

Effects of a more Intraday-Driven Market

A report commissioned by
NVE THEMA Consulting Group



NVE - Bransjeseminar om utvikling av
handlemønstre i kraftmarkedet

 **epexspot**

 **eex**

Heine Rønningen, Oslo, 21. Juni 2019

 **eex group**

EEX Group at a glance



Commodity Trading



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› eex	› ecc	› epexspot	› powernext	› pegas	› gaspoint nordic
› pxe	› cltx	› nodalclear	› nodal		

EEX Group Products



Power



Natural Gas



Environmental Markets

Emission Allowances,
Guarantees of Origin



Global Commodities

Freight, Oil, Coal, Metals, Biomass - Woodpellets



Agricultural Markets

Potatoes, Dairy Products



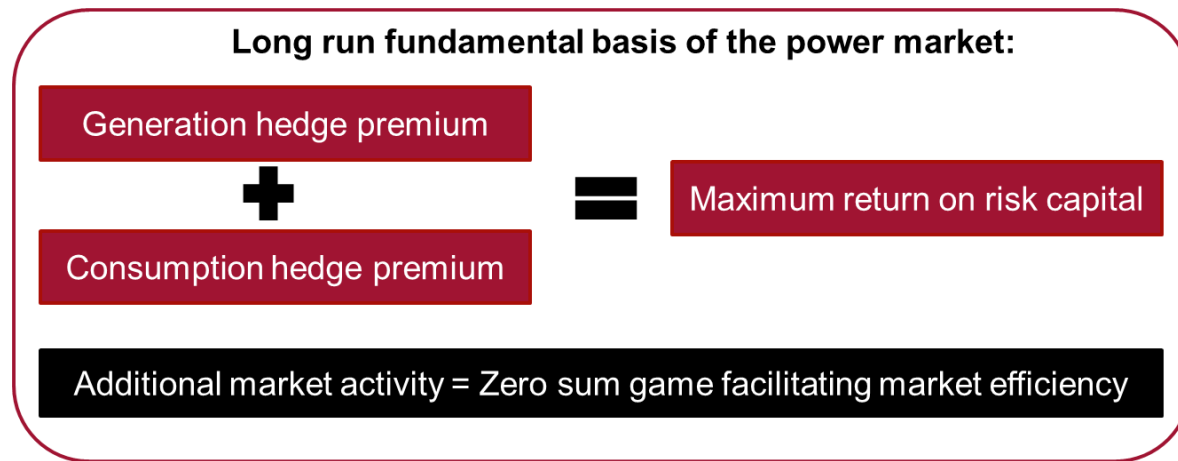
Registry Services

Guarantees of Origin

Effects of a more Intraday-Driven Market - Thema Consulting Group findings in summary:

1. **“Looking across the drivers, Thema Consulting group finds it reasonable to expect the timing of physical trading to remain largely unchanged and balancing volumes to grow”**
2. **“The consultants see no convincing rationale for reserving cross-zonal capacity for intraday trade”**
3. **“An ideal intraday market design is likely to entail the introduction of a small number of auctions”**
4. **“The risk of changing patterns of physical trade harming efficiency through reduced financial market liquidity is relatively minor”**

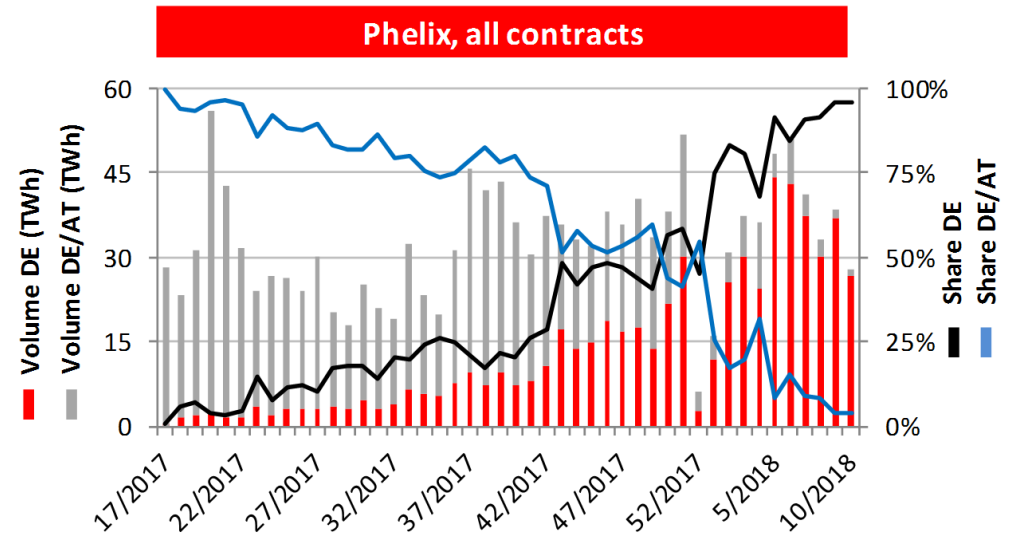
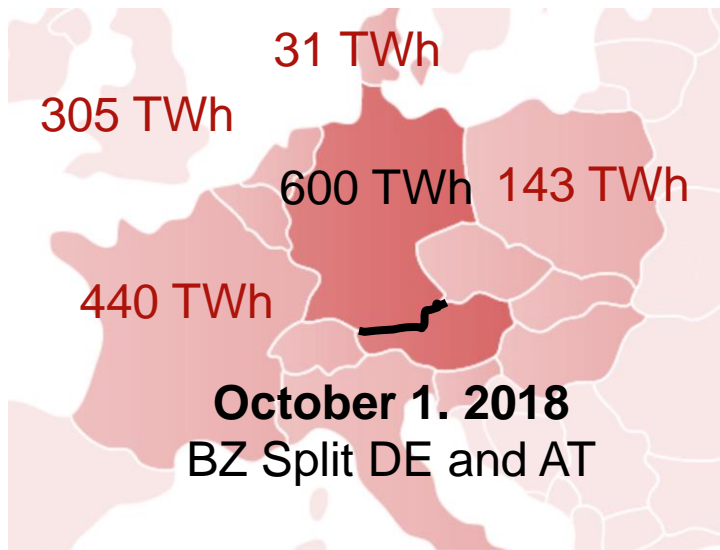
Market efficiency and liquidity cannot be created out of thin air...



