

# EPEX SPOT, an innovative Exchange, actively supporting the algorithm boom on power markets

Audrey GIFFARD, Senior Market Surveillance Economist  
a.giffard@epexspot.com - surveillance@epexspot.com

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# EPEX SPOT markets and the independent Market Surveillance (MS)

# The largest European Power Exchange will be expanding to Nordics, Baltics and Poland in 2019

16 nationalities in staff

285 members in 21 EU countries

7 European shareholders

51% private, 49% TSOs

8 European markets operated

8 new planned

21 borders market-coupled

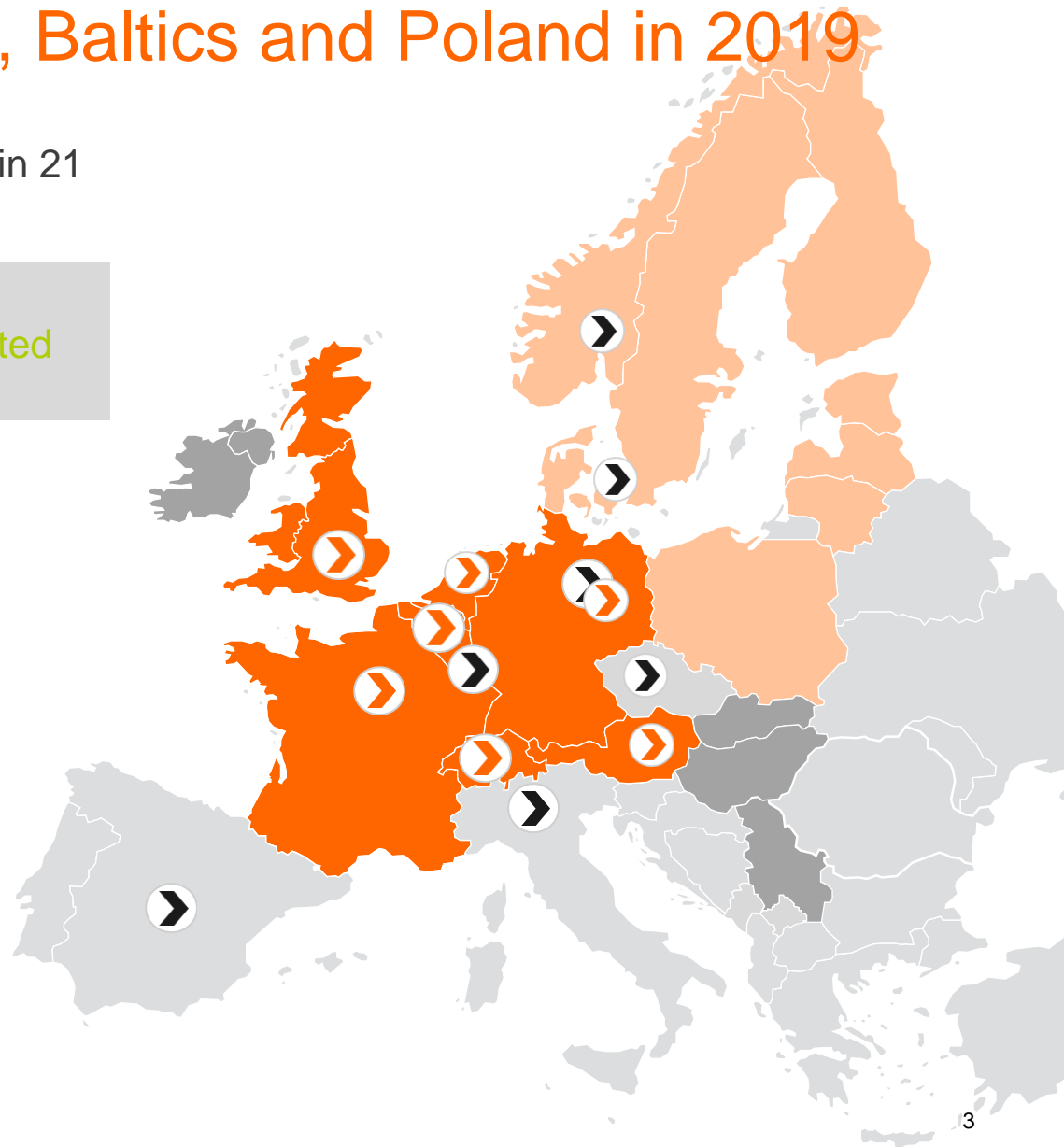
7 local offices across Europe

14 EEX Group

Markets covered under the roof of the Clearing House > **ecc**

- Current EPEX markets
- Coming soon
- Serviced Power Exchanges

 Local EPEX / EEX Group offices



# EPEX SPOT at a glance

**535 TWh**

traded in 2017 on all spot markets

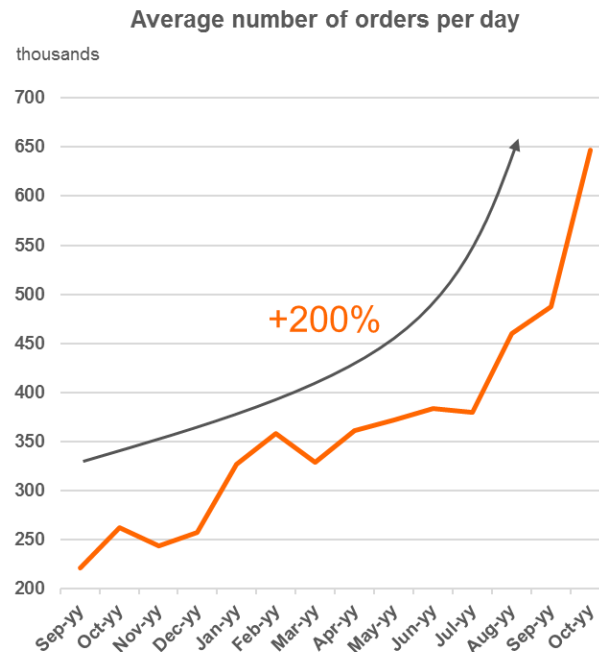
