

INTRODUCTION TO THE NATURAL GAS INDUSTRY, INFRASTRUCTURE AND REGULATIONS

July 26-27, 2017
Royal Sonesta Houston
Houston, TX



EUCI is authorized
by IACET to offer
0.7 CEUs for the
course

OVERVIEW

This course will present an overview of the natural gas industry and related natural gas liquids (NGLs) and shale oil infrastructure so that attendees gain a comprehensive understanding of the gas industry and markets. Attendees will discuss natural gas terminology, measurements and conversions. They will review the basics of natural gas production, gathering, operations and markets. It will provide an in-depth understanding of natural gas processing plants, pipelines, storage, LNG peak shaving plants, LNG Import and Export terminals and local distribution companies (LDCs). The course will address important components of natural gas transportation, including regional costs of firm and interruptible pipeline transportation, nominations, balancing, and section 4 and 5 ratemaking proceedings on natural gas pipeline transportation.

The intent is that participants will be able to apply the information learned the first day they return to their jobs. Hands-on activities will be included throughout the day.

LEARNING OUTCOMES

- Explain the natural gas value chain: upstream, midstream and downstream
- Discuss natural gas terminology, measurements and conversions
- Review the basics of natural gas production
- Describe the types of shale plays
- Discuss natural gas gathering, operations and markets
- Address natural gas processing plants
- Review elements of natural gas producer economics
- Explain fungibility and gas interchangeability in U.S., Asia and Europe
- Describe natural gas pipelines, including their parts, how they operate, and their role in a changing market
- Evaluate natural gas storage types, operations and storage issues
- Discuss an overview of liquefied natural gas (LNG)
- Address peak shaving plants
- Review Local Distribution Companies (LDCs)
- State the process of natural gas infrastructure siting
- Discuss the role that natural gas plays in integrating wind and solar energy into the electric grid and Clean Power Plan
- Describe how FERC policy, major orders and regulations have evolved into today's "Open Access" environment
- Relate an overview of regulated rate components and rate design and new rate policies on the horizon
- Address important components of transportation, including: Pooling, nominations, confirmations, scheduling, receipt, and balancing
- Explain PDAs, OBAs, OFOs, allocations, and curtailments



“Excellent course for those in your organization that are newer employees of need to become familiar with natural gas basics from wellhead to burner tip.”

Director of Operations, WPPI Energy

AGENDA

WEDNESDAY, JULY 26, 2017

7:30 – 8:00 am Registration and Continental Breakfast

8:00 am – 4:00 pm Course Timing

12:00 – 1:00 pm Group Luncheon

The Natural Gas Value Chain

- Upstream
- Midstream
- Downstream
- How the natural gas industry operates across the value chain

Natural Gas Basics

- Terminology
- Measurements
- Conversions

Basics of Natural Gas Production

- Conventional
- Horizontal drilling
- Hydraulic fracturing

Kinds of Shale Plays

- Dry
- Wet
- Oil
- Locations

Industry Basics

- Gas gathering
- Operations
- Markets
- Regulatory considerations

Producer Economics

- Natural gas processing plants
- Pipeline quality
- Economic importance of NGLs

Fungibility and Gas Interchangeability in U.S., Asia and Europe

Natural Gas Pipelines

- Key parts
- How pipelines operate
- Who are the pipeline players?
- Role of shippers and purchasers
- Issues pipelines face in a changing market

AGENDA

WEDNESDAY, JULY 26, 2017 (CONTINUED)

Natural Gas Storage

- Different types
- Operations
- Storage development
- Regulatory issues

Liquefied Natural Gas (LNG)

- Basics
- Import/export terminals
- Vessels

Peak Shaving Plants

- Who uses them
- Locations
- Why they are important

Local Distribution Companies (LDCs)

- Physical plant-related operations
- How they work
- Economic trends
- Rates
- Regulatory trends

Natural Gas Infrastructure Siting: Who Regulates What

Greening of Power Sector

- Role that natural gas plays in integrating wind and solar energy into the electric grid and Clean Power Plan

Natural Gas Regulations

- Who regulates what, where, how, and why
- How FERC policy, major Orders and regulations have evolved into today's "Open Access" environment
- How natural gas delivery and storage is regulated across the value chain
- Significant FERC regulatory initiatives, policies and Orders that have transformed the industry
- Hot policy, regulatory, environmental, and safety issues that may impact how the industry operates
- Overview of regulated rate components and rate design and new rate policies on the horizon
- The fundamentals of Certificate and Rate Proceedings and how to understand capacity matters and pipeline tariffs, transportation services, agreements, and rates using FERC's etariff and FERC forms



"Good course to learn basics of natural gas industry."

