

# **Kurzfristhandel in Europa – Day-Ahead & Intraday Märkte der EPEX SPOT**

Bundesministerium für Wirtschaft und Energie

Strommarkttreffen, Europäische Strommarktintegration

Berlin, 02. Juni 2017

Patrick Adigbli, Head of Public & Regulatory Affairs, EPEX SPOT

# Shareholder structure

Source: EPEX SPOT



# Role of EPEX SPOT in the electricity market

**eeX**

**EPEXSPOT**

**TSO**

DERIVATIVES



DAY-AHEAD



INTRADAY



BALANCING

Years/months/weeks  
before delivery

One day  
before delivery

<1 hour  
before delivery

Real-time

Price variations are  
**HEDGED**

Optimization of  
**GENERATION**

Valuation of  
**FLEXIBILITY**

Ensuring  
**SYSTEM SECURITY**



INTEGRATED CLEARING SOLUTION

Source: EPEX SPOT

# EPEX SPOT markets

WIDEST RANGE OF OPERATION AND SERVICES IN EUROPE

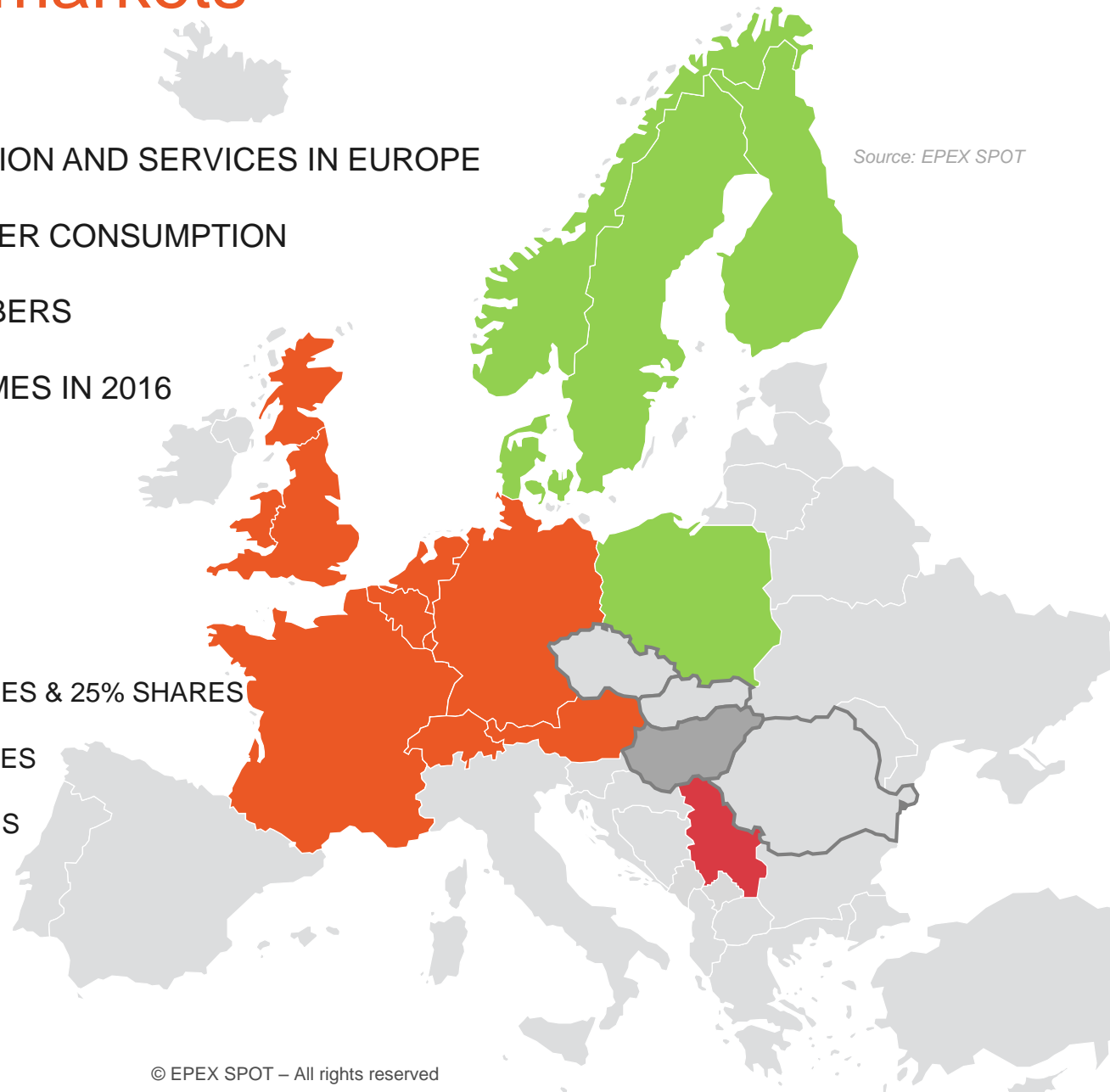
COVERING 50% OF EU POWER CONSUMPTION

OVER 275 EXCHANGE MEMBERS

530 TWH OF TRADED VOLUMES IN 2016

Source: EPEX SPOT

-  CURRENT OWN MARKETS
-  MARKET EXPANSION
-  MARKET OPERATION SERVICES & 25% SHARES
-  MARKET OPERATION SERVICES
-  MARKET COUPLING SERVICES



