

This course is extremely practical. Participants play trading simulations, and have to solve various exercises. A steep learning curve and an increase of both knowledge and skills will be the result.

### Learning objectives

Acquiring insight and knowledge of:

- The working of gas markets
- Transport of gas: Shipping, pipelines & hubs
- TSOs & Balancing regimes
- Products traded in the gas markets
- The working & applications of those products
- Cross-border gas trading & the reasons for doing so
- Usual cross-border gas trading techniques & methods
- Cross-border gas trading
- Currency risk & FX trading
- Proxy hedging (dirty hedge)
- Correlation coefficients & correlation trading
- Arbitrage & statistical arbitrage

### Target group

This course is particularly suitable for compliant energy & commodity community including:

- Gas traders, energy traders & commodity traders
- Gas executives
- Gas asset & portfolio managers
- Risk managers
- Back office staff
- ICT experts & project managers
- Legal staff & compliance officers
- Employees of Finance & Control departments

### Training

This course is designed to provide participants with an overview of market participants, gas products, pricing, trading, storage, cross-border trading, cross-border connections, cross-border transport capacity and capacity auctioning.

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

### Content

This course covers two full days. While dealing with each subject, attention is given to the various characteristics, aspects, opportunities and risks attached to that subject.

# 2-DAYS CROSS-BORDER GAS TRADING

## DAY 1

### Session 1

#### Gas markets

- Working of the gas markets
  - Hubs
- Features of gas
  - Quality
    - High/low calorific
    - Wobbe-index
    - Quality conversion
- Transport
  - Pipelines vs. LNG
  - Regassification vs. liquefaction capacity
  - The effect of LNG on gas pricing
  - TSOs
    - Balancing regimes
- Pricing
  - Fundamental price drivers
  - Non-fundamental price drivers
  - Gaspec
  - Price formulas
  - Correlation with oil price
  - Benchmarks & indices

### Session 2

#### Gas trading

- Physical vs. Financial markets
- Spot & Forward products
  - Consumption curve; seasonality
    - Daily pattern
    - Weekly patterns
    - Yearly patterns
  - Definitions
    - Peak vs. off-peak
    - Base vs. peak
- Contract specifications
  - Physical delivery vs. Financially settled
- Forward curves
  - Backwardation & Contango
- OTC markets vs. Exchange trade
  - Clearing
  - Margining & Collateral
- Spread trading

### Session 3 + 4

#### Auctioning gas transport capacity

- Preferred auction of cross-border transport capacity
  - ENTSOG
  - Programme responsible parties (PRPs)
  - Interconnection points (IPs)
  - Strategies
- PRPs decide how to purchase the requested units of capacity.
- Optimization of bids, taken into account the capacity of the IPs, different prices & budget restraint.
- Forecast behaviour of competitors and consequences.

#### Simulation

##### Auction of (cross-border) gas transport capacity

Participants will be allocated a budget and will be assigned a target. Based on these two ingredients they have to participate in an auction and fulfill their tasks in the best way

## DAY 2

### Session 5

#### Cross-border gas trading

- The reasons for it explained
  - Sourcing
  - Hedging
  - Arbitrage
  - Speculation
- Solutions to avoid delivery at the wrong place
  - Gas swap
  - Physical
  - Financial
  - Liquidating position
  - Spot markets
- Currency risk
  - FX trading
  - Treasury mgt. department vs. Trading department

#### Exercise

Cross-border gas trading

### Session 6

#### Risk management

- Value at Risk
  - VaR
    - Time horizon
    - Confidence level
- VaR of a combined gas portfolio
  - Various commodities
    - NBP gas & TTF gas
    - How to implement correlation coefficients?
- Dirty hedge
  - Cross-margining
  - Interpret exposures

#### Exercise

Calculate VaR of gas position

### Session 7

#### Hedging

- Proxy hedging
  - Dirty hedge
  - The impact of a proxy hedge
  - How to effectuate proxy hedging in practice?
  - Disadvantages of correlation trading
    - Normality
    - Linearity

### Session 8

#### The real option approach

- Real option approach explained
- Asset optimization
- Optimization of asset allocation
- Dynamic hedging
- Delta hedging

#### Simulation

##### Cross-border gas trading

- NBP-TTF
- Physical & virtual trading
- Optimization of cross-border transport capacity

Participants will be allocated physical transport capacity and have to optimize the value by hedging dynamically.