+6% Y2Y for 2018



**1st**

operator of a European market-based **local flexibility** demonstrator in 2019

Proven technical **performance** adapted to new market behavior

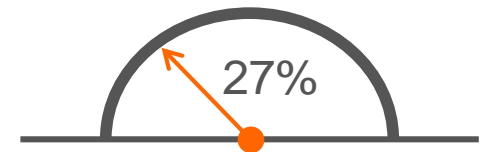


Largest Intraday market in Europe with **71 TWh** traded in 2017

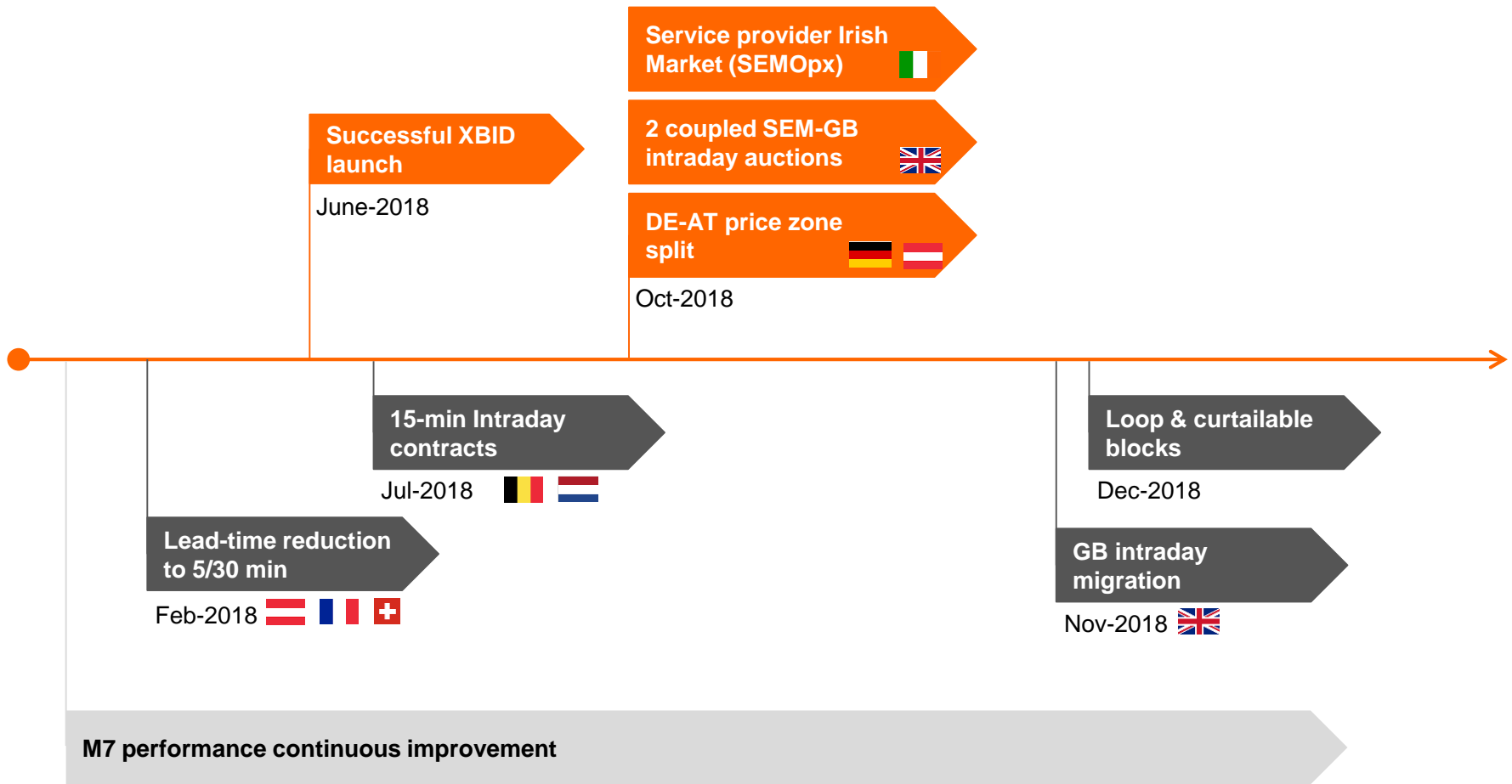
+15% CAGR since 2015

**Success of 15-min products**

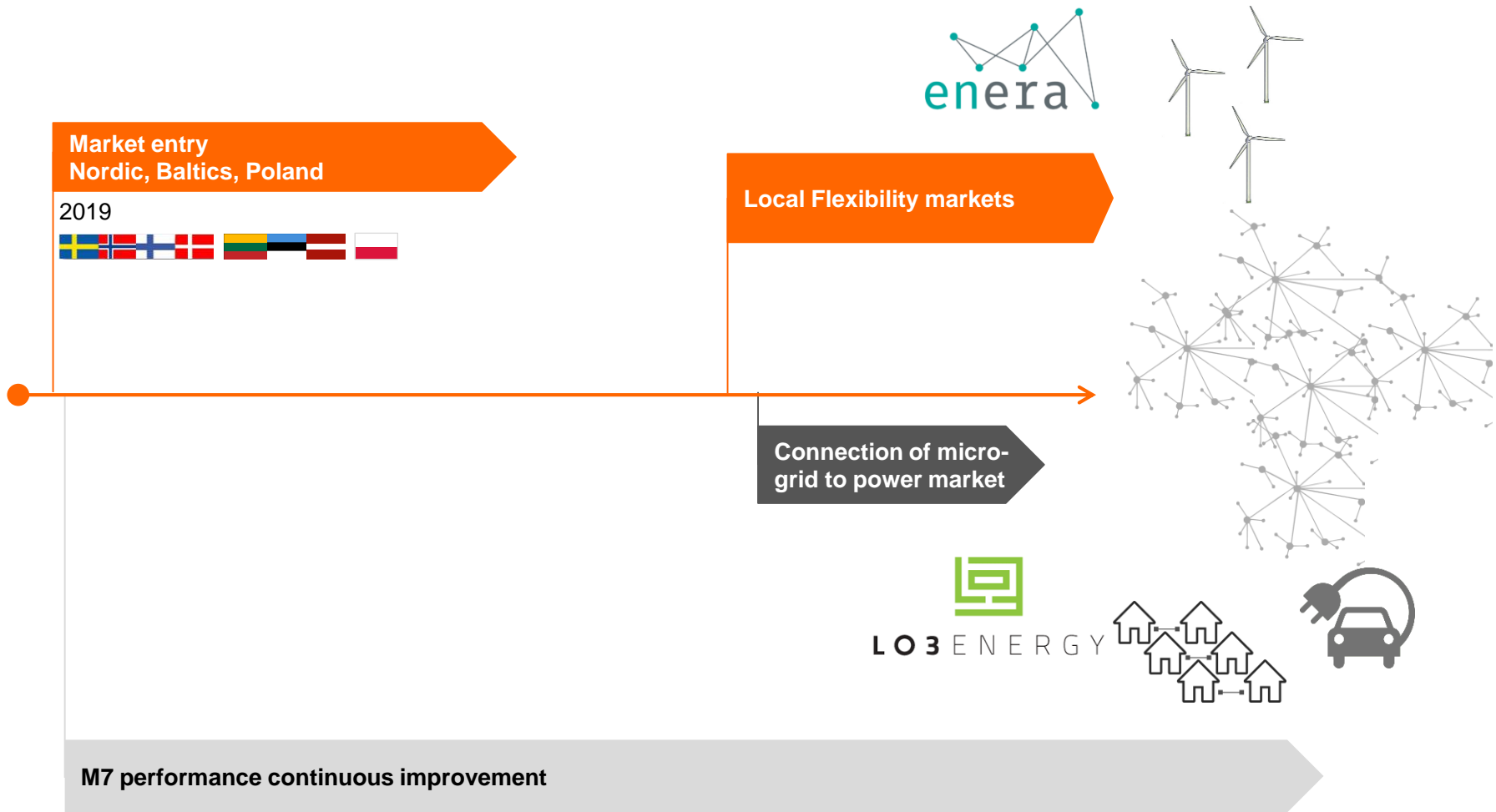
27% of German intraday volumes traded on 15-min contracts