# Volumes 2016

**DE/AT/LU: 275 TWh**

Thereof intraday: 41 TWh

Share in consumption: 50%

Delivery zones: 50Hertz, Amprion, APG, TenneT, TransnetBW



**FR: 115 TWh**

Thereof intraday: 4 TWh

Share in consumption: 24%

Delivery zone: RTE



**NL: 36 TWh**

Thereof intraday: 1 TWh

Share in consumption: 33%

Delivery zone: TenneT

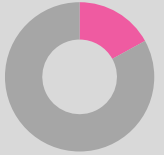


**UK: 57 TWh**

Thereof intraday: 13 TWh

Share in consumption: 17%

Delivery zone: National Grid



**BE: 20 TWh**

Thereof intraday: 1 TWh

Share in consumption: 24%

Delivery zone: Elia



**CH: 26 TWh**

Thereof intraday: 2 TWh

Share in consumption: 40%

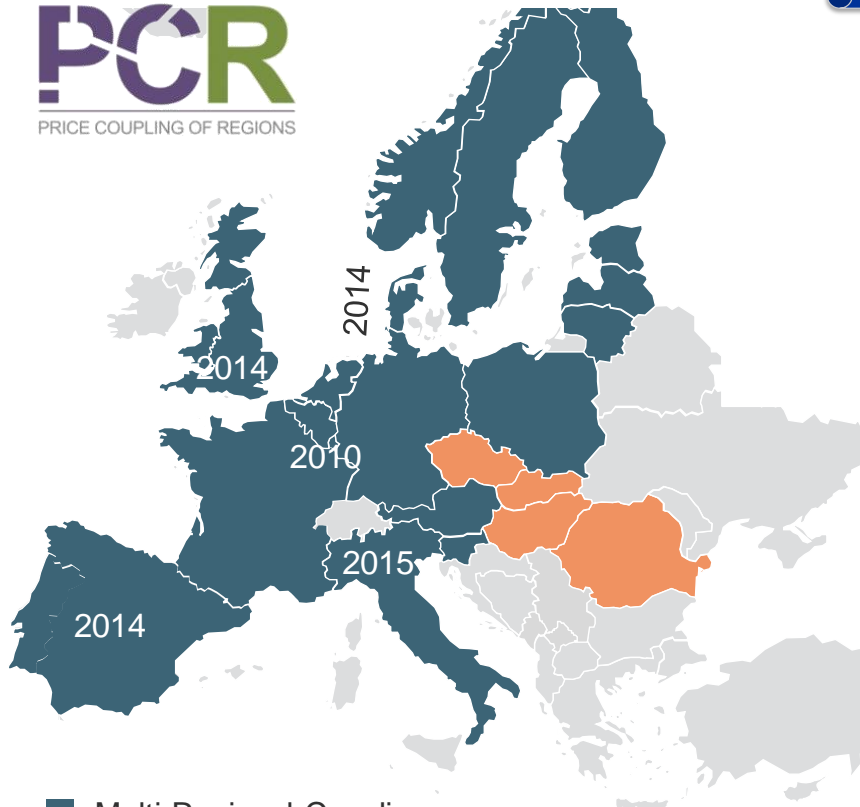
Delivery zone: Swissgrid



Source: EPEX SPOT

# European Market Coupling

## DAY-AHEAD MARKET COUPLING



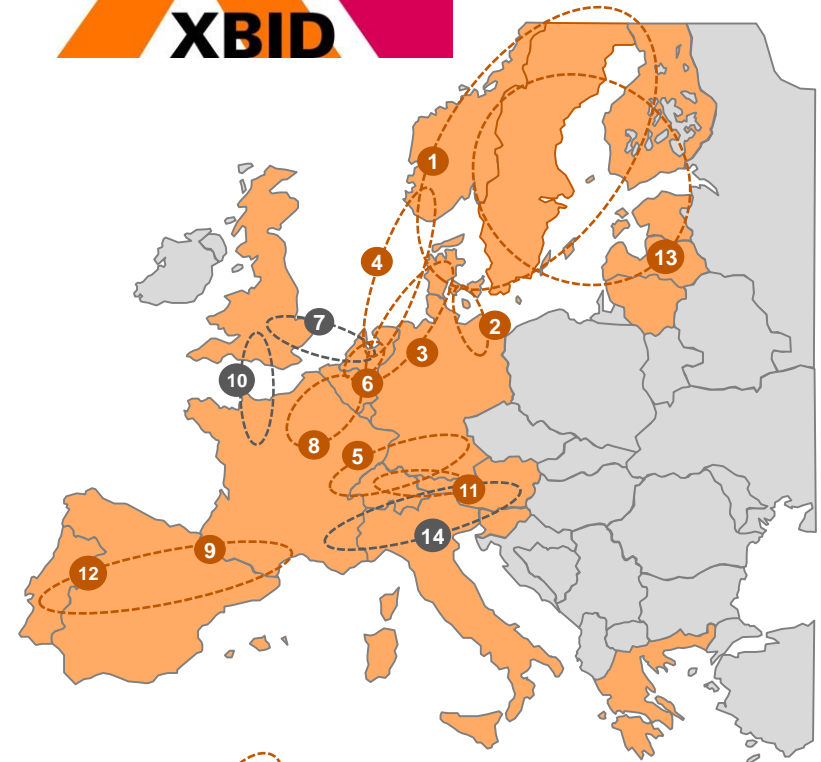
- Multi-Regional Coupling
- 4M Market Coupling

Both driven by the  
Price Coupling of Regions  
(PCR) solution



## INTRADAY MARKET COUPLING

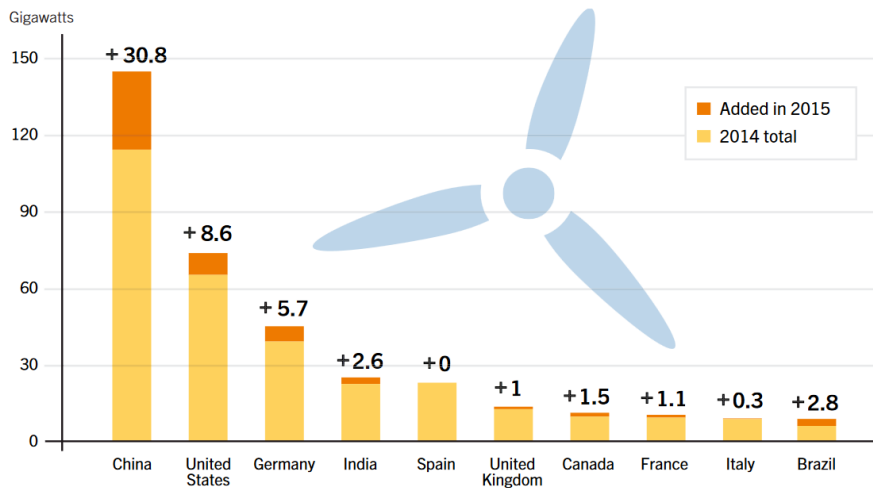
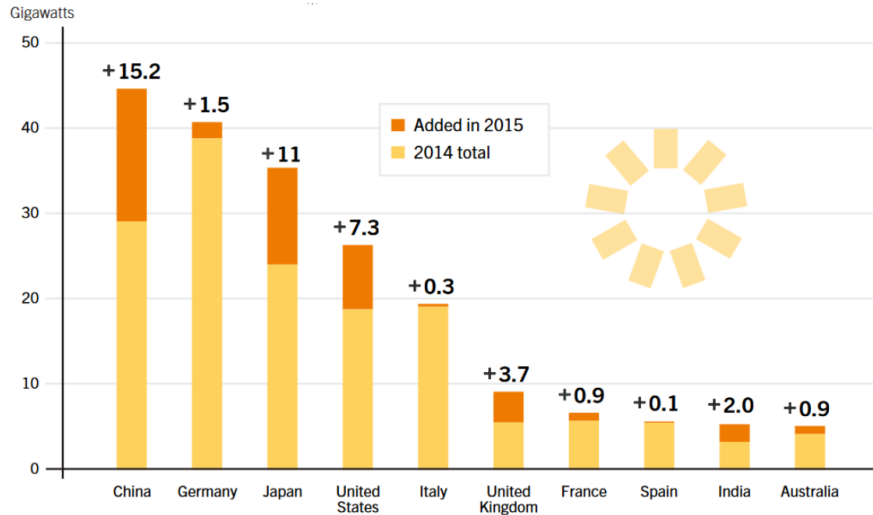
Source: EPEX SPOT



