Trading examples - activity

2-3 October 2019, Podgorica

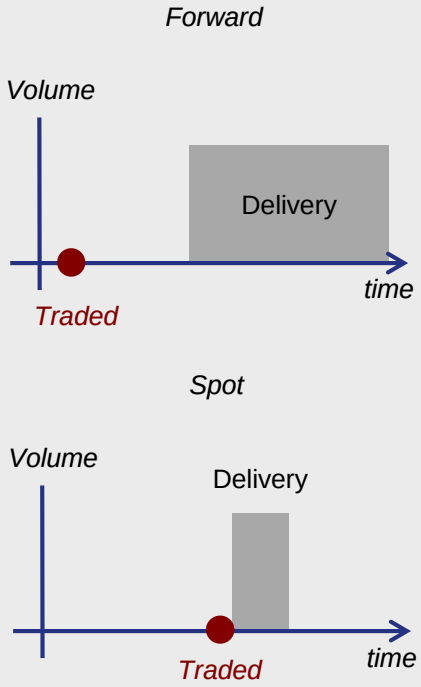
Arben Kllokoqi
Electricity Expert
Energy Community Secretariat

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 o 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



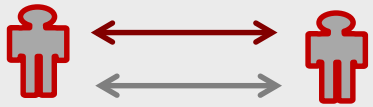
Market places & ways of trading

Bilateral trading

(bilateral credit arrangements)

Bilaterally

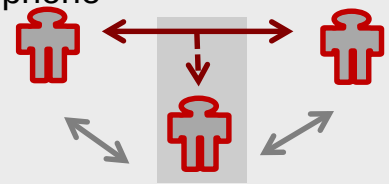
Structural/bespoke contracts



OTC

Brokers via screen or phone

Standard contracts



Exchange

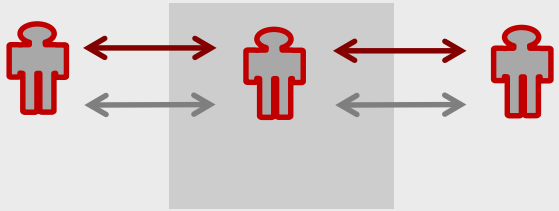
(centrally cleared contracts)

Continuous trading

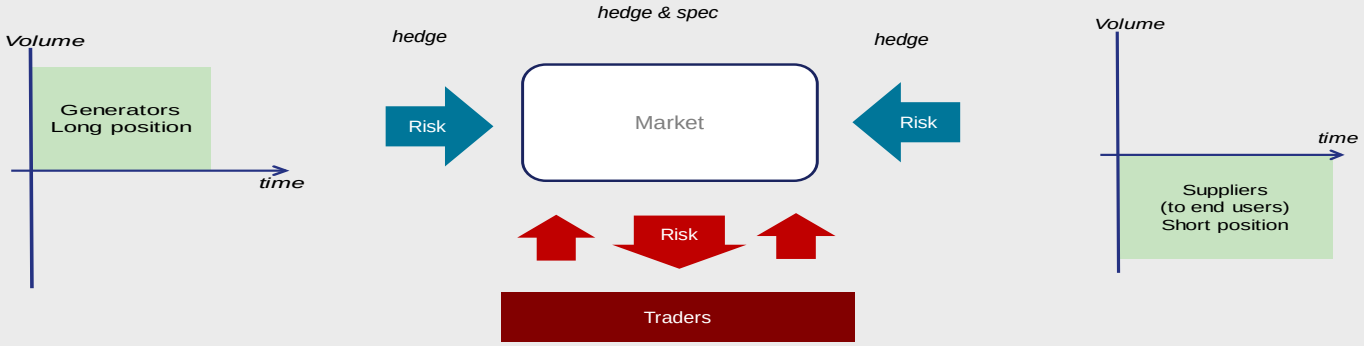
Standard contracts

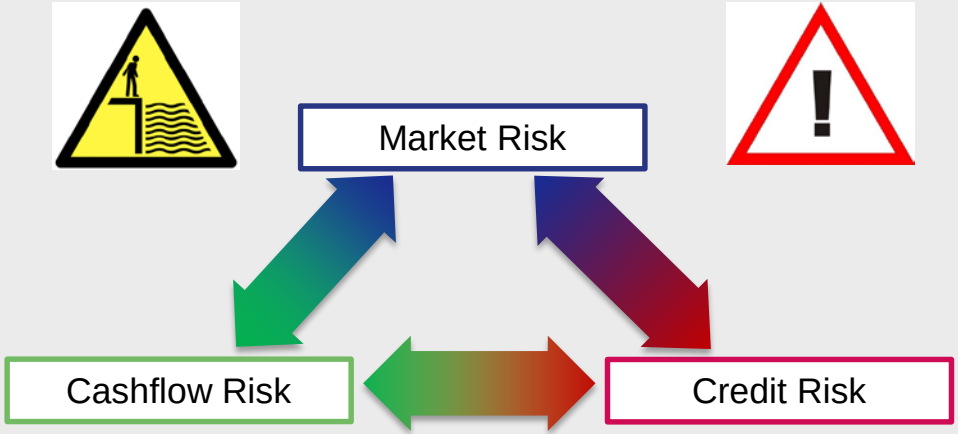
Auctions

Hourly day-ahead products
Intraday too, in some cases



Market & trading: it is all about risks!