# Continuous service improvements...



# ...and plans to further shape the future power landscape

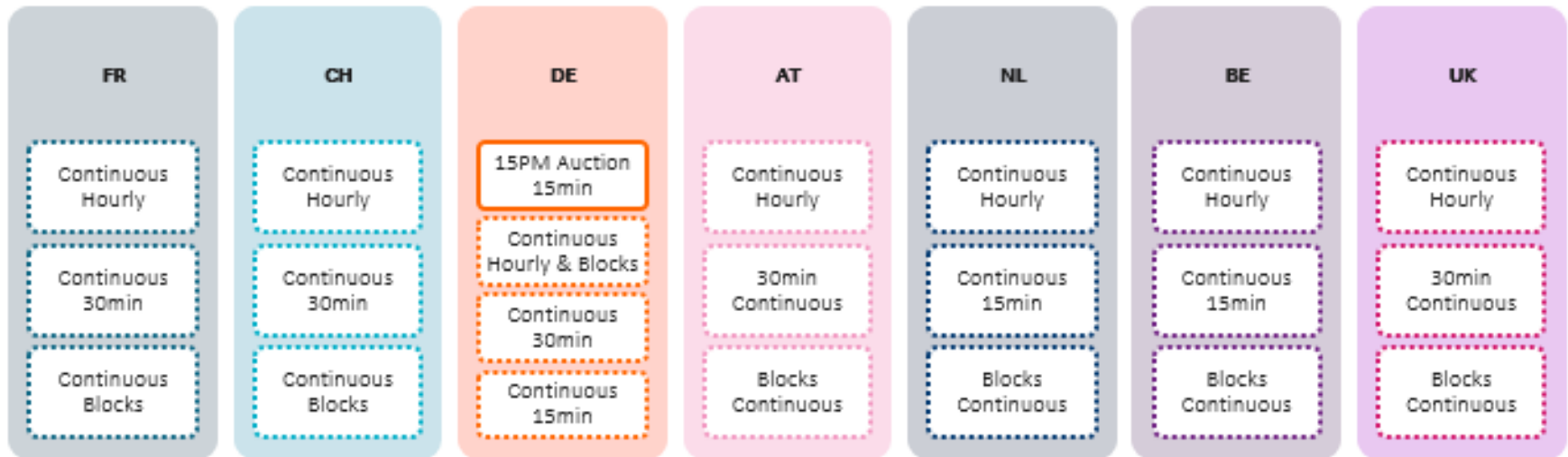


# A wide panel of market segments accounting for more than 1 000 different contracts traded every day

- Day-Ahead



- Intraday



- French Capacity Market

✓ Nordics, Baltics and Poland markets coming soon

# Cooperation, prevention, monitoring, admission control and data reporting are the pillars of the MS





# Intraday: A unique trading venue with the largest products range & performance in Europe

## Platform scalable and of high performance

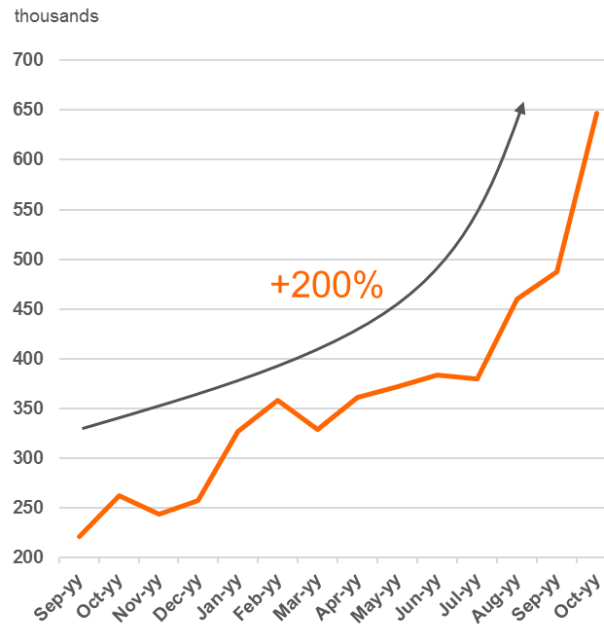
### Robust & fast machine

- >99.8% availability
- >750k orders a day

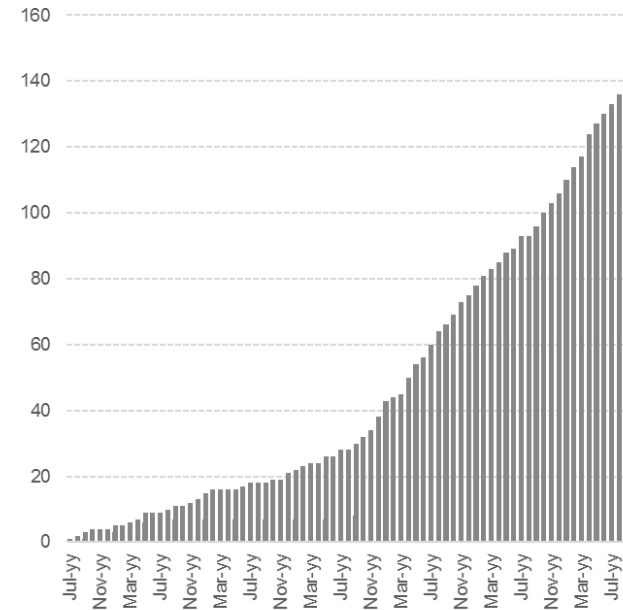
### State-of-the-art API technology

- ca. 150 connections
- 1/3 of traded volumes
- Largest community of ca. 20 certified ISVs