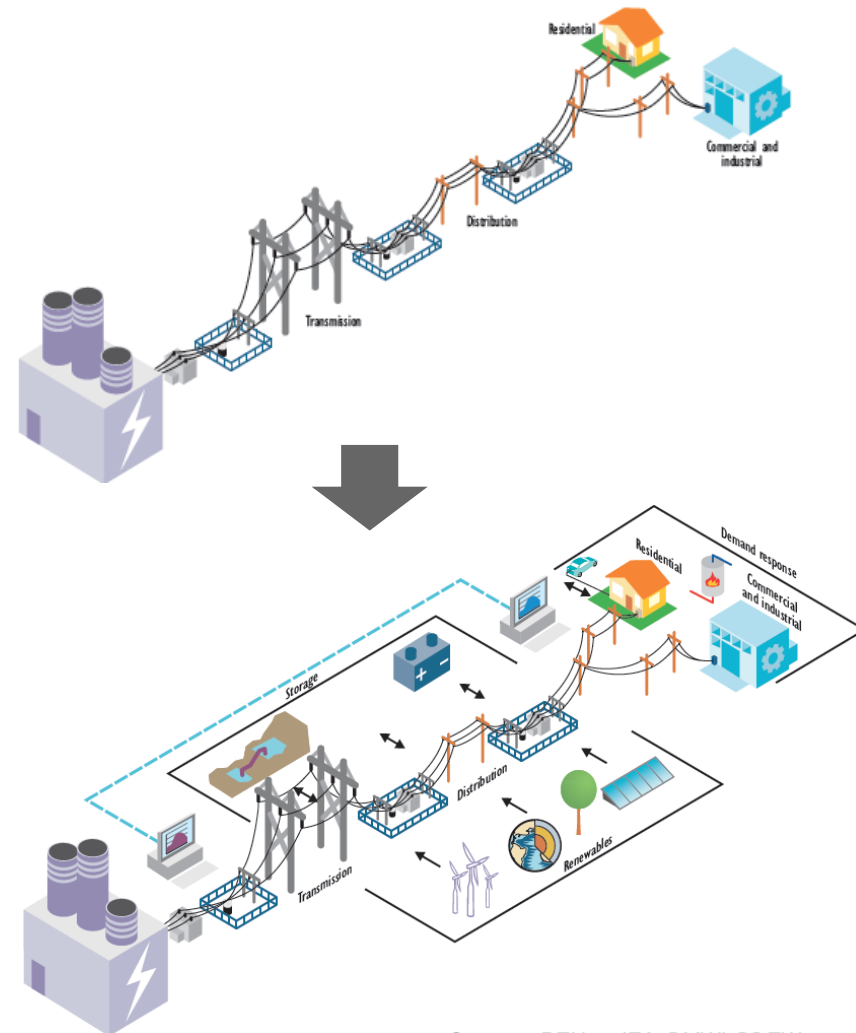
- 1ST GO-LIVE WAVE LIP
- 2ND GO-LIVE WAVE LIP

