
**ETHYLENE INDUSTRY IN NORTH AMERICA:
MARKET METRICS, OPERATIONS & ECONOMICS**

A PETRAL WORLDWIDE EDUCATIONAL SEMINAR

**Wednesday, Thursday & Friday morning – October 21st through 23rd, 2009
Burnett Staffing Seminar Center – 9800 Richmond Avenue
Houston, TX**

Registration Fee: \$1,895.00 (U.S.)

Petral Worldwide's seminar is a true educational experience:

- ❖ Classes are limited to a maximum of 20 attendees so that time is available to answer questions and discuss pertinent issues
- ❖ Attendees will receive a notebook containing copies of the slides, appropriate text, a glossary of important industry terminology and a CD containing all course graphics in full color.
- ❖ Attendees will spend two and a half days in seminar sessions (9am through 5pm on Wednesday & Thursday; 9am through 11:30am on Friday)

Feedstock marketers and feedstock buyers deal with the ethylene industry's complexity and make decisions regarding feedstock sales and feedstock purchases on a daily basis. This seminar provides the basic framework in which to understand the market metrics, operations and economics of the ethylene industry in the U.S. and Canada. Specifically, this seminar provides insight into the various factors that limit the feedstock flexibility of each ethylene plant. This seminar explains how to estimate ethylene production costs and feedstock parity values. The seminar shows which coproducts have the most impact on ethylene production costs and feedstock values. This seminar provides you with tools to understand why ethylene producers change feedslates and what factors impact coproduct prices.

We will conduct the June 2009 session of the seminar at the Burnett Staffing Seminar Center located at 9800 Richmond Avenue. For attendees from out of town, there are 2 hotels located nearby – the Hilton Houston Westchase (9999 Westheimer; 713.974.1000) the Houston Marriott Westchase (2900 Briarpark Drive; 713.978.7400).

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(713) 977-0114 or (713) 977-4831

ETHYLENE INDUSTRY OPERATIONS & METRICS

SEMINAR DISCUSSION TOPICS

Ethylene Industry Market Metrics

- ❖ End use markets for ethylene, propylene, butadiene, and aromatics
- ❖ Producers, capacity and location of ethylene plants in the Canada, Mexico & the U.S.
- ❖ International trade in ethylene and its primary derivatives
- ❖ International trade in propylene and its primary derivatives
- ❖ International trade in aromatics and their primary derivatives

Ethylene Industry Geographical Metrics

- ❖ Why most U.S. ethylene capacity is located in Texas and Louisiana
- ❖ Why most Canadian ethylene capacity is located in Alberta
- ❖ Why most ethylene capacity in Mexico is located in Veracruz
- ❖ Ethylene plants in Canada, Mexico and the U.S.: similarities and differences
- ❖ Ethylene and propylene supply/demand in the Houston Ship Channel, South Texas, and Louisiana
- ❖ Long term viability of plants in West Texas, the Mid-Continent, and Alberta

Feedstock Metrics: Yields & Consumption

- ❖ Purity ethane yields & usage
- ❖ E/P Mix yields & usage
- ❖ Propane yield & usage
- ❖ Normal butane yield and usage
- ❖ Natural Gasoline & light naphtha yields & usage
- ❖ Gasoil yields & usage for atmospheric gasoil and vacuum gasoil
- ❖ Condensates yields & usage
- ❖ Why not crack Y grade? Field grade butane? Whole crude?

