

ATTEND A COMPREHENSIVE & INTERACTIVE 2 – DAY COURSE FOR A COMPLETE UNDERSTANDING ACROSS THE VALUE CHAIN ON

# THE FUNDAMENTALS *of* NATURAL GAS

SAVE 10% ON JOINT ATTENDANCE  
& TEAM DISCOUNTS  
*(See back page for details)*

## KEY DRIVERS & TRENDS TO BE COVERED

- Natural Gas Components, Units, & Conversions
- Gas Formation, Reservoirs & Reserves
- Gas Exploration & Production
- Gas Processing & Transportation
- Coal Seam Methane
- The LNG Chain: Upstream, Liquefaction Plant, Shipping, and Regasification
- Gas Demand and Storage
- Gas Commercialization Options: Electricity Generation, Gas-To-Liquids, Residential Gas Markets, Petrochemicals & Transport Fuel
- Comparative Economics of LNG vs GTL
- Components of Pipeline Gas and LNG Sales Agreements
- Gas Pricing and Spot vs Long Term Contracts
- LNG Project Structures
- Global Gas Trade (Pipeline & LNG): Current Snapshot, Future Trends, and Key Players

## COURSE DIRECTOR

**Vivek Chandra**

INTERNATIONAL ENERGY EXECUTIVE  
& BEST SELLING PENNWELL AUTHOR  
OF

“FUNDAMENTALS OF NATURAL GAS:  
AN INTERNATIONAL PERSPECTIVE”

## DATES & VENUES

Dubai, UAE

22 – 23 April 2009

InterContinental Dubai  
Festival City

*Held during the Middle East  
Petroleum & Gas Week,  
18 – 23 April 2009*

Organised by:



THE CONFERENCE CONNECTION INC.  
*Connecting Global Businesses.*

REGISTER ON OUR WEBSITE AT [WWW.CCONNECTION.ORG](http://WWW.CCONNECTION.ORG)

# THE FUNDAMENTALS *of* NATURAL GAS

## COURSE OBJECTIVES

This 2-day intensive course will give the delegates a solid understanding of the entire natural gas value chain, from its chemical composition, units, exploration and production through processing and transport, and analysis of its myriad uses from power generation, liquids production, transport fuel and petrochemicals.

## COURSE METHODOLOGY

The course will include detailed discussions of Liquefied Natural Gas (LNG) and Gas to Liquids (GTL), as well as components of gas sales agreements, including pricing drivers and formulas. The course will also cover a discussion of global gas trade and future trends. Delegates will be encouraged to contribute to discussions, with their own experiences and questions.

## STUDY AIDS



All delegates will receive a Workbook of about 230 pages covering an extensive examination of the natural gas industry, as well as a copy of Pennwell's bestselling book, "Fundamentals of Natural Gas," providing a valuable future reference material.

## WHO SHOULD ATTEND

- Oil and gas executives of all levels, from young entrants to seasoned professionals, including those with technical and operational backgrounds, who need to understand the entire natural gas value chain
- Commercial, business development, and strategic executives from the international energy industry, government bodies, national oil companies, financial institutions, and oil field service companies
- Legal and business analysts/strategic planners from companies and organizations that work with entities involved in natural gas value chain
- Energy and commodity traders, contract implementation & spot traders, oil/fuel & pipeline gas traders
- Project financiers, gas advisory consultants, economists & policy makers
- Power and petrochemical industry executives, and others that need a broad knowledge of natural gas and its uses

## CERTIFICATE OF ATTENDANCE



All participants who successfully complete the full 2-day course, will be given a Certificate of Attendance.

## WHY YOU SHOULD ATTEND

*Upon completion of the course, delegates will be able to*

- **UNDERSTAND** the gas value chain and its growing share of the global energy mix
- **LEARN** how gas is formed, explored, produced, processed, transported and consumed, with examples from all over the world
- **COMPREHEND** the differences between confusing terminology and units such as LNG, NGL, LPG, CNG, MMbtu, therms, MTA, Joules and other jargon
- **CALCULATE** between gas units and energy equivalents, as well as gas consumption rates of power plants, liquid production plants, and other consumers of natural gas
- **GAIN** a clear understanding of the various gas transportation and processing options, including pipelines and LNG
- **DISSECT** a gas sales contract into its important components, including gas prices, indexing, delivery and receipt obligations and terms
- **FORECAST** trends in the global gas trade and know the key players, both present and future, who will drive the industry

## ABOUT YOUR COURSE DIRECTOR

Vivek Chandra is currently working as a senior executive with an Asia-Pacific energy company. He was previously working in the Middle East and his extensive international gas experience includes seven years with ARCO International Oil and Gas Company, six years with Schlumberger Overseas, and five years developing gas and other energy projects for UAE government entities, serving in a variety of technical, financial and commercial roles in the United States, South East Asia, and Middle East. He has worked on LNG as well as gas pipeline export projects.