# Transformation of the electricity sector

## RENEWABLE GROWTH



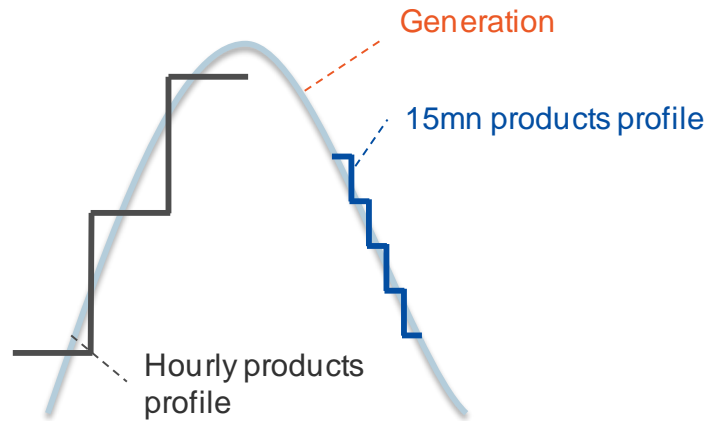
## DECENTRALISATION



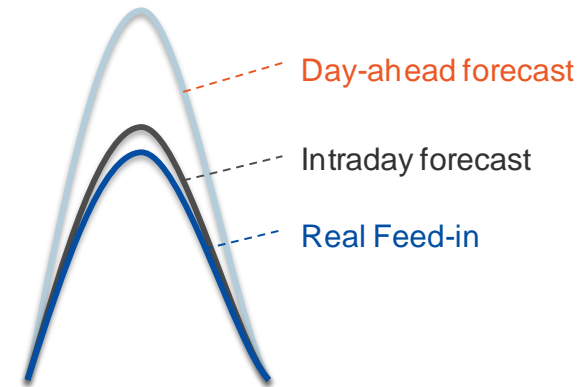
Sources: REN21, IEA, BMWi, BDEW

# Flexibility challenges and intraday trading

## GENERATION RAMPS



## FORECAST DEVIATIONS



1

Adjust purchase and sale based on the results of the day-ahead auction

2

Run and plan power generation closer to delivery

3

Manage unforeseen events such as power plant outage or renewable forecast errors

4

Enable arbitrage between neighboring countries, provide opportunities for cross-border trading

