INTRODUCTION TO THE NATURAL GAS INDUSTRY, INFRASTRUCTURE AND REGULATIONS

August 11, 2020
Online | Central Time

EUCI ONLINE COURSE

EUCI is pleased to offer this virtual course on our online interactive platform. Enjoy a valuable learning experience with a smaller impact on your time and at reduced cost. You will gain new knowledge, skills, and hands-on experience in just one day from the comfort of your remote location.

RELATED EVENT:

NATURAL GAS PHYSICAL & FINANCIAL MARKETS
August 12, 2020 Online

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EUCI is authorized by IACET to offer 0.7 CEUs for this 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 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

“I think this gave a great background to the natural gas industry.”

VP, Regulatory Affairs and Human Resources, Clearview Energy
AGENDA

TUESDAY, AUGUST 11, 2020 - CENTRAL TIME

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<th>Time</th>
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<td>8:45 – 9:00 am</td>
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<td>9:00 am – 4:30 pm</td>
<td>Course Timing</td>
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<tr>
<td>12:30 – 1:15 pm</td>
<td>Lunch Break</td>
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Fundamentals
- Natural gas composition
- Benefits
- Methane
- Industry standard
- Terminology
- Measurements
- Conversions

Natural Gas Industry History & Overview
- Regulation
- Deregulation
- What’s still regulated

Supply, Demand, and Prices
- Primary sources and uses
- Other demand sectors

The Natural Gas Value Chain Overview
- Upstream
- Midstream
- Downstream
- How the natural gas industry operates across the value chain

Upstream Activities
- Major natural gas shale plays in U.S. and Canada
- Kinds of shale plays
- Dry, wet, and associated gas (from oil wells)
- NGLs and their economic importance of NGLs
- Conventional and Unconventional Drilling
- Drilling and fracking shales
- Hydraulic fracking
- Costs of drilling and fracking

Midstream Activities
- Gas gathering
- Gas treatment
- Gas processing
- Frac spread and gas processing

“Great resource for gaining knowledge in the Gas Industry.”
Channel Sales Analyst, Clearview Energy
AGENDA

TUESDAY, AUGUST 11, 2020 - CENTRAL TIME (CONTINUED)

Underground Natural Gas Storage
- Different types
- Operations
- Storage development
- Regulatory issues

Other Gas Storage Options
- Liquefied natural gas (LNG) basics
- Import/export terminals and Vessels
- Peak shaving plants
- Who uses them and why they are important
- Locations
- Compressed natural gas (CNG)

Natural Gas Pipelines
- Overview
- Types of pipelines
- Key parts
- How pipelines operate
- Who are the pipeline players?
- How pipelines are planned
- Role of shippers
- Differences between gas pipeline companies & electric power companies
- Construction costs
- Environmental reviews of pipelines and the NEPA process
- Federal and State regulators—who really determines if they are built

FERC Gas and Electric Coordination
- FERC NAESB changes to nomination schedule
- Ratable vs Non-ratable shaped flow hourly service

Re-plumbing the Pipelines—Challenges
- FERC’S 1999 Pipeline Policy Statement
- Landowner opposition and eminent domain
- Opposition by the States
- Opposition by environmental groups
- Recent court challenges

Local Distribution Companies (LDCs)—Gas Utilities
- What an LDC does
- City Gates
- What happens at an LDC’s City Gate?
- Distribution line characteristics and pressure
- How they work
- Safety and economic trends
- Rates and regulatory oversight
- Choosing your gas supplier

“Relevant and useful.”
Regulatory Engineer, BCUC

“Tom did a great job. Well-spoken and well versed.”
VP of Corporate Development, Clearview Energy
AGENDA

TUESDAY, AUGUST 11, 2020 - CENTRAL TIME (CONTINUED)

Pipeline Transportation
- Overview of gas transportation
- Nominations
- Scheduling
- Force Majeure
- Balancing
- Operational Balancing Agreement (OBA)
- Operational Flow Order (OFO)
- Penalties
- Interruptions
- Curtailments