«The risk of changing patterns of physical trade harming efficiency through reduced financial market liquidity is relatively minor»

- **All changes in physical trade patterns will have a potential strong impact on financial markets.**
 - Changes inducing increased hedging value is positive
 - Changes inducing decreased hedging value is negative
- **Capacity reservation from DAM to IDM is a good example of intervention with a negative impact on hedging value..**

The Phelix Bidding Zone...(and DE & AT split)

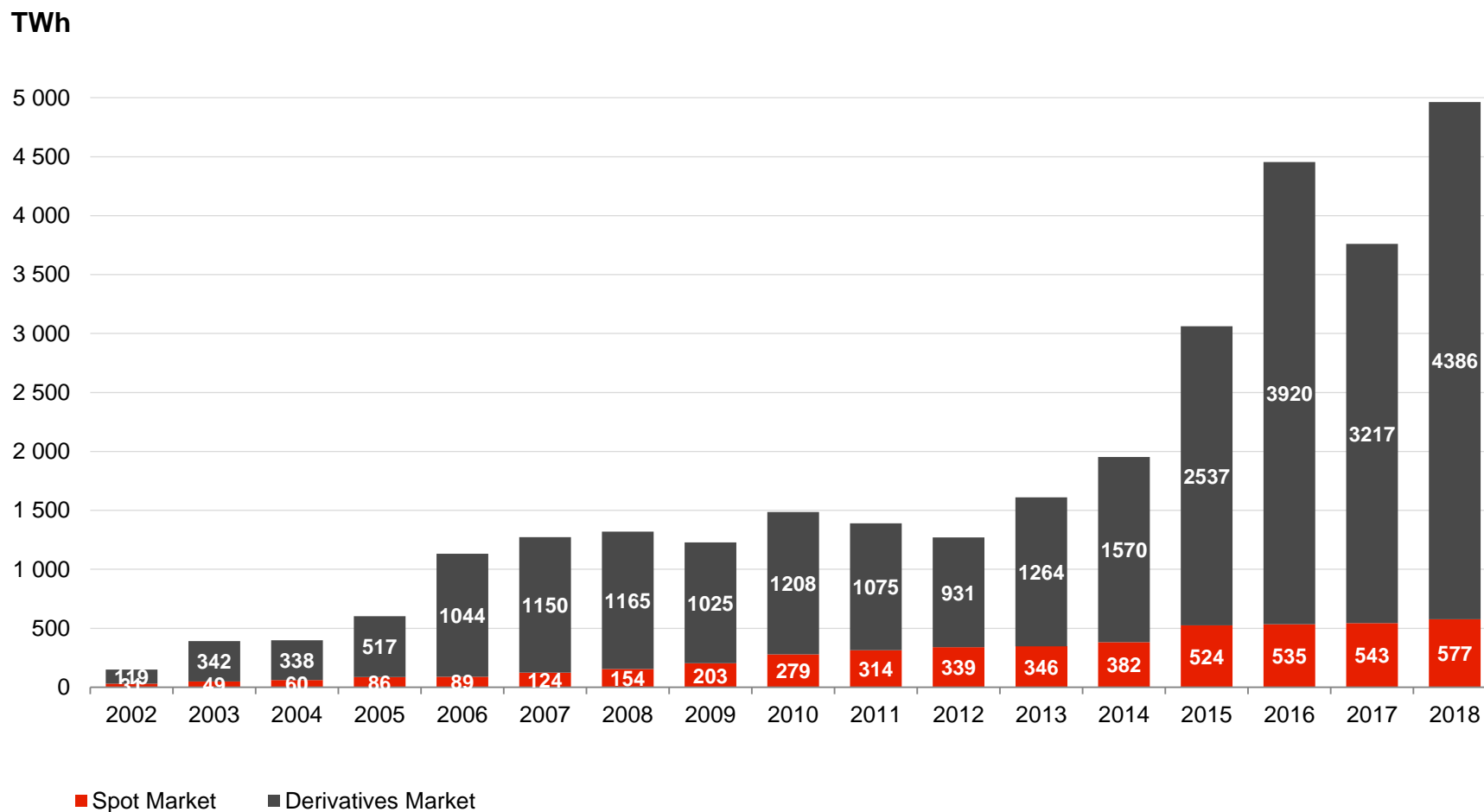


Size matters – Phelix is Europe's largest Bidding Zone

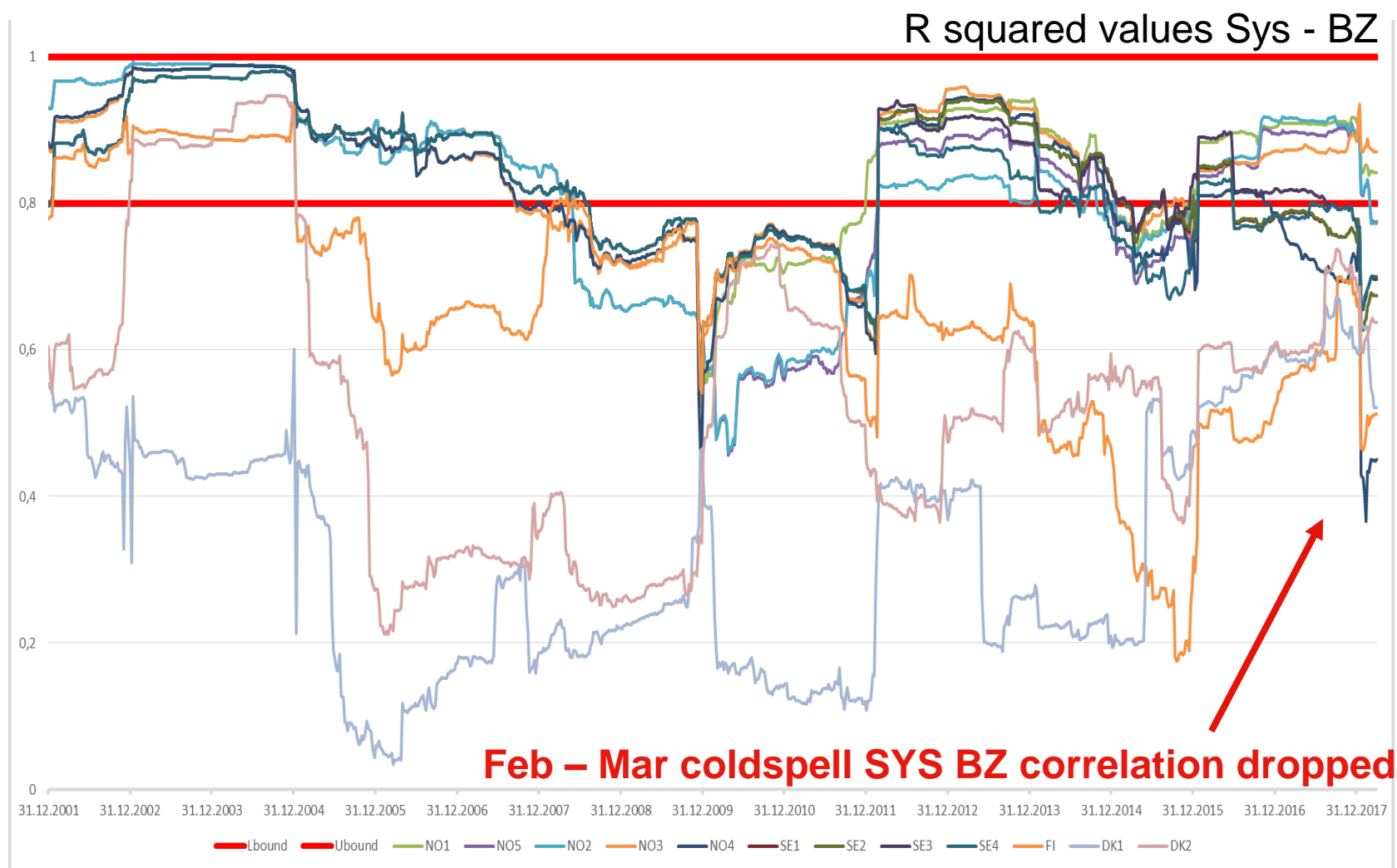
...+ diversified generation mix as basis for strong hedging demand:

- **600 TWh Consumption in a single Zone** (System price = 370 TWh / 12 BZ = 31 TWh each)
- **655 TWh Generation** consisting of Renewables, Lignite, Hard coal, Natural Gas, Nuclear, Mineral Oil.....
- **55 TWh net Export**

Power Spot and Derivatives Market volumes



Health report of the Nordic System price...