Why trading?

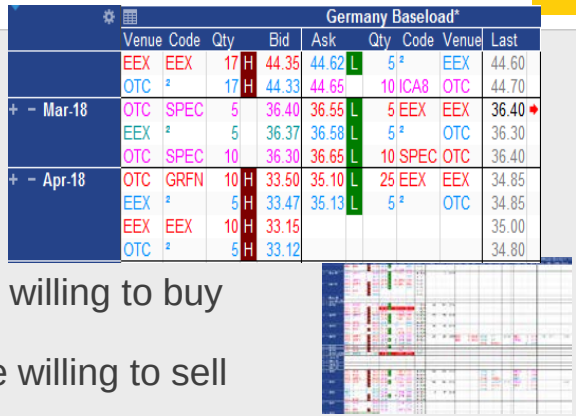
Behind each trade there is a motive directly linked with commercial incentive but influenced by the risk appetite

- ***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

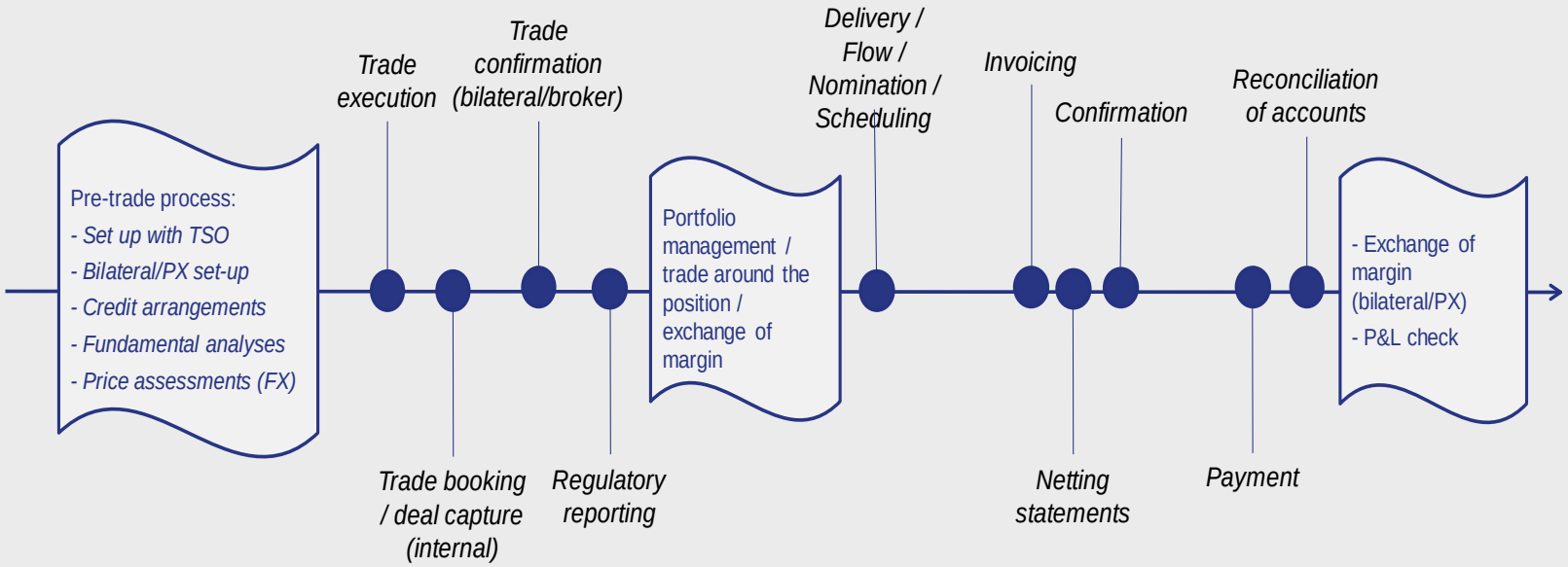
Treasury

Finance /Accounting

Tax department

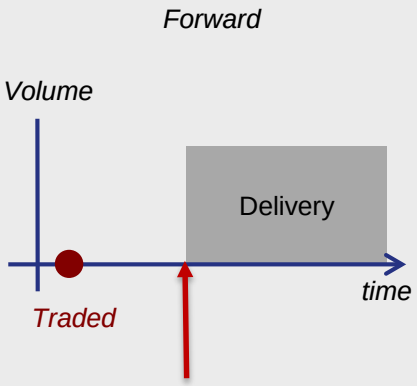
Legal / Regulatory / Compliance

Trade lifecycle



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!

Arben.Kllokoqi@energy-community.org