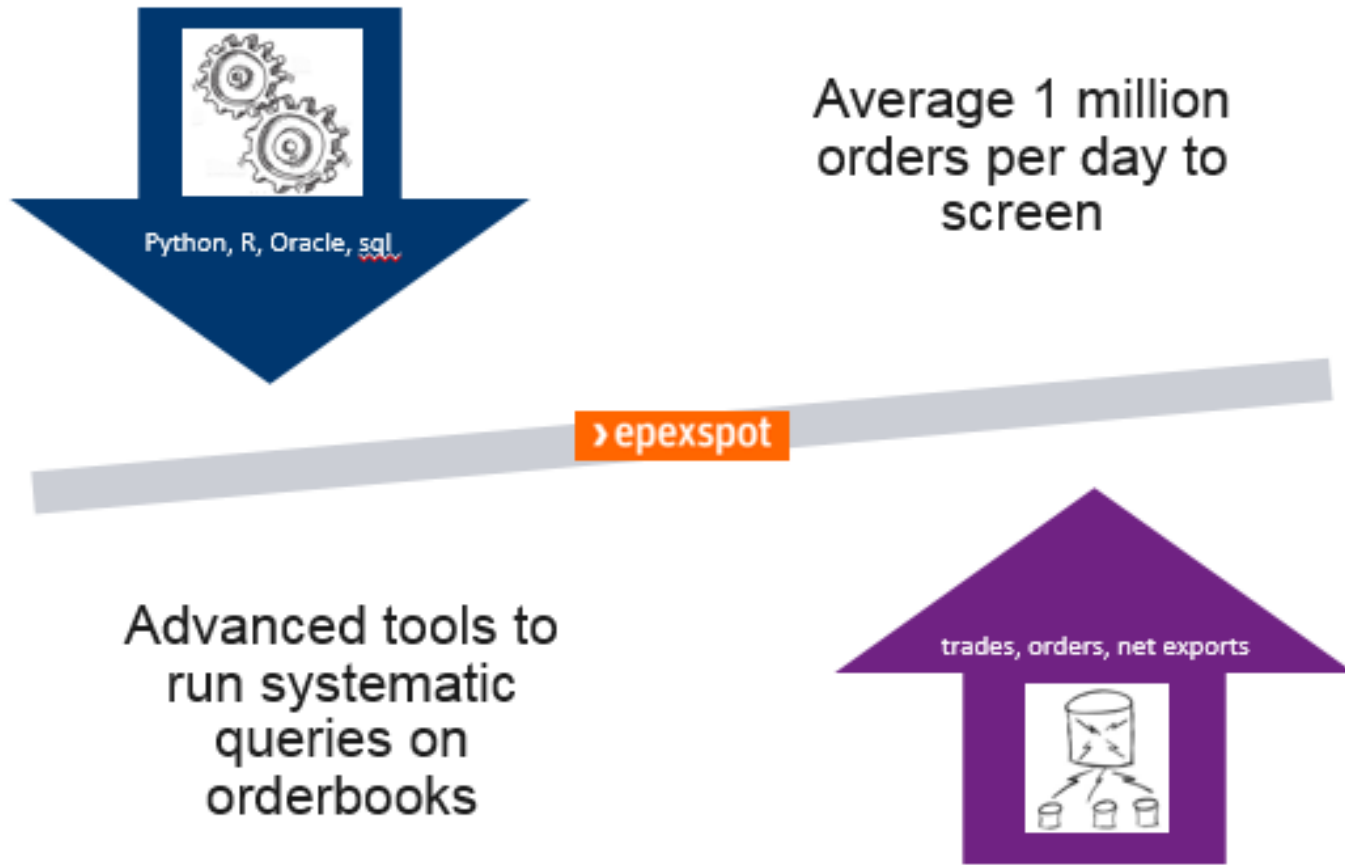
Average number of orders per day



Number of connections via EPEX API



# A constant design of internal tools to support the monitoring of 1 million daily orders, easily scalable



# Algorithm patterns, how to identify associated risks and ensure prevention

# Differentiate manipulative behaviors from speculation & arbitrage strategies

## Description

A Market Participant has developed an arbitrage algorithm aiming at catching the micro-volatility on the market

## Alert

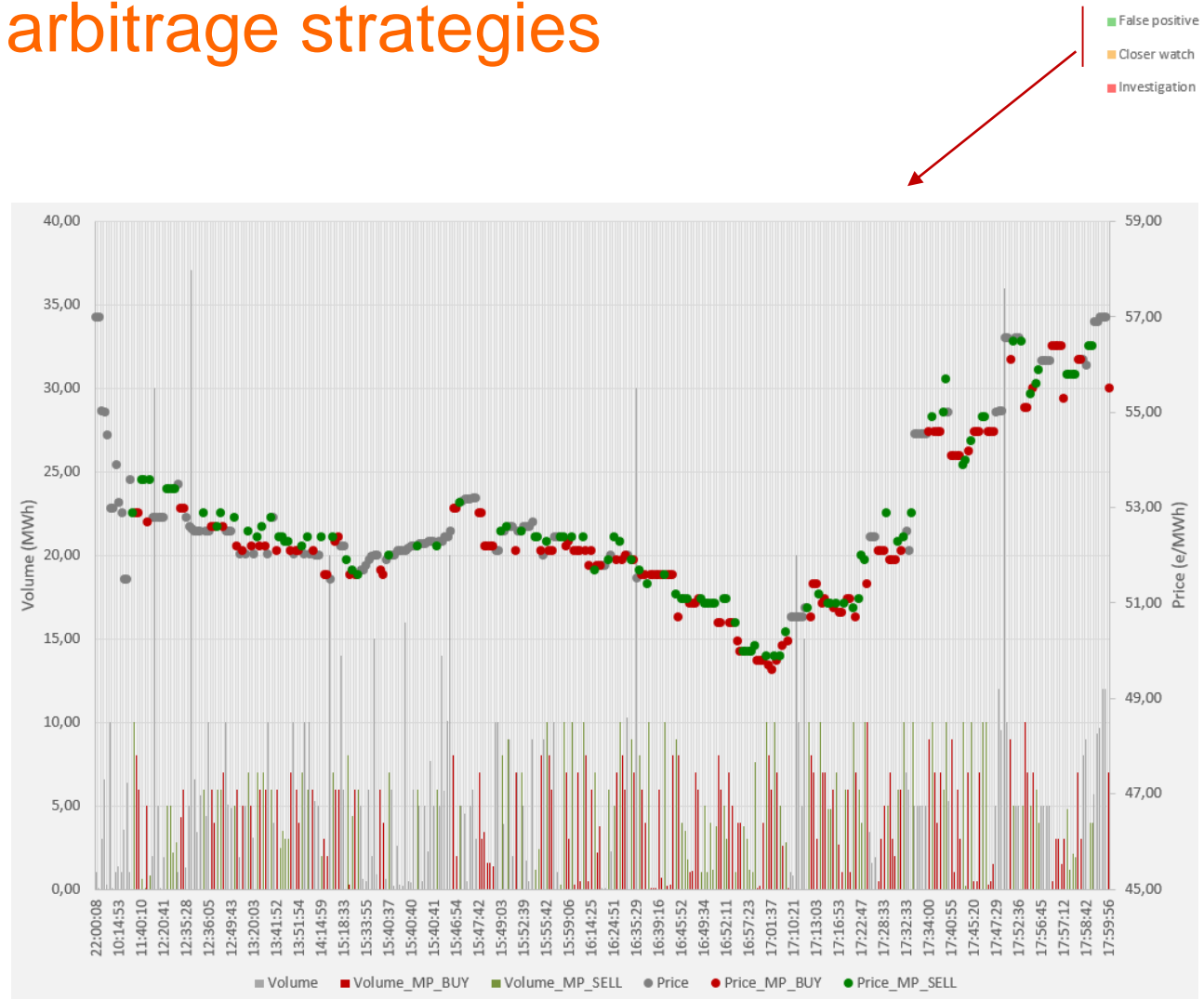
- Orders not for execution
- Buy and sell intention

