non-price risks such as credit, operational and cash flow
  - Hedging objectives and reasons for hedging
  - The mechanics of hedging
  - Physical vs. financial settlement
- **12:00pm**
    - Lunch
  - **1:00pm**
    - Market Instruments in Natural Gas
      - Physical and financial instruments
      - Index transactions
      - Forwards, futures and swaps
      - Natural Gas Exchanges
      - Futures margining and collateral
      - OTC clearing
      - Advantages and disadvantages of each instrument
      - Hedging with forwards, swaps, futures and options
  - **2:00pm**
    - Natural Gas Price Behavior & Volatility
      - Definition, measurement, and types of volatility
      - The distributional characteristics of natural gas prices
      - Volatility skews
  - **3:00pm**
    - Natural Gas Basis & Basis Swaps
      - Definition of basis, and basis quoting conventions
      - Basis statistical analysis
      - Basis swaps, basis swap quotes, payoffs and hedging examples
    - Trading Strategies: Optimization & Monetization of Transportation & Storage
  - **4:00pm**
    - Summary and Wrap-Up
  - **4:30pm**
    - End of course
  - **Exercises**
    - Learning objectives are reinforced by a series of group quiz questions spread throughout the course
    - Transportation tariff exercise

**USA: (+1) 713 343 1699 | UK: (+44) 1865 250521 | Singapore: (+65) 6837 8030**

Email us at [info@mennta.com](mailto:info@mennta.com)



- Three rounds of trading simulations:
  - Baseload supply simulation
  - Futures hedging simulation
  - Day-ahead trading and storage withdrawal supply simulation

USA: (+1) 713 343 1699 | UK: (+44) 1865 250521 | Singapore: (+65) 6837 8030

Email us at [info@mennta.com](mailto:info@mennta.com)