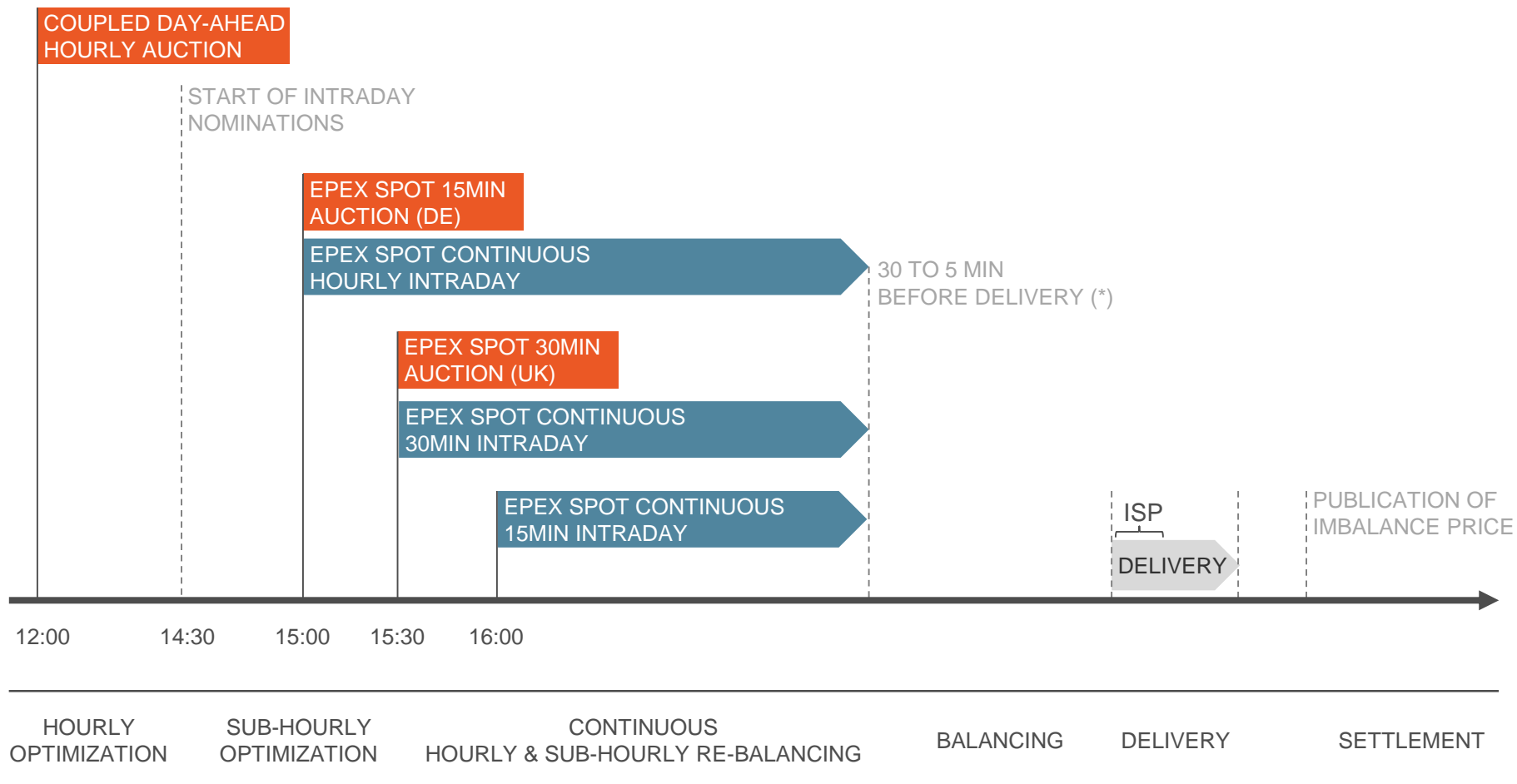
5

Offer flexibility to manage ramping constraints or intra-hour variation, adjust from hourly to sub-hourly positions

