

## Refinery Economics.

**Consultant/Trainer:** Eric-Hans Wolff.

The Petrogenium Refinery Economics course will provide insight into many aspects of operating the modern refinery as a business, including technical information on refining processes, crude oils and processing options, the place of the refinery in the value chain, refinery cost structure and management, optimization and profit margin, energy and oil loss reduction, management tools and techniques used for economic evaluations in refineries and future trends.

### Participants

This Petrogenium course can be tailored for awareness/inexperienced staff, for intermediate and for experienced personnel. Furthermore the course can be customized for a specific refinery, plant or unit. The option for post-course consultancy/help-desk support is also available.

Participants may include: all refinery technical personnel; operations' process engineers and process managers; technical services engineers and managers; refinery planners; newly-hired refinery personnel and current semi-technical personnel who require introductory training to acquire the broader perspective; non-refinery professionals in the Oil & Gas industry or related sectors, such as consultants, contractors, suppliers and other interrelated companies interested in the oil refining business; employees of private equity firms and other investors interested in the refinery business; environmental professionals, insurance representatives, government officials, energy industry journalists & reporters and other professionals who desire a better understanding.

### Learning objectives

State the role of the main refining processes, operating characteristics, crude choice, processing options and desired products, crude and products quality parameters, refinery economics and planning; describe the place of the refinery in the value chain from 'well to wheels', including petrochemicals; methodology of optimization & product improvement; recognize the need for performance monitoring, Quality & Assurance; apply analytical tools to refinery management; explain the challenges (including environmental), opportunities and future trends in the refining industry; understand and use the crude oil refining terminology.

This course includes presentations, short videos, exercises, interactive sessions (participants can propose relevant topics upfront to discuss in class) and an (optional) examination with certification.

## Programme

### Day 1

#### Safety & Introductions

- *Welcome, safety, arrangement*
- *Introduction of participants*
- *Programme & course objectives*

#### Introduction

- *Global energy demand*
- *Global crude oil & products demand*
- *Crude oil reserves (incl video)*
- *Refinery position in the value chain*

#### Crude oil & products

- *Crude oil origin, types & movements (incl video)*
- *Crude oil products*
- *Crude oil product specifications*
- *Crude oil pricing (incl video)*
- *Crude oil product pricing*

#### The Refinery

- *Refinery segments*
- *Simple refinery*
- *Semi-complex refinery*
- *Complex refinery (incl exercise)*
- *Main refinery units (incl videos, exercise)*
- *The role of catalysts*

### Day 2

#### The Refinery (complete)

- *Utilities*
- *Refinery fuel*
- *Refinery steps*
- *Blending (incl video)*
- *Costs of petroleum processing plants*
- *Refinery layout*

#### Refinery Economics

- *Refinery margin*
- *Yield & expense statement (incl exercise)*
- *Linear programming model*
- *Crude oil selection*
- *Crude oil WC, exposure, natural length*

#### Refinery Planning

- *Long-term planning*
- *Short-term planning*
- *Scheduling*
- *Appraisal*

#### Environmental regulations

- *Restrictions & opportunities*
- *IMO 2020 (incl video)*

#### Hydrocarbon mass balance & loss

- *Hydrocarbon mass balance*
- *Hydrocarbon loss*
- *Ocean Loss*

## Day 3

### Maintenance & turnaround

- *Maintenance & reliability*
- *Turnarounds (incl video)*

### Oil-Chemicals Interface

- *Petrochemicals*
- *Products exchange*

### Refinery process control

- *Drawings*
- *DCS*
- *APC (incl video)*

### Performance monitoring

- *Key performance indicators*
- *Review meetings*
- *Benchmarking*

### Quality & Assurance

- *Management system*
- *Auditing*

### Trends

- *Future of fossil fuels*
- *Future of refineries*

### Miscellaneous

- *Participants topics*
- *Further reading*
- *Video inventory*

### Questions & Answers

- *Participants topics*

### Examination & Certification

- *Sections 1-13 will be closed with multiple choice test questions*

### Course Review & Feedback

*Because Experience Matters*

## Contact

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