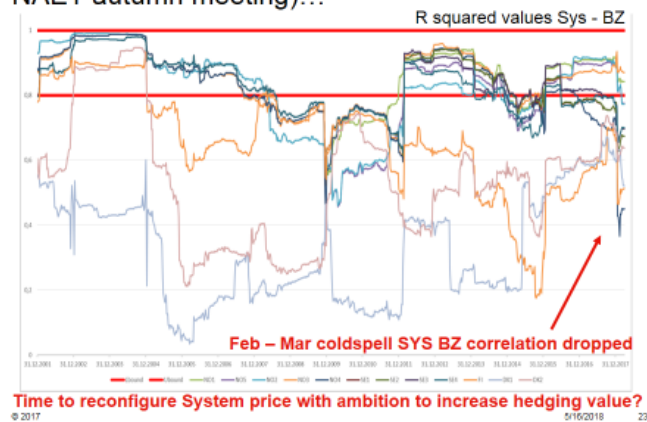


Time to reconfigure System price with ambition to increase hedging value?

Hedging value and Bidding Zones

- Insufficient correlation between System Price and Nordic Bidding Zones
- The outliers reduces hedging value, dampens and randomizes volatility

Health report of the System price (update from NAET autumn meeting)...



Changes to the Nordic interconnectors in the near future...

- **German Power** will strengthen its significance on Nordic Power in 2020:
 - Increased utilization of current interconnector DK-DE 1250 MW
 - New interconnector DK-DE 1250 MW
 - New interconnector NO2-DE 1400 MW
- **System Price** hedging relevance will be challenged further with the new interconnectors.

...which leads us back to the discussion we had at the NAET autumn meeting 2017....

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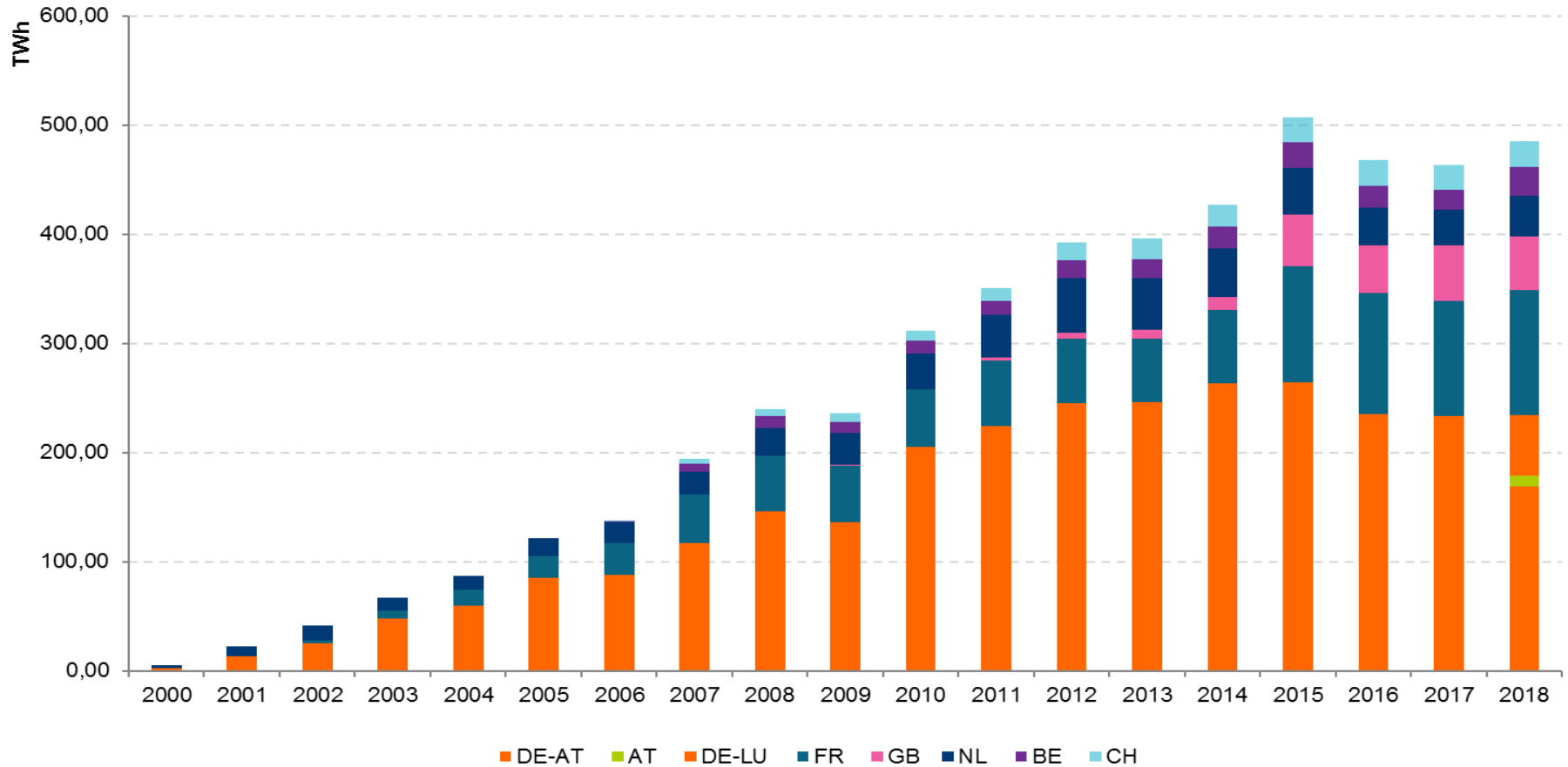
NordLink, commercial in 2020



