

Refineries of the Future

Friday, March 25

8:00 am - 5:00 pm (CST) / 6:00am- 3:00pm (PST)

Topics Addressed

The Energy Transition is reshaping refining. Refiners are reducing portfolios, repurposing sites and reinventing what it means to be a refiner in the mid-21st century. Gain a fundamental understanding of how the energy transition will impact refining and the role petrochemicals have to play.

Course Content

- With trillions of dollars of assets and trading volumes in play, many are forced to reinvent what it means to be a refiner in the present and future energy landscape.
- How will refining portfolios change against the backdrop of the energy transition? For some refiners, it means investing in petrochemical integration as they adapt to a lower carbon future where chemicals may increasingly drive growth and profitability. The training focuses on the technical and economic challenges refiners are facing plus provides insight on how and why refiners might expand their petrochemical refining capabilities.

Key Benefits

- Refining operations and technical configuration, economics, and margin optimization
- Key drivers behind the energy transition and short, medium, and long-term commercial outlook
- Refining petrochemical integration including olefins and aromatics and Crude-Oil-to-Chemicals (COTC)
- Refinery flexibility and how to optimize and/or shift yields without making a major capital investment
- Ways to increase the percent of barrel to chemical feedstocks (COTC).
- Use of greener power and hydrogen in refining
- Technical and design approaches to accommodate a net-zero future

Trainers

Dan Evans,
VP, Refining &
Marketing



Dr. Charlesworth,
Exec. Director,
Chemical Consulting



Debnil Chowdhury
Exec. Director,
Refining, Americas



Premasish Das
Exec. Director,
Oil Markets, Asia/ME



Hedi Grati
Exec. Director,
Refining, Europe/CIS



Rajiv Narang
Director, Process
Economics Program



Course Outline

Fundamentals of Refining

- Refinery technical configuration and operations
- Refinery economics and margin optimization

Energy Transition

- Fundamentals
 - What is the definition and scope of Energy Transition?
 - What are the drivers (e.g. ESG)?
- Commercial Outlook
 - What is the industry response (e.g. electric vehicles, hydrogen economy, crude-oil-to-chemicals, etc.)?
 - What is the outlook, short, medium, and long term?

Refining petrochemical interface/integration

- Refined products as petrochemical feedstocks
 - Olefins and Aromatics
 - Regional balances and outlooks
- Process Technology as a function of the percent of chemical feedstocks (a.k.a. Crude-Oil-to-Chemicals)

Refinery Flexibility: What can refiners do with the configuration that they have to optimize/shift yields without making a major capital investment?

- To increase the percent of the barrel to chemical feedstocks (COTC)
- Bio-conversion is to include both co-processing of bio-feedstocks and full bio-conversions

Greener Refineries: Environmental Impact Overview

- Quantification of Greenhouse Gases (GHGs)
- Use Greener power and hydrogen

Refineries of the Future: Aspirational Design to Net Zero

- Profile of refiner's aspirational designs and technical approaches to net-zero designs
- Quantitative impact on a world-scale refinery carbon footprint of various technical configurations and product slate considerations (e.g. inclusion of the bio-diesel, chemical decarbonization, products, renewable power generation, and/or plastics recycling via chemical pyrolysis, etc.)