## Analysis

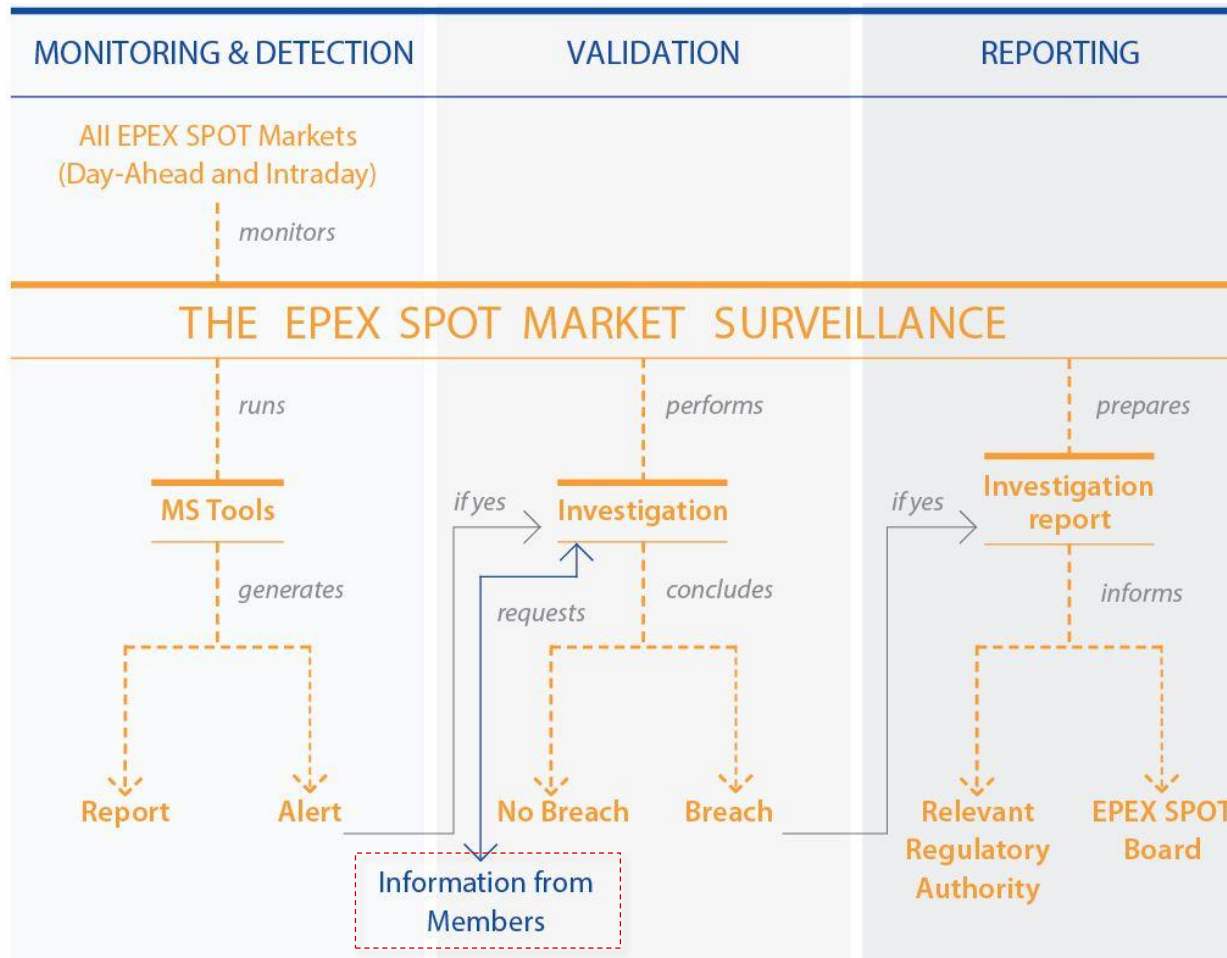
The MP is purchasing at lower prices than sales. No market cornering detected