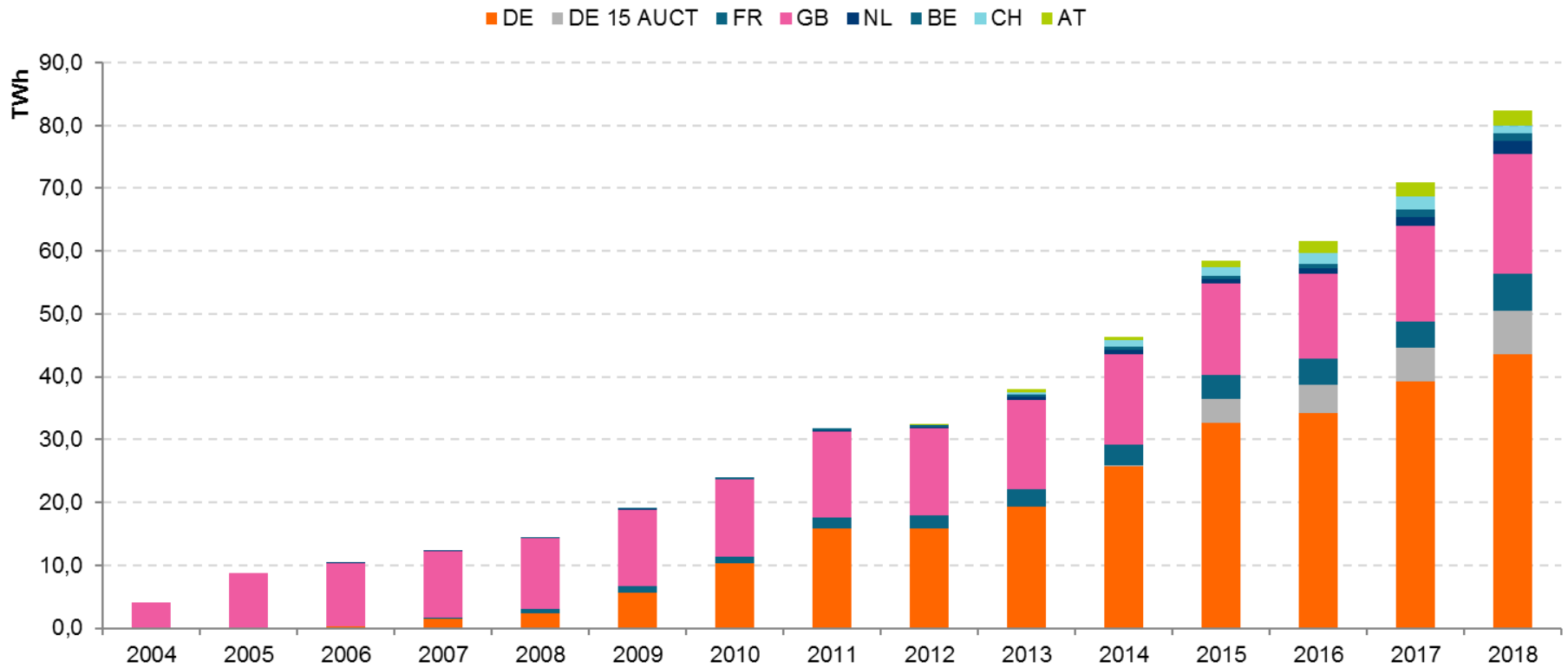
▪ Solution:

