Trading in short timeframes

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Agenda

• An overview of spot trading
• Why trade short-term horizons
• Trading interconnected markets
• A reflection on the 2021/2022 electricity price increases
An overview of spot trading

Trading horizons, contracts, trading venues
The 3 elements of a trade in electricity

- **What?** – you agree on a **volume** of electricity in MWh
- **For how much?** – you agree on a **price** for the electricity in EUR
- **For when?** – you agree on a **time for the delivery** of the electricity
Trading horizons: the delivery time of electricity

Source: European Commission
Day-ahead and intraday trading: spot, physical contracts

- **Spot contract**: a buyer and a seller agree to transact:
  - a certain quantity of electricity (MWh)
  - at a certain price (€)
  - for immediate delivery (“on the spot”)

- **Physical contract**: the MWh of electricity are delivered physically:
  - injected on the grid by the seller
  - off-taken from the grid by the buyer
Trading venues: OTC & power exchange

**OTC trading**
- Any type of contracts
  - Trading with known counterparty
  - Settlement by the parties (need for collateral)
  - No fees (or limited when through broker)

**Exchange trading**
- Standardised contracts
  - Anonymous trading
- Settlement via the exchange, with margining
  - Exchange fees

**Transparency:**
For both OTC and PX trading, REMIT obligations apply (order and transaction reporting, market surveillance)
Evolution of spot markets towards mostly exchange-based trading

- **From OTC trading**: historically, spot trades were traded OTC like forward contracts
  - This is still the standard case in few European countries, mainly in CEE & SEE.
  - OTC trading is still an option – though rarely used – in the rest of Europe.

- **To exchange-based trading**: market coupling projects resulted in a move to exchange-based trading.
  - Market coupling in day-ahead: MRC now covering all the EU and most borders.
  - Market coupling in intraday: XBID in most of the EU (except Greece, Slovakia).
Reference market vs. optimisation market

- **Day ahead market:** considered the market giving the reference price in Europe.
  - > Link to nomination and scheduling processes historically happening in D-1.
  - > But… the real price signal for market participants is the imbalance price!

- **Intraday market:** considered the market to optimise/correct positions close to real time.
  - > Link to historically poor liquidity, or even non-existing possibility to trade after DA.
  - > But… intraday market liquidity increases, product granularity closer to ISP and ability to trade closer to real time!
Why trade short-term horizons?

Market drivers, regulatory developments
The undeniable trend: growing DA and ID volumes

Source: EPEX Spot
Short-term trading allows to adjust portfolios close to real time

As time passes, uncertainties reduce...

examples of uncertainties to manage:
> Weather – impact on RES production, consumption
> Generation plant outages
> Transmission line outages...

* Exact time of market closure might slightly vary depending on country
The reasons behind the growth of short-term trading

- Growing penetration of intermittent renewable energy:
  > All market participants need to adapt to more price volatility
  > RES-E generators gradually brought to the market

- Improvement of intraday markets (from few auctions to continuous trading, more granularity in products)

- Better access to cross-border capacity in intraday (move to cross-border continuous at bilateral level initially, now XBID).

- Introduction of automated (robot) trading in intraday.

Source: EPEX Spot
Trade volumes increase closer to delivery
Trading interconnected markets

Day-ahead and intraday market coupling
Networks are highly interconnected in Europe

Electricity flows from low to high price zones, based on local market prices and cross-zonal capacity availability/price
Markets are interconnected thanks to cross-border capacity allocation

- **Forward**
  - Forward transmission rights
  - FCA Regulation

- **Day-ahead**
  - Explicit auctions of capacity or market coupling
  - CACM Regulation

- **Intraday**
  - Explicit auctions of capacity or market coupling

- **Balancing**
  - TSO-TSO exchange of energy
  - Electricity Balancing Regulation

**TSO** - Transmission System Operator
Coupling of day-ahead markets

- **All EU countries part of MRC**
  > Only Hungarian-Croatian border not yet coupled (coming up next month!)

- **One allocation mechanism but multiple capacity calculations:**
  > Flow-based in CWE, NTC elsewhere
  > Flow-based extended to Core (in April) and Nordic, coordinated NTC elsewhere

- **Third countries excluded unless an agreement exists (CH, GB)**
Organisation of day-ahead market coupling

- Auction process – every day at 12:00 CET
- Marginal pricing
- One single algorithm run by the power exchanges: EUPHEMIA
- Market participants place their orders to their local power exchange
Effect of market coupling on price convergence (4MMC)

Price convergence in 70% at HU-RO border

Source: ENTSO-E
Coupling of intraday markets

- Most EU countries part of XBID
  - CWE, SWE and Nordic since 2018
  - Extensions to CEE in 2019, Italy 2021
  - Slovakia and Greece planned end 2022

- XBID is the primary tool for ID capacity allocation in the EU
  - Will be complemented by implicit auctions for capacity as of 2024

- Third countries excluded unless an agreement exists (CH, GB)

Source: NEMO Committee
Organisation of intraday market coupling

- Continuous trading – throughout the day as of D-1 15:00 CET
- First-come-first-served matching service
- Pay-as-bid pricing
- Market participants place their orders to their local power exchange
- Capacity is free
Example of intraday market growth after introduction of XBID

HUPX traded volume before/after SIDC

OTE traded volume before/after SIDC

Source: XBID Project Parties
A reflection on the 2021 price increases
The 2021 rise in electricity prices is linked to multiple drivers

- **High demand**: Economic recovery following the Covid-19 crisis

- **Tight supply** linked to:
  - Soaring prices of natural gas (exacerbated by the war in Ukraine)
  - Soaring prices for coal
  - Poor conditions for RES-E production in September
  - Low hydro reservoir capacity

Hence, the market is reacting appropriately to fundamentals
But forward hedging shields consumers from short-term spot market volatility

Source: Platts
Much can be done to improve electricity markets efficiency

1. Improve Short Term Markets
2. Use our resources efficiently
3. Make it easier to contract long term
4. Get Governance right
5. Coordinated planning & policy
6. Help those who need it
• DA and ID markets are growing largely thanks to:
  • the energy transition (RES-E)
  • regulatory developments (XBID, product granularity, GOT/GCT)
  • technological change (automated trading)

• Market coupling makes spot markets more efficient, truly pan-European

• Volatile spot markets require forward trading to shield customers from price fluctuations

• Targeted reform can help improve electricity markets even further
Thank You

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