He has a Bachelor of Science degree in Geophysical Engineering from the Colorado School of Mines, a Masters of Science in Petroleum Energy Management and Policy from the University of Pennsylvania, and also has completed a graduate degree from the French Petroleum Institute in Petroleum Economics and Management.

Vivek Chandra is the author of **Fundamentals of Natural Gas**, a bestselling hardcover book published by Pennwell, publishers of Oil and Gas Journal and other leading industry books and manuals.

## ABOUT THE ORGANISERS

CONFERENCE CONNECTION is dedicated to the provision of global business information through high-profile, premier & sector-focused business events, including: international conferences, corporate events, and symposia, for the oil, gas & energy industries and other business sectors internationally. Dedicated to providing an independent platform for interaction and discussion for the latest business & industry strategies, it strives to combine excellence and professionalism through linkage with inter-governmental, professional and industry groups worldwide. For a full list of courses, conferences & other activities, please email [info@cconnection.org](mailto:info@cconnection.org) or visit our website at [www.cconnection.org](http://www.cconnection.org)

CHECK REGISTRATION PAGE FOR TEA

# COURSE OUTLINE

## DAY ONE

### THE BASICS

- I. INTRODUCTION**
  - What is natural gas?
  - Natural gas vs oil
- II. CHEMISTRY OF NATURAL GAS**
  - Components of natural gas:
    - Methane
    - Ethane, Propane, Butane, Condensate and other components
  - Terminology: NGL, LNG, LPG, CNG, Rich Gas, Sour Gas, etc
- III. NATURAL GAS UNITS**
  - Converting gas volume units
  - Calorific values of gas components and products
  - Calculating energy equivalents
- IV. GAS FORMATION & RESERVOIRS**
  - Gas formation
  - Reservoir rock characteristics
  - Reservoir structure
  - Types of gas traps and gas fields
  - Producing gas liquids on surface
- V. GAS RESERVES**
  - Classifications
  - Global distribution of reserves
  - Gas reserves versus oil reserves
- VI. GAS EXPLORATION & PRODUCTION**
  - Principles of geology & geophysics
  - Use of seismic and well logging in gas exploration
  - Drilling cycle
  - Sub-sea production systems
  - Coal seam methane
- VII. PROCESSING & TRANSPORTATION**
  - Gas processing plants
  - The gas chain
  - Gas pipelines
  - Fluid dynamics
  - LNG vs pipeline economics
- VIII. THE LNG CHAIN**
  - Upstream and midstream
  - Liquefaction plants
  - LNG Shipping
  - Regasification terminals
  - Chain economics

## DAY TWO

### GAS USAGE, AGREEMENTS & TRADE

- IX. GAS STORAGE & SWING**
  - Gas demand cycles
  - Types and cost of gas storage
- X. GAS USAGE: ELECTRICITY GENERATION**
  - Comparative cost of power generation
  - Gas fired power generation
  - Calculation of gas consumption
- XI. GAS USAGE: GAS-TO-LIQUIDS**
  - GTL process
  - Case Study: Oryx GTL plant in Qatar
  - Quality of GTL fuels
  - Gas feedstock required for GTL
  - GTL vs LNG full chain economics
- XII. GAS USAGE: RESIDENTIAL GAS, PETROCHEMICALS & TRANSPORT FUELS**
  - Residential gas network
  - Gas as an important feedstock –
    - Chemicals
    - Fertilizers
  - CNG & LPG as transport fuel
  - Energy density of fuels
- XIII. GAS SALES AGREEMENTS**
  - Components of LNG and pipeline gas sales agreements
  - Duration of sales contracts – spot versus long term
  - Take-or-pay obligations
  - Gas pricing terms, indexation and historical trends
- XIV. LNG PROJECT STRUCTURES**
  - Types of LNG project structures with select case studies
- XV. GLOBAL GAS TRADE**
  - Gas demand trends
  - Energy mix in select countries
  - Growth in LNG and pipeline trade
  - LNG balance between Atlantic and Pacific Basin
  - Coal seam methane projects
  - Growth of spot LNG trade
  - Review of key LNG exporters: Algeria, Qatar, Australia, Indonesia and Nigeria
  - Review of key LNG importers: Japan, Korea, China, Europe and US

**Registration on Day 1 is at 8.00am. Sessions start promptly at 9.00am and end at approximately 5.30pm on each day. Lunch will be served between 12.30pm and 2.00pm with mid-morning and mid-afternoon refreshments.**

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**M & JOINT ATTENDANCE DISCOUNTS!**

# 5 EASY WAYS TO REGISTER



The Conference Connection Inc,  
PO Box 1736 Raffles City Post Office Singapore 911758  
Conference Connection Administrators Pte Ltd  
135 Middle Road #05-01 Bylands Building, Singapore 188975



Singapore (65) 6338-0064



info@cconnection.org



Singapore (65) 6338-4090



www.cconnection.org

## DATES & VENUE:

### DUBAI, UAE

InterContinental Dubai Festival City  
PO Box 45777 Dubai, UAE  
Tel: (9714) 701-1111 Fax: (9714) 232-9098

## REGISTRATION FEES:

Registration fees will include attendance at all sessions, daily luncheon and coffee breaks and one set of course documentation. **Travel and accommodation costs are not included.**

**Full Fee: US\$1995** per person

**Team Fee: US\$1795** per person for the second and subsequent delegate from the same company and billing address. To qualify for team fee, registrations have to be received at the same time.