Energy Market Consultant,
Energy Exemplar



"Worthwhile, enough in-depth information to fill the day without being overwhelming."

Product Manager, Extrel CMS

AGENDA

WEDNESDAY, JULY 26, 2017 (CONTINUED)

Gas Transportation through the Value Chain

- Overview of gas transportation
- Pooling
- Nominations
- Confirmations
- Scheduling
- Receipt
- Delivery point priorities
- Balancing
- Predetermined Allocation (PDA)
- Operational Balancing Agreement (OBA)
- Operational Flow Order (OFO)
- Allocations
- Penalties
- Interruptions
- Curtailments
- The essential factors involved in bringing gas to market, transportation services and types, rates and rate components and pipeline tariff components

OVERVIEW

This course will present an overview of physical and financial natural gas markets. Attendees will review natural gas market basics, including terminology, concepts, and the mechanics of physical natural gas trading. They will discuss the role of NYMEX Natural Gas Future Contract in determining the value of physical natural gas. Our expert instructor will provide an in-depth understanding of gas indices, fixed price, and physical basis deals. He will address major trends on how sellers and purchasers price physical natural gas. Attendees will gain an understanding of where to find price information, what affects prices, and the role of the Natural Gas Index Publishers. They will leave the course with the ability to assess the importance of liquidity in physical natural gas markets and review considerations used to determine whether or not to hedge. The course will discuss the role of FERC, Commodity Futures Trading Commission, states, and other participants in regulating natural gas markets. The course will conclude with a discussion regarding where natural gas markets are headed.

The intent is that participants will be able to apply the information learned the first day they return to their jobs. Hands-on activities will be included throughout the day.

LEARNING OUTCOMES

- Discuss an overview of physical and financial natural gas markets and their key differences
- Explain the role of NYMEX Natural Gas Future Contract in determining the value of physical natural gas
- Review natural gas market basics, including terminology, concepts, and the mechanics of physical natural gas trading
- Express where physical natural gas can be bought and sold
- Discuss gas indices, fixed price, and physical basis deals
- Address major trends on how sellers and purchasers price physical natural gas
- Describe where to find price information and what affects prices
- Explain the role of the Natural Gas Index Publishers
- Assess the importance of liquidity in physical natural gas markets
- List the major players of physical natural gas markets
- Review considerations used to determine whether or not to hedge
- Describe the role of FERC, Commodity Futures Trading Commission, states, and other participants in regulating natural gas markets
- Discuss where natural gas markets are headed

AGENDA

THURSDAY, JULY 27, 2017

8:00 – 8:30 am **Registration and Continental Breakfast**

8:30 am – 4:30 pm **Course Timing**

12:00 – 1:00 pm **Group Luncheon**

How Oil, NGL and Gas Prices are affecting the Shale Gas Revolution

- Where are natural gas prices headed?
- Why crude oil, NGL, aging infrastructure and environmental factors are important
- Shale 2.0

Physical and Financial Natural Gas Markets

- Overview
- Key differences
- Liquidity in physical markets vs. financial markets
- Role of clearing in natural gas markets

Physical Natural Gas: Buying and Selling

- Where can physical natural gas be bought and sold
- Bidweek (next month gas)
- Daily gas
- Intraday
- Weekend gas markets

Natural Gas Pricing

- How is natural gas priced?
- Natural gas indices
- Fixed price deals
- Physical basis deals
- Role of index publishers and price discovery
- WebICE electronic platform
- What do index publishers use to calculate indices
- Major trends on how sellers and purchasers price physical natural gas
- Gas and electric coordination

NYMEX Natural Gas Futures Contract and ICE Look-Alike Futures Contract

- What are these and how do they differ
- Role of NYMEX Natural gas futures settlement during bid week in setting gas prices
- How Settlement of the NYMEX affects physical daily and monthly gas indices

Natural Gas Market Basics

- Terminology
- Concepts
- Mechanics of physical natural gas trading
- Role of: Intercontinental Exchange and Natural Gas Exchange (NGX)
- Voice brokers
- Firm and interruptible pipeline transportation nominations

THURSDAY, JULY 27, 2017 (CONTINUED)

Hedging with Physicals, Futures and Swaps

- How to physically hedge natural gas with firm transportation, storage, LNG, peak shaving plants, and take and release contracts
- To hedge or not to hedge- and how much?
- Hedging for natural gas producers and purchasers with examples
- Key differences between futures and swaps and related costs to hedge

Natural Gas Markets: Regulatory Perspectives

- Who's watching the natural gas markets for manipulation?
- FERC, Commodity Futures Trading Commission, States
- What gets FERC's attention in the natural gas markets
- How FERC performs over sight and surveillance of the natural gas markets
- FERC's hotline and its role in preventing market manipulation
- Fines and penalties assessed by FERC

INSTRUCTOR



Tom Russo

Principal, Russo on Energy LLC

Tom Russo is an Energy and Environmental expert with unique regulatory skills in siting energy infrastructure, markets and physical/cybersecurity.