FERC Rate Making on Pipeline Transportation
- Section 4 ratemaking
- Section 5 ratemaking

LDCs and Asset Managers
- How pipeline transportation costs can be reduced
- Procuring and managing gas supplies

Natural Gas Industry Challenges
- Climate change
- Presidential election and ban on fracking
- Keep it in the ground and the new green deal
- Environmental regulation and reforms
- Decarbonization

INSTRUCTOR

Tom Russo
Principal, Russo on Energy LLC

Tom Russo is an Energy and Environmental expert with unique FERC regulatory skills in siting hydropower, natural gas and liquefied natural gas infrastructure, NEPA environmental impact assessment and in how energy markets, prices and physical/cybersecurity affect infrastructure investments.


He is very active in hydropower and natural gas matters and writes an Energy and Environmental column for the Natural Gas and Electricity Journal. He also co-authored for the R Street Institute entitled “Ebbing the flow of hydropower red tape.”

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 an MBA in Finance from the George Washington University and a MS in Biology from the University of Alabama.
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 Futures 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, the Commodity Futures Trading Commission (CFTC), 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, the Commodity Futures Trading Commission (CFTC), states, and other participants in regulating natural gas markets
• Discuss where natural gas markets are headed

“Fantastic course!”
Analyst, DoD

“Great resource for gaining knowledge in the Gas Industry.”
Channel Sales Analyst, Clearview Energy
AGENDA

WEDNESDAY, AUGUST 12, 2020 - CENTRAL TIME

8:45 – 9:00 am  Log In

9:00 am – 4:30 pm  Course Timing

12:30 – 1:15 pm  Lunch Break

Introduction
- Geopolitics and social media
- Where are natural gas prices headed?
- Crude oil, NGL, and gas production effects
- Gas processing and pipeline constraints
- U.S. exports to Mexico and global markets by LNG companies

Other Drivers of Natural Gas Prices
- Weather
- Storage
- Infrastructure constraints

Physical & Financial Natural Gas Markets
- Regional gas markets
- NYMEX Natural Gas Futures Contract at the Henry Hub
- Global natural gas benchmarks

Kinds of Transactions
- Forwards
- NYMEX and ICE look-alike futures
  o Contract specifications
  o Key differences
- Clearing
- Liquidity
- Comparing forwards and futures

Physical Natural Gas Pricing and Indexes
- Fixed price deals
- Daily index prices
- Monthly index prices
- Price reporting agencies (Platts, NGI, Argus, ICE)
- How indexes are calculated

Physical Natural Gas: Buying and Selling
- Where can physical natural gas be bought and sold
- How and when indexes are used to price gas
- What is Bidweek?
  o What happens during Bidweek
  o Settlement of prompt month NYMEX Gas Futures contract
- Daily gas (next day gas), Intraday (same day gas), and Weekend gas
- Buying and selling physical gas using index, fixed price, and physical basis
- Pricing long-term sale and purchase of gas
- Firm and interruptible pipeline transportation nominations
AGENDA

WEDNESDAY, AUGUST 12, 2020 - CENTRAL TIME (CONTINUED)

Natural Gas Basis
- What is basis and what causes it
- Using basis when buying and selling gas

Natural Gas Market Basics & Terms
- Bulls and Bears
- Going long and shorting the market
- What buying and selling futures means
- Open Interest & CFTC Commitments of Traders Report

Hedging with Physicals and Futures
- What is hedging
- Hedging and risk management
- Financial hedges
- To hedge or not to hedge—and how much
- Long Hedgers and Short Hedgers—determining your natural position
- Hedging for natural gas producers and purchasers with examples

Hedging with Natural Gas Options
- Definition of options and why they are popular
- Anatomy of an option
- Buying and selling options
- Call options vs Put options
- Hedging with gas options
- Speculating with options
- Example of how to hedge with options

Using Natural Gas Swaps to Hedging Basis
- Why hedge basis?
- Defining swaps
- Basis swaps
- Index swap
- Swap dealers
- Key differences between futures and swaps and related costs