- **Reconfigure** - Create a largest possible hub of correlated Bidding Zones, remove the uncorrelated Bidding Zones (they need a separate hedge)
- **Remember:** EPAD + System Price = Bidding Zone Price, regardless of if the Bidding Zone is part of the System Price index or not

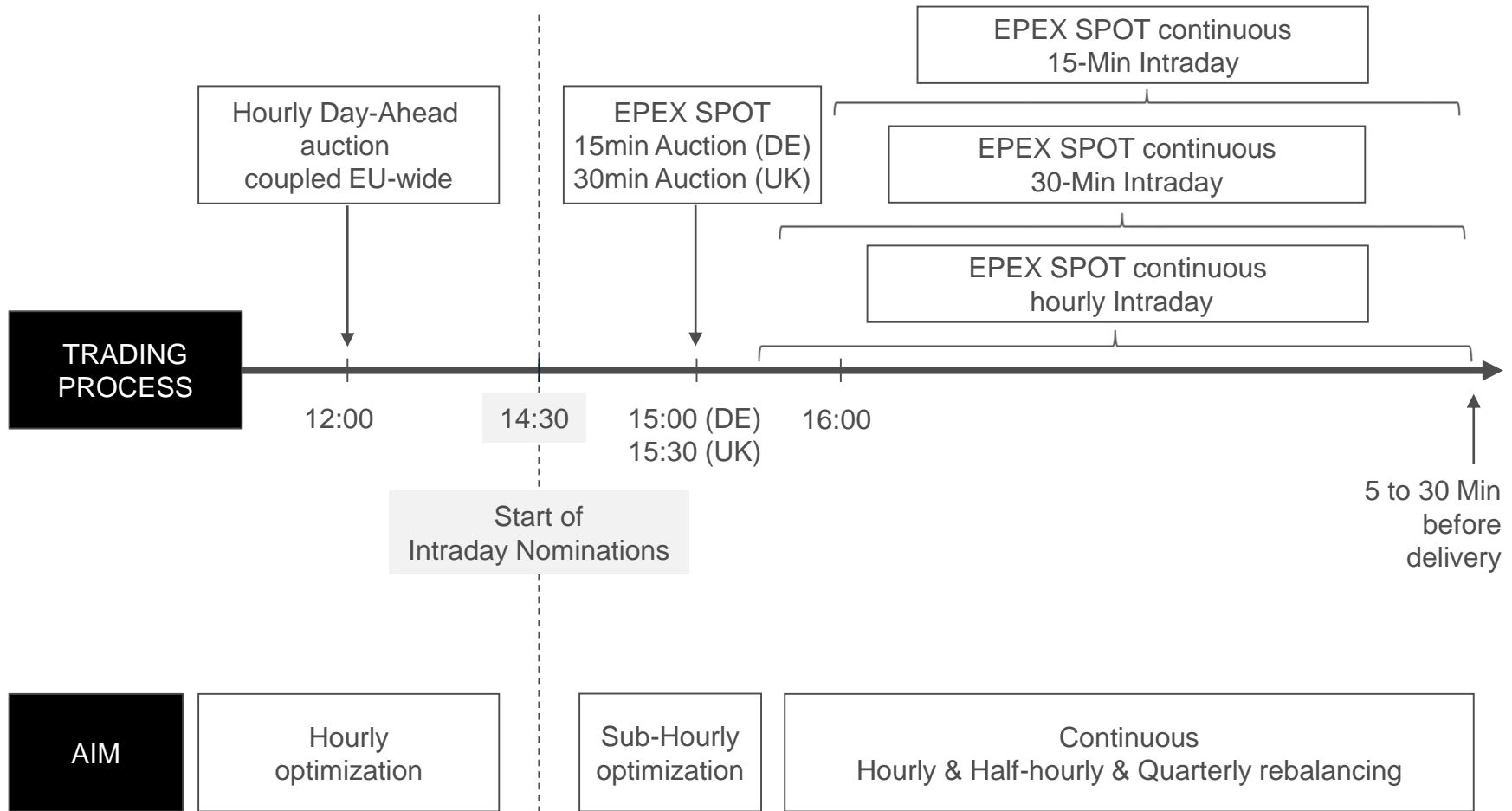
EPEX SPOT Volumes Day-Ahead Markets



EPEX SPOT Volumes Intraday Markets



The wholesale energy trading process on EPEX SPOT



Valuing complementarities: towards a hybrid auction/continuous market

	Day-Ahead Auction	Intraday Continuous Trading
Liquidity	<ul style="list-style-type: none"> • Liquidity pooled in one market mechanism • Robust price reference 	<ul style="list-style-type: none"> • No liquidity threshold needed (no liquidity = no trades) • Index needed
Price formation	<ul style="list-style-type: none"> • Sophisticated market mechanism to derive a “market clearing price” common to all market participants • Inclusion of network constraints, capacity pricing, complex blocks (combinatorial optimization) 	<ul style="list-style-type: none"> • Allows continuous buy/sell; Bid/Ask until Real-Time • “first-come first-served” logic • Prices are “pay-as-bid”
Operational constraints/complexity	<ul style="list-style-type: none"> • Low burden as it is a “one-shot” mechanism • No arms race (Time/speed) • Easier to ensure high reliability 	<ul style="list-style-type: none"> • Need 24/7 systems • Need to have people connected to screens to follow continuous trading