Ethylene Plants & Feedstock Flexibility

- ❖ Purity ethane crackers
- ❖ E/P crackers
- ❖ E/P/B crackers
- ❖ LPG/naphtha crackers
- ❖ LPG/naphtha/gasoil crackers
- ❖ Naphtha/condensate/gasoil crackers

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Metrics for Capital Costs & Coproduct Production

- ❖ Capital costs for worldscale plants versus market scale plants
- ❖ Economies of scale: Myth? Reality?
- ❖ Capital costs & the impact of feedstock choices
- ❖ Coproduct processing units & coproduct production volumes
- ❖ Plant design, feedstocks, & coproducts production
- ❖ Plant design, coproducts, & integration with refineries
- ❖ Plant design & the potential for integration with gas processing plants

Refining Industry Trends & Ethylene Plant Operations

- ❖ Propylene: motor gasoline or chemical markets?
- ❖ Reformulated gasoline regulations
- ❖ Benzene/toluene/xylenes versus pyrolysis gasoline
- ❖ Purity butadiene versus mixed butylene/butadiene streams

Coproduct Pricing, Feedstock Valuation, & Production Costs

- ❖ Propylene pricing: refinery grade, chemical grade, and polymer grade
- ❖ Transfer pricing & gasoline market values for aromatics and butylenes/butadiene
- ❖ Spot market pricing for other purity coproducts
- ❖ Pricing discounts for crude coproduct streams
- ❖ Price variations and impact on feedstock parity values

Ethylene Production Costs

- ❖ Full cash costs
- ❖ Production costs based on discounted prices for crude coproduct streams
- ❖ Co-product price variations and impact on feedstock parity values

Emerging Ethylene Industry Issues

- ❖ Impact of LNG imports on ethylene feedstock supply
- ❖ Globalization of the primary petrochemical industry
- ❖ Growing reliance on imported heavy feedstocks
- ❖ Production costs in North America versus the Middle East

Industry Infrastructure: Storage, Pipelines, Railroads, & Barges

- ❖ Underground storage capacity & storage operators
- ❖ Ethylene & propylene pipelines: infrastructure in transition

Who should attend?

- ❖ NGL marketers with responsibility for sales to petrochemical feedstock consumers
- ❖ International LPG traders requiring an understanding of the ethylene industry in North America
- ❖ Accountants needing an understanding of the ethylene industry
- ❖ Investment bankers needing a framework in which to evaluate investment opportunities
- ❖ Corporate planners and business development personnel
- ❖ Lawyers requiring a working knowledge of industry terminology and contract issues

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The Instructors

Dan Lippe holds a B.S. degree in Chemical Engineering and an M.B.A. He has 30 years of experience in the industry and is President of Petral Worldwide. He is widely quoted and is a popular speaker at industry meetings and events. Dan's areas of expertise include ethylene and coproduct price forecasting, ethylene supply/demand forecasting, and ethylene feedstock economics.

Jim Cutler has 40 years industry experience. Jim's areas of expertise include feedstock purchasing, development of integrated refinery/petrochemical planning systems and petrochemical industry business development. He has held a number of senior executive positions and has been a director of several petrochemical companies. Jim is currently Vice President of Petral Worldwide.

Will Ledoux has a degree in Chemical Engineering and a Ph.D. in physical chemistry. Will has 30 years industry experience in exploration and production research and he has taught chemistry at the college level. Will is currently Director of Technology for Petral Worldwide.

The cost of the seminar (Wednesday morning through Friday noon Oct 21-23, 2009) is \$1,895.00 (U.S.) per person. The seminar fee includes a copy of all seminar material, three continental breakfasts, two seated lunches, and appropriate refreshment breaks.

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SEMINAR REGISTRATION FORM

**Ethylene Industry in North America: Market Metrics, Operations, & Economics
Oct 21st through Oct 23rd, 2009; Burnett Staffing Seminar Center @ 9800 Richmond Ave.**

<u>Attendee Name</u>	<u>Attendee Title</u>	<u>Seminar Fees</u> (\$1,895.00 U.S.)

ATTENDEE & COMPANY INFORMATION:

Company: _____
Street Address _____
City & State _____
Telephone _____
FAX #: _____
Email address: _____

Total Attendees: _____ x \$1,895.00 = \$ _____ (seminar registration fees)

To register: **fax application form to:713.977.6766**

**We also accept payment by company check, MasterCard, Visa or American Express.
For your security, please contact us at 713. 977.0114 to process credit card payments.**