Natural Gas Markets: Regulatory Perspectives
- Who’s watching the natural gas markets for manipulation?
- FERC, CFTC, States, and ISOs and RTOs
- What gets FERC’s attention in the natural gas markets?
- How FERC performs oversight and surveillance of the natural gas markets
- FERC’s hotline and its role in preventing market manipulation
- Fines and penalties
INSTRUCTOR

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Principal, Russo on Energy LLC

Tom Russo is an Energy and Environmental expert with unique FERC regulatory skills in siting hydropower, natural gas and liquefied natural gas infrastructure, NEPA environmental impact assessment and in how energy markets, prices and physical/cybersecurity affect infrastructure investments.


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“Tom did a great job. Well-spoken and well versed.”
VP of Corporate Development, Clearview Energy

“Tom Russo was great. He was very informative.”
Connecticut Public Utilities Regulatory Authority

“Tom was an excellent speaker. It was clear to me that he is very knowledgeable about the natural gas industry. He was also friendly and made the material very interesting.” – FERC
INSTRUCTIONAL METHODS

Case studies, PowerPoint presentations, classroom exercises will be used in this course.

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 12 credits for the course. There is no prerequisite for this course. Program Level: Beginner, Delivery Method: Group-Live, Advanced Preparation: None

EUCI is authorized by CPE to offer 8.0 credits

ONLINE COURSE DELIVERY & PARTICIPATION DETAILS

We will be using Microsoft Teams to facilitate your participation in the upcoming event. You do not need to have an existing Teams account in order to participate in the broadcast – the course will play in your browser and you will have the option of using a microphone to speak with the room and ask questions, or type any questions in via the chat window and our on-line administrator will relay your question to the instructor.

• You will need to join the appropriate meeting at the appropriate time.
• You will receive a meeting invitation will include a link to join the meeting.
• Separate meeting invitations will be sent for the morning and afternoon sessions of the course.
  o You will need to join the appropriate meeting at the appropriate time.
• If you are using a microphone, please ensure that it is muted until such time as you need to ask a question.
• The remote meeting connection will be open approximately 30 minutes before the start of the course. We encourage you to connect as early as possible in case you experience any unforeseen problems.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

You must be logged in for the entire presentation and send in the evaluation after the online course is completed.

COURSE RECORDING

A recording of this program will be available for three days from either the end of the program (or three days from the date of purchase, if you purchase the recording after the session ends). It is presented in four-hour sessions and can be watched an unlimited number of times for three days (for the registrant). There is no additional cost beyond the registration fee.
### PLEASE SELECT

- **BUNDLE PRICE:** INTRODUCTION TO THE NATURAL GAS INDUSTRY, INFRASTRUCTURE AND REGULATIONS AND NATURAL GAS PHYSICAL AND FINANCIAL MARKETS ONLINE COURSES: AUGUST 11-12, 2020: US $1695 (Single Connection)

- **INTRODUCTION TO THE NATURAL GAS INDUSTRY, INFRASTRUCTURE AND REGULATIONS COURSE ONLY:** AUGUST 11, 2020: US $895 (Single Connection)

- **NATURAL GAS PHYSICAL AND FINANCIAL MARKETS COURSE ONLY:** AUGUST 12, 2020: US $895 (Single Connection)

### Online Course Delivery & Participation Details

*See page 6 for information*

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**To Register Click Here,** or

**Mail Directly To:**

PMA Conference Management  
PO Box 2303  
Falls Church VA 22042  
201 871 0474  
Fax 253 663 7224  
register@pmaconference.com

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

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### CREDIT CARD INFORMATION

**Name on Card**

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**Account Number**

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**Exp. Date**

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

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**Billing Address**

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**Billing City**

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**Billing State**

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**Billing Zip Code/Postal Code**

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**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.

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### 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 July 10, 2020 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 office.

EUCI reserves the right to alter this program without prior notice.