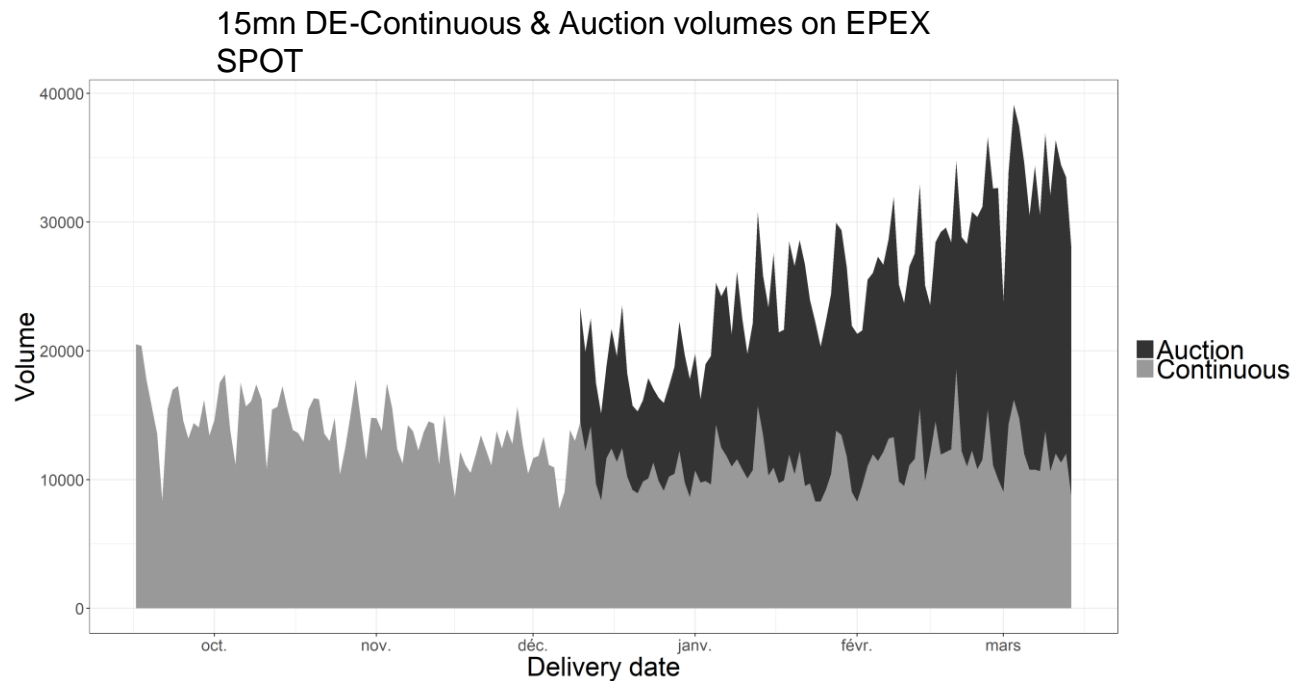
➔ We can see that auctions and continuous trading have very different characteristics. Such characteristics can fit to different situations and sometimes be complementary

Local markets as essential components of market design: the starting point

- Local continuous 15mn products were introduced in 2011 by EPEX SPOT **and later connected through cross-border capacity allocations by the TSOs, when possible. NB:** keep in mind today, there is only one border in Europe (Germany-Austria) able to handle 15mn contract granularity
- Local markets have **allowed to develop products needed by market parties that could not be integrated into the Coupled (XB) markets** (i.e. 15mn auctions) because other PXs were blocking them (on the ground that it would create too much complexity and/or limit the cross-border opportunities available for hourly contracts)
- Although the creation of the 15 minute call auction decreased the traded volume of the continuous market by 13% mainly during the 1st hour of the trading session **it increased the overall volume for quarter hourly contract by 109%**
- The increase is mainly due to large members (top 25%) who increased their mean volume by about 590 MWh per day but in terms of relative variation, the smallest members (bottom 25%) had the largest growth: +560% on average