**Joint Attendance Fee: US\$1795** per person for attendance with the Middle East Petroleum & Gas Conference, 19 - 21 April 2009 (for details please go to [www.cconnection.org/MPGCHome.htm](http://www.cconnection.org/MPGCHome.htm))

*(All discounts are mutually exclusive and on a per person basis)*

## HOTEL ACCOMMODATION:

Delegates qualify for specially discounted rates at the host hotel. Please request for a hotel/visa form when registering. Delegates will be responsible for their own hotel and visa arrangements.

## VISA APPLICATION & PROCEDURES:

Visa application procedure for delegates will be sent with the hotel reservation form.

## PAYMENTS:

- All payments must be made in US Dollars by Inter-Bank Transfers within 14 days of receipt of invoice (Bank details will be provided upon receipt of registration).
- Please quote event name, invoice number and delegate name for bank transfers. Please instruct your bank to remit the full amount, nett of bank charges.

## REGISTRATION CONDITIONS:

- All registrations must be on the prescribed form or in writing and will be on a confirmed basis unless otherwise notified in writing. All paid registrations will receive written notification.
- The organizers reserve the right not to accept prior and on-site registrations without payment. Delegates whose payments are not received before the event are required to furnish proof of payment on-site. Staff at the event will request a credit card guarantee without proof of payment.
- The organizers reserve the right to impose conditions of entry for walk-in delegates.

## CANCELLATION AND SUBSTITUTION POLICY:

- Cancellations notified in writing by letter received and acknowledged **1st cut off date** will be levied an administrative fee of 5% for paid cancellations and 10% for unpaid cancellations.
- Paid and unpaid cancellations notified between **1st - 2nd cut off date**, will be charged 50% of the invoiced fee and given one set of course materials (post-event).

Venue	1st Cancellation Cut Off Date (Paid Registrations – 5% of fee & Unpaid Registrations – 10% of fee)	2nd Cancellation Cut Off Date (50% Refund plus Workbook)
Dubai	28 March 2009	4 April 2009

- No refunds whatsoever will be given after **2nd cut off date** but delegates can be substituted if the organizers receive prior notification (please note that 2 weeks notice of substitution is required for visa application/cancellation as the case may be).
- For registrations invoiced and unpaid but subsequently cancelled after **2nd cut off date**, 50% of the invoiced fee will be charged and one set of course materials will be provided (post-event).

**DISCLAIMER: The organizers will not accept liability for non-approval of visas, individual transport delays and transport disruption, and in such circumstances, our normal cancellation rules will apply. Where matters beyond the reasonable control of the organizers impair or prevent the organizers from being able to perform their obligation under this event, the client releases the organizers from any liability, incidental or consequential, to such matters.**

## REGISTRATION FORM

Please print in block letters and return to:

The Conference Connection Inc, PO Box 1736 Raffles City Post Office  
Singapore 911758 or FNGC Secretariat at 135 Middle Road #05-01  
Bylands Building, Singapore 0188975. Tel: (65) 6338-0064  
Fax: (65) 6338-4090 Email: [info@cconnection.org](mailto:info@cconnection.org)  
Website URL: [www.cconnection.org](http://www.cconnection.org)

# THE of FUNDAMENTALS NATURAL GAS

## ALL REGISTRATIONS MUST BE ACCOMPANIED BY PAYMENT

YES! Please register me for:

**FUNDAMENTALS OF NATURAL GAS** Course:

CC3133/09 WB

First Name (Mr, Dr, Ms) \_\_\_\_\_

Surname \_\_\_\_\_

Company \_\_\_\_\_

Job Title \_\_\_\_\_

Nationality \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Country \_\_\_\_\_ Postal/Zip Code \_\_\_\_\_

Tel \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

Name of Approving Manager (Mr, Dr, Ms) \_\_\_\_\_

Main Business Activity \_\_\_\_\_

THIS CONTAINS YOUR UNIQUE REGISTRATION REFERENCE  
PLEASE DO NOT REMOVE MAILING LABEL

## Please Tick (✓) Accordingly

### 1. Registration Fees

- Full Fee:** US\$1995 per person
- Team Fee:** US\$1795 per person for 2nd and subsequent delegate from same company & billing address
- Joint Attendance Fee:** US\$1795 per person, for attendance with the Middle East Petroleum & Gas Conference 2009

### 2. Payment

- I am sending payment by telegraphic transfer/bank draft.
- I will need an original invoice

### 3. Accommodation

- Please send me a hotel/visa form

### 4. Mailing List

- Please include me in your mailing list for future events

**Payment must be received before course date.**

(For more than one delegate, please photocopy the registration form)