Prior to founding Russo on Energy LLC in May 2015, Mr. Russo worked for over 30 years as a Manager and Sr. Energy Industry Analyst at the Federal Energy Regulatory Commission (FERC). During that time he amassed experience in hydropower licensing, NEPA environmental impact assessment of energy projects, business process reengineering, and natural gas and crude oil market oversight. Mr. Russo thoroughly understands the Natural Gas Act, Natural Gas Policy Act, Federal Power Act and Energy Policy Act as they apply to natural gas and hydroelectric projects. He also assisted FERC's new Energy Infrastructure Security Office with understanding physical and cybersecurity threats and vulnerabilities to natural gas, oil and gas-fired power projects and physical natural gas and related futures and swaps.

In FERC's Office of Enforcement, he managed and led efforts on the development and implementation of FERC Order 704 and FERC's Form 552 Annual Natural Gas Transaction Report program from 2008 to 2015. He also has helped numerous energy companies address FERC compliance issues in the natural gas, LNG, and hydropower area, as well as natural gas market participants in achieving compliance with transactional issues related to natural gas indices and index formation.

Mr. Russo is a native of Brooklyn, New York. He earned a credential as a Certified Information Systems Security Professional (CISSP) in 2010. He also graduated with a MBA in Finance from the George Washington University and a MS in Biology from the University of Alabama.

NATURAL GAS PHYSICAL & FINANCIAL MARKETS

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

INSTRUCTIONAL METHODS

Case studies, PowerPoint presentations, classroom exercises

PROCEEDINGS

The proceedings of the course will be published, and one copy will be distributed to each registrant at the course.

EVENT LOCATION

A room block has been reserved at the Royal Sonesta Houston, 2222 West Loop S, Houston, TX 77027, for the nights of July 23- 26, 2017. Room rates are \$139 plus applicable tax. Call **1-713-627-7600** for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is June 23, 2017 but as there are a limited number of rooms available at this rate, the room block may close sooner. ***Please make your reservations early.***

IACET CREDITS



EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 0.7 CEUs for the course.

CPE CREDITS



EUCI is registered with the National Association of State Boards of Accountancy (NASBA) as a sponsor of continuing professional education on the National Registry of CPE Sponsors. State boards of accountancy have final authority on the acceptance of individual courses for CPE credit. Complaints regarding registered sponsors may be submitted to the National Registry of CPE Sponsors through its website: www.learningmarket.org.

Upon successful completion of this event, program participants interested in receiving CPE credits will receive a certificate of completion. **EUCI is authorized by CPE to offer 8 credits** for this course.

There is no prerequisite for this course.

Program Level 1: Beginner, **Delivery Method:** Group-Live, **Advanced Preparation:** None



Please make checks payable to: "PMA"

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PLEASE REGISTER

BOTH INTRODUCTION TO THE NATURAL GAS INDUSTRY, INFRASTRUCTURE AND REGULATIONS COURSE AND NATURAL GAS PHYSICAL & FINANCIAL MARKETS COURSE: JULY 26 -27, 2017: US \$1895
 Early bird on or before July 7, 2017: US \$1695

INTRODUCTION TO THE NATURAL GAS INDUSTRY, INFRASTRUCTURE AND REGULATIONS COURSE ONLY: JULY 26, 2017: US \$995
 Early bird on or before July 7, 2017: US \$895

NATURAL GAS PHYSICAL & FINANCIAL MARKETS COURSE ONLY: JULY 27, 2017: US \$995,
 Early bird on or before July 7, 2017: US \$895

How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

Print Name

Job Title

Company

What name do you prefer on your name badge?

Address

City

State/Province

Zip/Postal Code

Country

Phone

Email

List any dietary or accessibility needs here

CREDIT CARD INFORMATION

Name on Card

Account Number

Billing Address

Billing City

Billing State

Billing Zip Code/Postal Code

Exp. Date

Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx)

OR Enclosed is a check for \$ _____ to cover _____ registrations.

Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before June 23, 2017 in order to be refunded and will be subject to a US \$195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI's liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at (201) 871-0474.