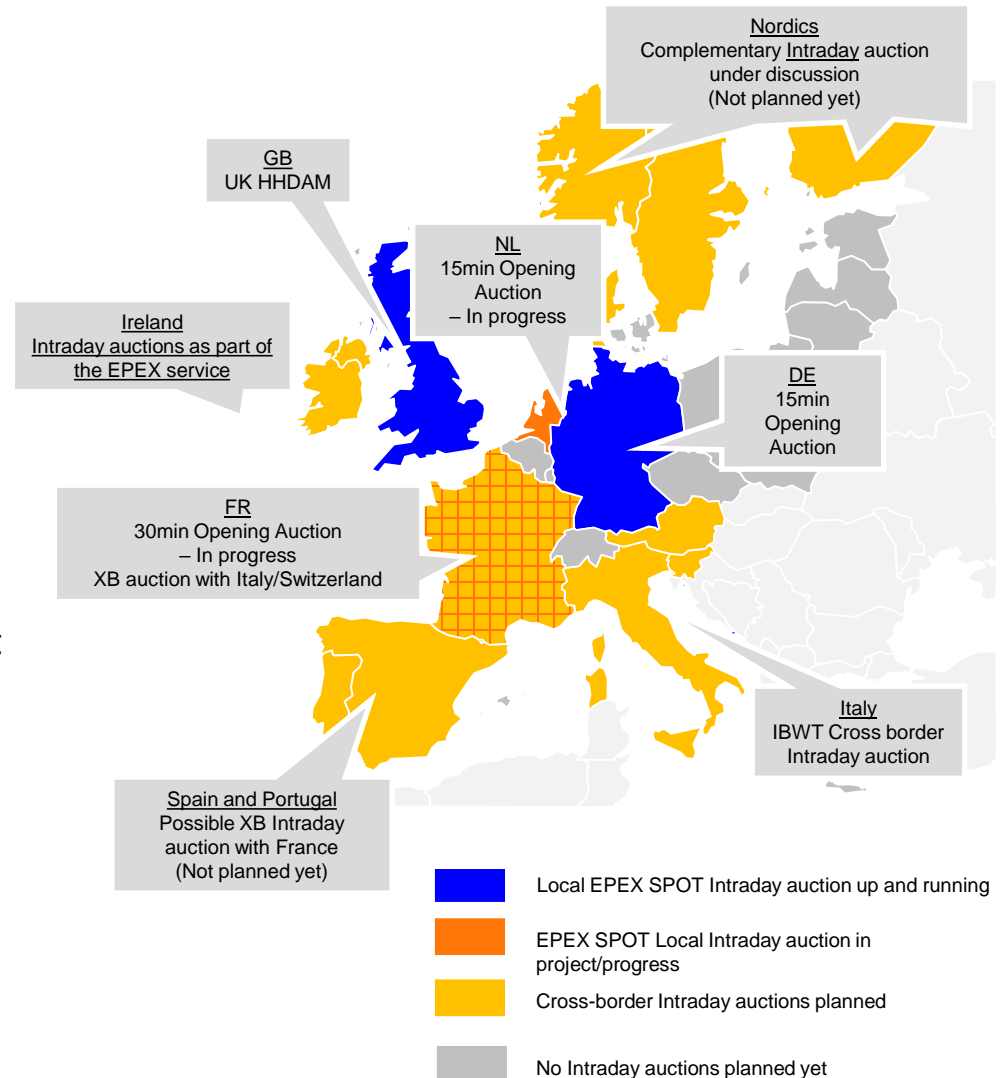
German Intraday Continuous Market – local 15 Minutes Auction at 3PM

The local German 15 minutes ID Auction has allowed to increase significantly the amount of 15mn traded volumes



Status of Intraday / opening / closing / XB auctions

- There are several initiatives started on opening/local and XB auctions
- On Opening Auctions with finer granularity products :**
 - 15mn Local NL auction
 - 30mn Local FR auction
- On Cross-border (XB) auctions:**
 - Eirgrid – GB Intraday auctions (live since Oct 2018):
 - IT-CH XB Intraday auctions on-going: (live since April 2019)
 - Italian Borders Working Table XB Intraday auctions
 - Pan-European XB Intraday auction (beyond 2020-21)



EPEX SPOT remarks to the Conclusions of the THEMA Report - I

EPEX SPOT agrees that:

- that the timing of physical trading will remain largely unchanged and intraday volumes will grow
- cross-zonal capacity should not be reserved for Intraday or Balancing
- the ideal intraday market design is likely to entail the introduction of a number of auctions

EPEX SPOT remarks to the Conclusions of the THEMA Report - II

Recommendations:

- Not in favour of doing auctions for the sake of doing auctions... Too many auctions substitute the continuous and not complement
- **Parsimonious in the # of auctions:** i.e. linked to capacity recalculation
 - Regulators, TSOs and Market parties shall discuss the best design and number of auctions, also in light of the ACER decision on Intraday Cross-Zonal Gate Opening and Closure Time & ID Cross-Zonal Capacity Pricing
- Infrastructure already available (PCR), pay-as-cleared and congestion rent payment should be guaranteed
- Which type of products? 60 minutes and 15 Minutes contracts? Block orders should be offered once liquidity has developed

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