The 11th INTERNATIONAL
FUJAIRAH BUNKERING & FUEL OIL FORUM
25 – 27 MARCH 2019, AL DIAR SIJI HOTEL
FUJAIRAH, UAE

In Conjunction with the Fujairah Bunkering Week
23-27 March 2019

Organised by
CONFERENCE CONNECTION

Hosted by
GOVERNMENT OF FUJAIRAH
UNITED ARAB EMIRATES
Port of Fujairah

Held Under the Patronage of His Highness Sheikh Hamad Bin Mohammed Al Sharqi,
Member of the UAE Supreme Council & Ruler of Fujairah

REFINING ECONOMICS – DETAILED COURSE OUTLINE

Fujairah 24-25 March 2019

Delegates will be required to bring their own laptop

I. INTRODUCTION TO REFINING (Day 1 Morning Session)

Refining is a highly interconnected, global business yet regional variations persist. This initial workshop module will provide a short overview of the global refining sector.

- History of the industry
- Macro refining trends and drivers
- Supply chain roles and contributors

II. CRUDE OIL BASICS

The next part of the session focuses on crude oil properties, assay interpretation, and blending techniques. The discussion will focus on the relationship between crude oil properties and economic value and how refiners can optimize financial returns by utilizing shrewd blending strategies.

- Bulk crude oil property relationships with refining value
  - Signature properties: API gravity and sulfur content
  - Other commercial value drivers: distillation range, Total Acid Number, etc.
- Crude oil assays
  - Sources and types of assays (commercial/marketing versus project/planning quality)
  - Interpreting assay data
- Crude oil blending exercise (Laptop required!)
  - Weight versus volume-based properties
  - Blending techniques and strategies for maximizing refining returns

The cost of crude oil is approximately 70-80% of the cost of operating refineries. Understanding crude oil supply/demand trade patterns is vital to achieving a profitable refining business.

- Regional oil consumption growth
- Global crude oil trade flow
- US shale oil as a market disrupter

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III. PETROLEUM PRODUCTS (Afternoon Session)

Environmental concerns are resulting in increasingly stringent transportation fuels specifications, and this has a significant impact on refinery operations and profitability. This session will review product consumption trends and changes to key specifications.

- Product demand trends
  - Gasoline
  - Distillate
  - Fuel oil (IMO 2020 developments)
- Product specification relationships with value

IV. CRUDE OIL AND REFINED PRODUCT PRICING

Determining prices for crude oil and refined products can appear daunting at first. This module removes some of the mystery by introducing basic techniques and methodologies used by refiners around the world to translate reference market prices to the refinery gate. We will also cover some of basic concepts used by forecasters to develop forward prices for various petroleum commodities.

- Basic petroleum market pricing concepts
  - Benchmarks
  - Quality/Location drivers
  - Crude oil refining values (Gross Product Worth)
  - Key pricing differentials (Light/heavy, sweet/sour, etc.)
  - Overview of commercial pricing formulas
- Transportation/Logistics costs
  - Modes of transportation
  - Worldscale tanker costs & Pipeline tariffs
  - Terminal and handling costs
- Pricing of crude oils in Asia
  - Middle East Benchmarks
  - Price Formulas
  - Timing
  - Other crude oils
  - Quality adjustments

V. REFINERY CONFIGURATIONS & COMPLEXITY (Day 2 Morning Session)

Refineries vary in configuration type and complexity depending on many factors such as market demand and company investment objectives. We will learn about the four major configuration types and where they tend to be clustered geographically. We will also examine how size and complexity can play a determining role with respect to refinery profitability and competitive positioning. We will also review a number of the major refining technologies that are deployed world-wide with a focus on heavy oil upgrading

- Refinery configuration types
  - Topping / Hydro-skimming
  - Cracking / Coking
  - Relative margins
- Crude oil distillation fundamentals

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- Conversion Processes
  - Hydrocracking / Fluid catalytic cracking
  - Coking
  - Vis-breaking / Solvent de-asphalting
- Upgrading Processes
  - Hydrotreating / Benzene reduction
  - Catalytic reforming & Isomerization
  - Alkylation
- Other Processes (offsites, utilities, petrochemical, renewable fuel)

VI. FUNDAMENTALS OF REFINING ECONOMICS (Day 2 Afternoon Session)

Refining companies around the world depend heavily on optimization models to continuously maximize profitability, yet often, there are few people in the organization that truly understand the power that these tools wield in resolving complex questions of economic direction. This module will provide delegates with a glimpse inside the "black-box" before demonstrating the economic value of a sound refinery planning and optimization program.

- Fundamentals of refinery economics and margin optimization overview
- Tactical planning applications for maximizing refinery financial performance
  - Crude oil evaluation / Production planning / Inventory scheduling / Shutdown planning
  - Incremental margins/operating incentives

This module will lay out the basic economic metrics used by companies around the world to evaluate the financial positioning of refining assets. We will discuss several types of refinery margins used to describe profitability and learn how they are calculated. We will then cover the different elements that make up fixed and variable operating costs. The importance of capital spending will be examined, as will the effects of changes in working capital.

- Financial Metrics
  - Gross, variable, net margins
  - Fixed and variable cost development
- Capital costs
  - Categories (Sustaining, maintenance, environmental/regulatory versus discretionary)
  - Replacement Cost New (RCN) estimation and uses
- Working capital requirements

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