

This document outlines Mercurious' proposal for a 2-day training course: Fundamentals of Gas, Gas Markets & Trading. The course is specifically designed to expand delegates' knowledge of gas with respect to the organization of gas markets, products and trading.

Learning objectives

Acquiring insight and knowledge of:

- The fundamentals of gas, gas products and gas markets
- The physicality of natural gas
- Physical features of natural gas and gas products
- The working of processes in the gas industry
- Up-, mid- & downstream
- Production, transportation, storage, processing and consumption of gas
- Markets, market participants & their roles
- The working of European & global gas markets
- Integration of the global gas markets & coupling of European gas infrastructures

Target group

This Mercurious' training course is particularly suitable for Trading staff, including:

- Controllers / Credit control
- Finance & control staff
- Scheduling-related staff
- Legal staff
- Compliance officers
- Accountants
- Back Office staff
- Mid office staff
- ICT staff
- Sales managers & staff
- Project managers

Training

The training sessions have a strong interactive character whereby the contribution of participants is of utmost importance. A picture of the working of the markets, recent developments, risks and other relevant issues are given during the training sessions by means of theory, questions and theses.

2- DAYS FUNDAMENTALS OF GAS, GAS MARKETS & TRADING

DAY 1

Session 1

Gas fundamentals

- Quantification of volumes
 - Units of trading
 - Cubic meter
 - Watt versus Watthour
 - Therms
 - BTU
- Global gas reserves
 - European dependency on imports from outside Europe
 - Russia
 - Qatar
 - Algeria
 - Nigeria
- Physicality
 - Hydrocarbons
 - Emissions
 - Carbon dioxide (CO₂)
 - Nitrous oxide (NO_x)
 - No sulphur dioxide (SO₂)
 - Quality
 - Wobbe-index
 - High versus Low calorific gas
 - Types of natural gas

Session 2

Gas markets

- Gas producing companies
 - Gazprom
 - Statoil
 - GasTerra
 - Exxon Mobil
 - Royal Dutch Shell
 - BP
 - Total
 - Chevron
 - Conoco Phillips
- Geo-politics
- Relevant organizations
 - International Energy Agency (IEA)
 - European Federation of Energy Traders (EFET)

Session 3

Gas trading

- Reasons for trading
 - Physical reasons
 - Hedging
 - Arbitrage
 - Proprietary trading
- Exchanges versus OTC market
 - Exchange trading
 - Clearing
 - Margining & Collateralization
 - Platforms
 - ICE
 - APX-Endex
 - OTC trading
 - Master agreements
 - CSAs
 - Credit lines
 - Brokers
 - Trayport

Exercise

Trading screens

Simulation Gas trading – Procurement & Sales

Session 4

Gas products

- Spot markets versus Forward markets
 - Settlement
 - Physical delivery versus cash settlement
 - Spot transactions versus Forward transactions
 - Short term versus long term gas trading
 - Volatility
- Spot trading versus forward trading of gas
 - Peak vs. off-peak
 - Base load vs. peak load
 - Local/Historical differentials
 - 07.00-19.00
 - 07.00-23.00
 - 08.00-20.00

- Spot markets & products
 - Intraday market
 - Day ahead market
 - Individual hours
 - Block hours / Strips
 - BOW
 - BOM
 - BOY
 - WKND
 - WDNW
 - Curve trading
 - Month ahead, Quarter ahead, Year ahead
 - Quarters, Seasons (Summer/Winter), Calendar, Year
 - Balance of week, month, year
 - Gas contracts
 - Contract specifications
- Simulation** Gas trading - Speculation

DAY 2

Session 5

Gas storage

- Storage facilities & storage capacity
 - Empty gas fields & Empty salt caverns
 - Characteristics
 - Injection & withdrawal rate
- The reasons for operating gas storage facilities
 - Security of supply
 - Flexibility
 - Arbitrage
 - Speculation
 - Balancing
 - Peak shaving
 - Optimization

2- DAYS FUNDAMENTALS OF GAS, GAS MARKETS & TRADING

Session 6

Gas Transport & Transit

- Pipelines
 - Capacity versus volume
 - Watt (W)
 - Watthour (Wh)
 - Quality differentials
 - Quality conversation
 - Transmission system operators (TSOs)
 - Shipping & Program Responsibility (PR)
 - Balancing & balancing regime
 - Nomination process
 - Regulation
 - Limited available capacity due to long term contracts
 - UIOLI – Use it or lose it
 - UIOSI – Use it or sell it
- Vessels
 - LNG
 - What is it?
 - Technique & Features
 - Liquefaction & Regasification
 - Costs
 - LNG tankers
 - LNG terminals

Session 7

Gas consumption & processing

- Downstream
 - Consumption (consumers)
 - Gas-fired power plants
 - The power production process
 - Efficiency rate of the plant
 - Carbon intensity of the plant
 - Spark spread
 - Gross operational margin
 - Sales
 - Gas
 - Wholesale versus retail
 - Internal transfers between sales department and EDFT
- Sourcing
 - Origination

Exercise

Spark Spread calculation

Session 8

Pricing, Forecasting & Balancing

- Pricing
 - Wholesale vs. Retail pricing
 - Taxation
 - Subsidies
 - Differences per country
 - Historical price developments
 - Price drivers
 - Fundamental price drivers
 - Non-fundamental price drivers

Exercise

Price drivers

Simulation

Gas Dispatch