Trading examples - activity

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Energy commodities

- **Traded in bulk, widely across market places**
  - Same, uniform and standardized = a commodity

- **Electricity as a commodity - It can’t get more uniform and more standardized**
  - Cannot be stored*
  - Peculiar transportation – network losses
  - Requires central operator (system operator – TSO) to confirm delivery
  - ... and to balance supply and demand on second per second basis
  - Quality of electricity to be traded is defined by contract
Tradable contracts

- *Usually traded on hourly basis (forward)*
- *Product specification is linked to:*
  - Place of delivery
  - Time/period of delivery (tenor)
  - Optionality
- *What is different from other commodities:*
  - Trading is the same
  - Delivery is a function between scheduling and real production & consumption where the differences between schedules and real production & consumption are settled within the balancing mechanism
Market places & ways of trading

**Bilateral trading**
*(bilateral credit arrangements)*

- Bilaterally
  - Structural/bespoke contracts
- OTC
  - Brokers via screen or phone
    - Standard contracts

**Exchange**
*(centrally cleared contracts)*

- Continuous trading
  - Standard contracts
- Auctions
  - Hourly day-ahead products
  - Intraday too, in some cases
Market & trading: it is all about risks!

Generators (Long position)
Volume

time

Risk

hedge & spec

Market

Risk

Traders

Suppliers (to end users) (Short position)
Volume

time

Risk

Cashflow Risk

Credit Risk
Why trading?

Behind each trade there is a motive directly linked with commercial incentive but influenced by the risk appetite

- **Hedging**: Trading activity to reduce the risk of adverse price movements in an asset, i.e. reduce market exposure

- **Speculating**: Trading activity with the expectation of price movements that will create a financial gain, i.e. taking position expecting with the expectation that the price will move in certain direction

- **Arbitrage**: Simultaneous purchase and sale to profit from a difference in the price, for example locational arbitrage
Screen trading

- Trayport (Global Vision – GV) is an amalgamation of brokers platforms
  - Not transparent for general public – can be bought as read only

- Standard bilateral contracts (Master agreement)
  - EFET/GTMA contracts (physical)
  - ISDA contract (financial)
  - Margin exchanged bilaterally
  - Set-up with the broker
  - Execution on screen/phone

- Trayport is used by PXs too

- PX prices transparent to the public
Key trading terminology

- Contract specification is shown on the screen
- Quantity and prices
  - **Bid** is the price at which certain market participants are willing to buy
  - **Ask** is the price at which certain market participants are willing to sell
- Putting Bid/Ask on the screen – *initiator*
- Clicking on Bid/Ask – *aggressor*
- The result of trade execution is:
  - Taking short (sold) or long (purchased) position, or
  - Offsetting a previously taken position
Trading from inside the trading firms

Front office
- Analysts
- Traders
- Originators
- Operations

Middle office
- Credit
- Market
- Product control (P&L)
- Settlement
- Reporting

Back office
- Treasury
- Finance /Accounting
- Tax department

Legal / Regulatory / Compliance
Trade lifecycle

Pre-trade process:
- Set up with TSO
- Bilateral/PX set-up
- Credit arrangements
- Fundamental analyses
- Price assessments (FX)

Trade execution

Trade booking / deal capture (internal)

Trade confirmation (bilateral/broker)

Regulatory reporting

Portfolio management / trade around the position / exchange of margin

Delivery / Flow / Nomination / Scheduling

Invoicing

Confirmation

Netting statements

Payment

Exchange of margin (bilateral/PX)

P&L check

Reconciliation of accounts
Delivery of contracted electricity

- Nomination and scheduling
- Regardless when you trade, the commercial delivery starts before electricity produced!
- Example A sells B 1MW base Month contract
- For TSO match and accept:
  - A must have a schedule that is buying 1 MW from a third party, or will produce on the real time.
  - B must have a schedule that is selling 1 MW to a third party, or will consume on the real time.
  - Meters are checked to confirmed the produced and consumed.
  - Differences are covered by the TSO and charged back to those that caused differences (imbalances)

D-1, then also H-1
- A and B (individually) send the schedule to the TSO
- A sell B 1 MW
- B buys A 1 MW
- TSO received both checks and accepts
**Activity**

*Background of the game:*

- Each group has a generation portfolio of **100 MW baseload** (this means: each hour can produce up to 100 MW)

- Maximum annual generation is 876 000 MWh (876 GWh), i.e. 100 MW x 8760 hours of the year

- Short-run marginal costs are 20 EUR/MWh, i.e. the costs of producing 1 MWh of electricity are 20 EUR/MWh
  - Annual costs are circa EUR 17.52m – costs of gas purchases that needs to be hedged

- Trading will be done through monthly baseload contracts
  - Monthly baseload contract is a contract with delivery of certain volume each hour from the first hour of the calendar month until the last hour
  - If 100 MW are delivered in a monthly baseload contract for month January it would be 74 400 MW (this is: 31 days x 24 hours x 100 MW)
Group activity

Rules of the game:

There will be 4 trading sessions, each ~5min., with the following trading limits:

- Maximum volume traded per session is 250 units (1 MWh/h = 1 unit)
- Maximum traded on all sessions is 850 units
- Minimum volume clip size is 10 units
- Prices will be given per each session together with the quantity limits on each specific contract.

Objective:
- Objective is to hedge the costs of EUR 17.5m
- There are no winners or losers in the game! No medals 😊
Thank You!

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