## Final status

Closer monitoring



# Ensure a dialogue with the members to clarify their economic justification and promote improvements

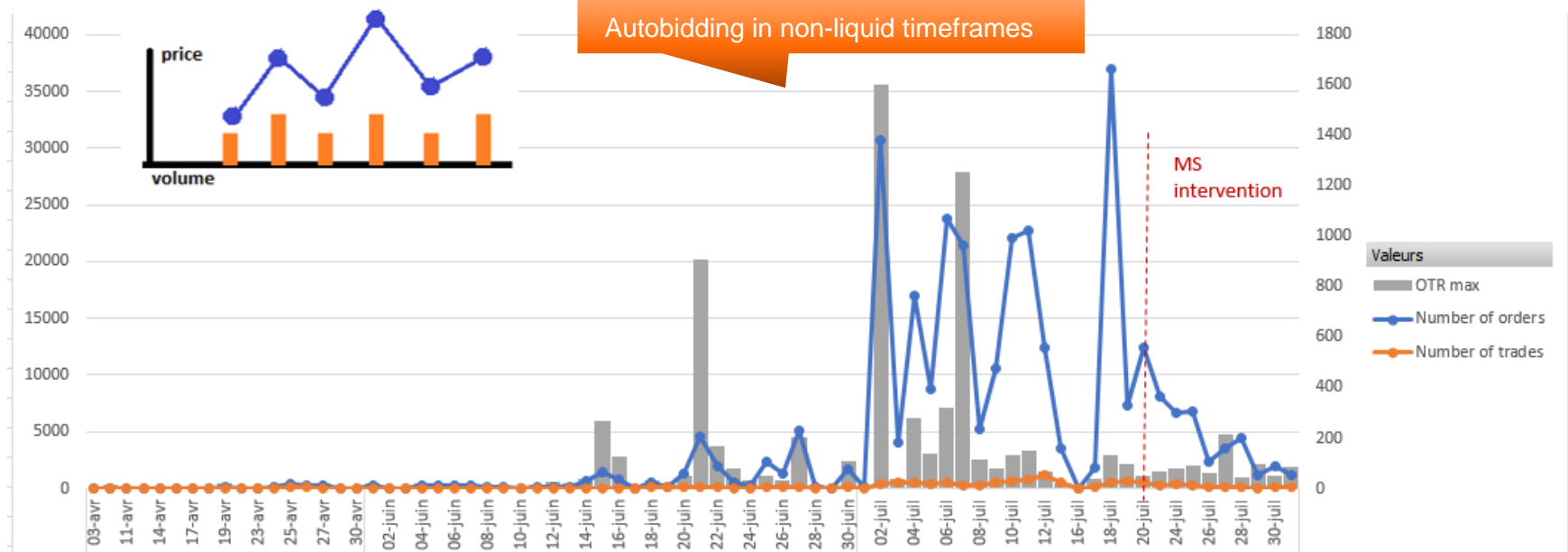


# More than 30 members contacted on their algorithmic behavior leading to noticeable improvements

More than 30 different members contacted via requests for information on their algorithm behaviour over 2016-2018.

Most of all requests for information sent by MS to Members **have proven useful**:

- Reduction of REMIT breach suspicions
- Improvement of algorithms conformity
- Highlighting of market design issues



# Miscalibrations, technical and operational constraints often explain the misbehavior

Most of the time, when related to algorithm behavior, members' economic justification highlight **non-intentional mis-trading and willingness to solve immediately the issue. Market Surveillance will closer monitor afterwards in case of repetition.**

## Cross-trading

- Non recognition of its own orders between two algorithms of the same company
- Algorithms provided by ISVs, without functionality not to cross-trade

## Sparkling

- Rounding errors of volume or price leading to constant order reloading

## Orders at deviated price

- Last minute battery charge/discharge management
- Last minute position closing algorithms
- Market halt leading to algorithm stress

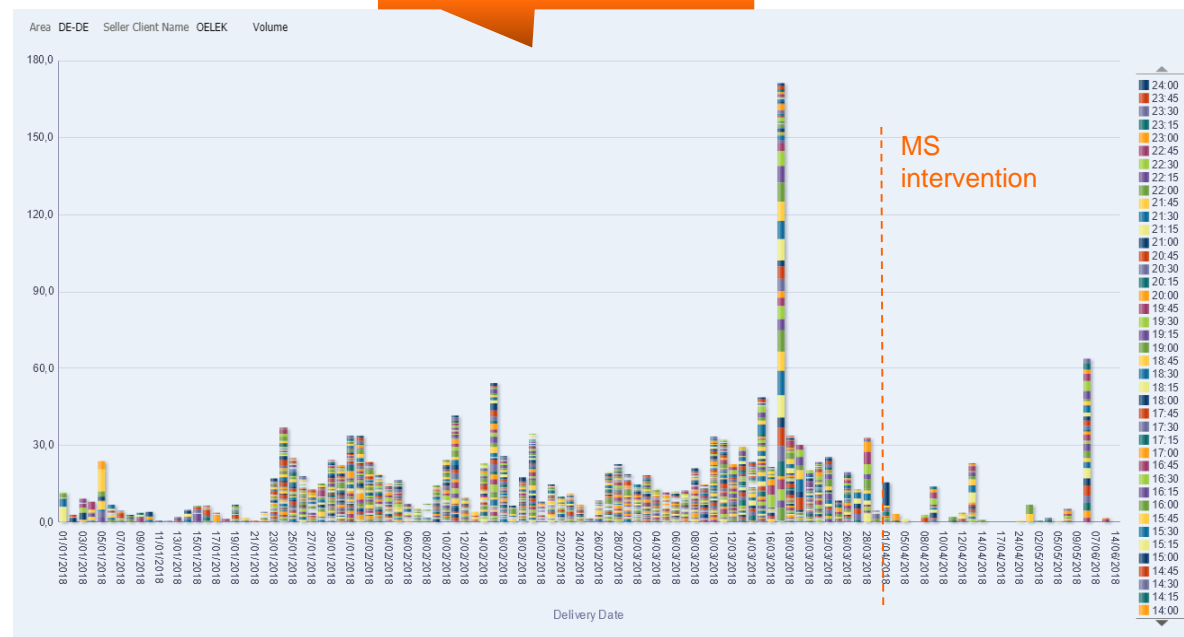
## Slicing

- Hide from overbidding algos to get a chance to reach best bid/ask tunnel

## Piling

- Different customers' asset optimization needing price print

Algorithm cross-trading



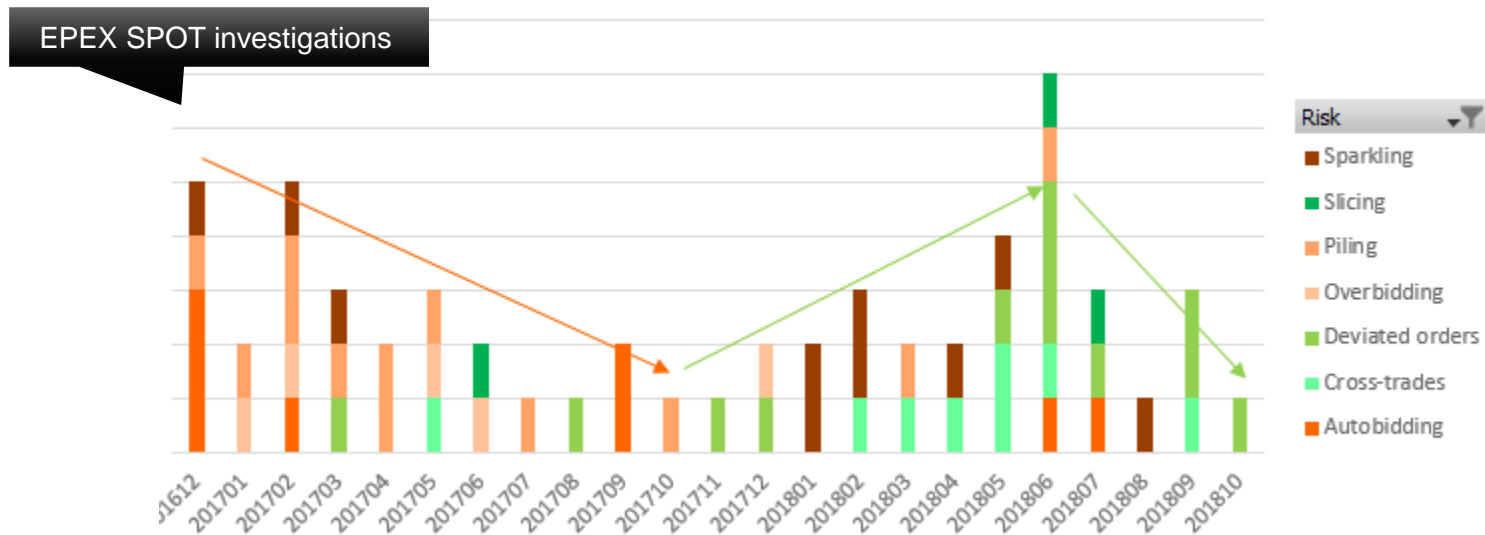
# A cautious daily monitoring is necessary to support the power market in its constant algorithm boom

## A general improvement thanks to requests for information

The EPEX SPOT Market Surveillance notes a significant reducing of algorithm non-conformity after the first request for information – patterns back in 2016 have disappeared from the investigation list in 2018

## A need for constant monitoring of new patterns

Still, new patterns of algos and miscalibrations will appear afterwards due to constant evolving power markets. The Surveillance shall be ready to adapt and help the market overcome this new trend







› epexspot

Cooperation on REMIT  
is key to accompany our members

# Ensure prevention through active Workshops with our members to discuss REMIT and practical cases

- EPEX SPOT MS organizes regularly Workshops with a panel of representative Exchange Members to discuss REMIT topic and share one's understanding of regulation around roundtables. The outcome of the discussion are then shared between Members in EPEX SPOT Q&A.



## Roundtables



Participants are the real players



# A sound cooperation with Regulators and ACER to share members views, discuss market design and REMIT

EPEX SPOT MS regularly meet with the NRAs responsible for its markets and ACER

- These meetings are the occasion to discuss notified cases and investigations
- EPEX SPOT MS take the opportunity to share Members' views with these Authorities



# Thank you for your attention!

**EPEX SPOT Paris**

5 boulevard Montmartre  
75002 Paris  
France  
Tel +33 1 73 03 96 00  
[sales@epexspot.com](mailto:sales@epexspot.com)

**EPEX SPOT London**

11 Westferry Circus  
Canary Wharf  
London E14 4HE  
United Kingdom

**EPEX SPOT Bern**

Marktgasse 20  
3011 Bern  
Switzerland

**EPEX SPOT Amsterdam**

Quarter Plaza  
Transformatorweg 90  
1014 AK Amsterdam  
The Netherlands  
Tel +31 20 305 4000

**EPEX SPOT Leipzig**

Augustusplatz 9  
04109 Leipzig  
Germany

**EPEX SPOT Brussels**

Boulevard de l'Impératrice 66  
1000 Bruxelles  
Belgium

**EPEX SPOT Wien**

Mayerhofgasse 1/19  
1040 Wien  
Austria