Source: EPEX SPOT



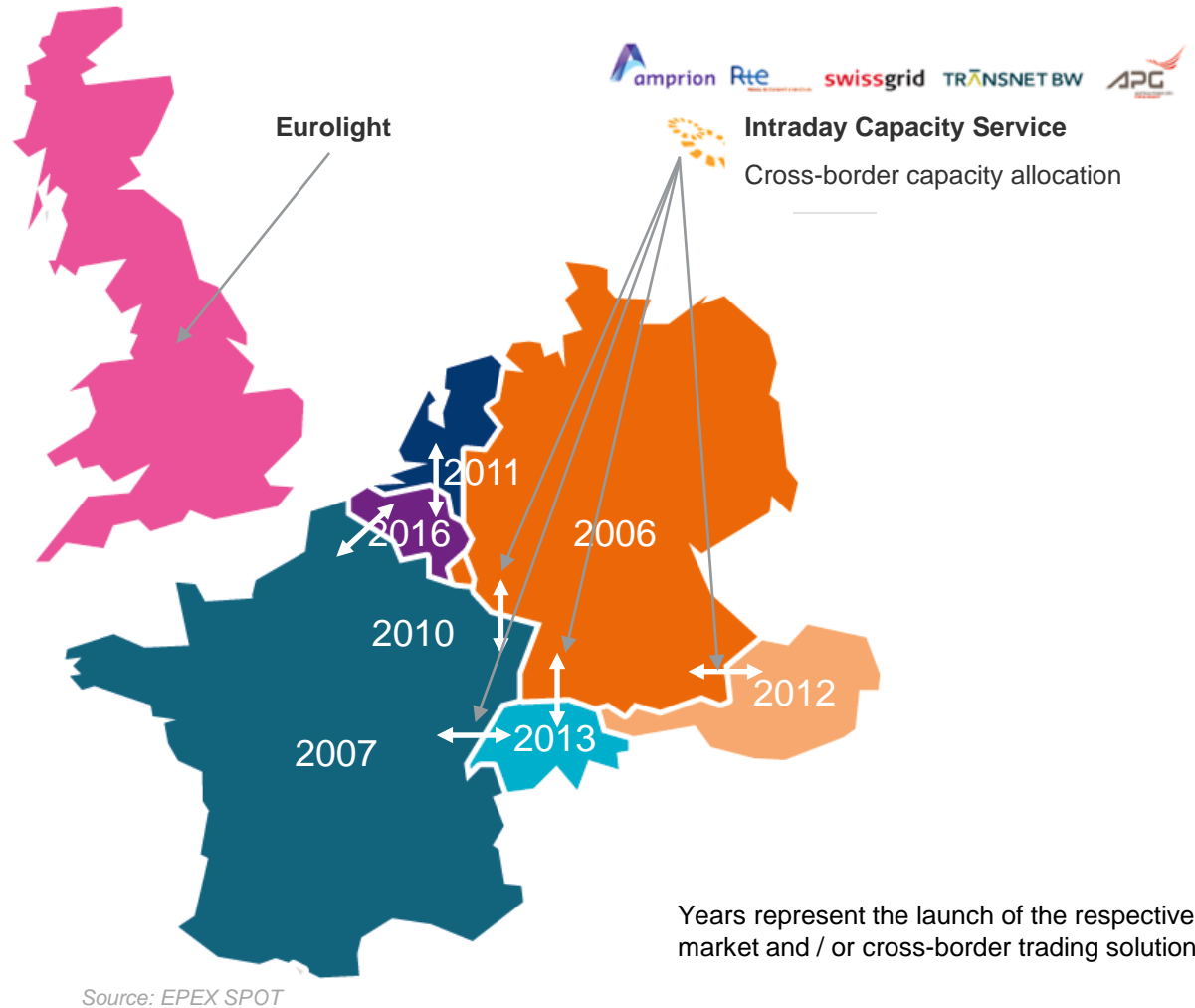
# Timeline of EPEX SPOTs markets



Source: EPEX SPOT

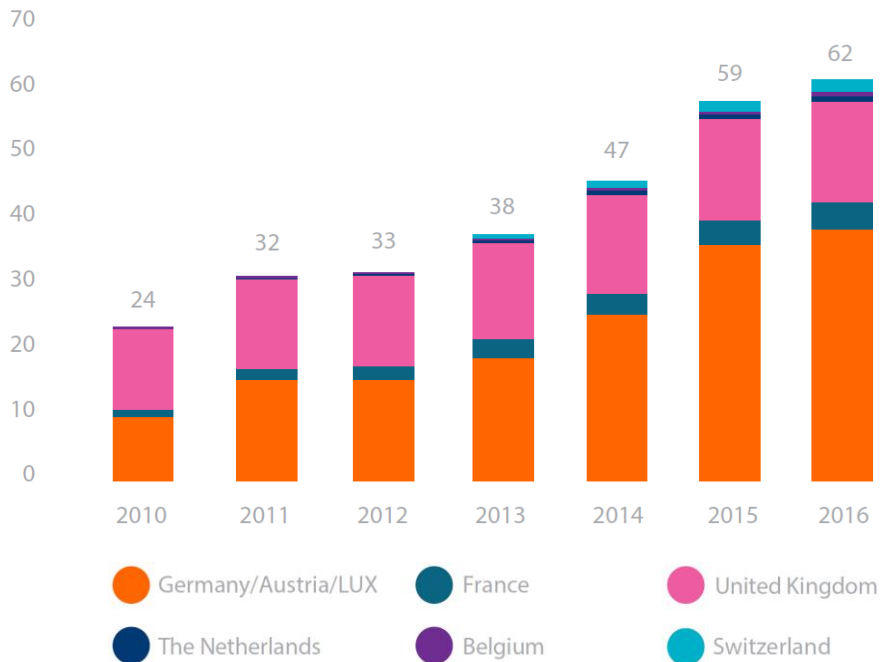
(\*) Both local and cross-border lead times are country-specific. In the majority of EPEX SPOTs markets, local lead times are 30min or less, and cross-border lead times are generally 60min.

# EPEX SPOTs cross-border intraday markets

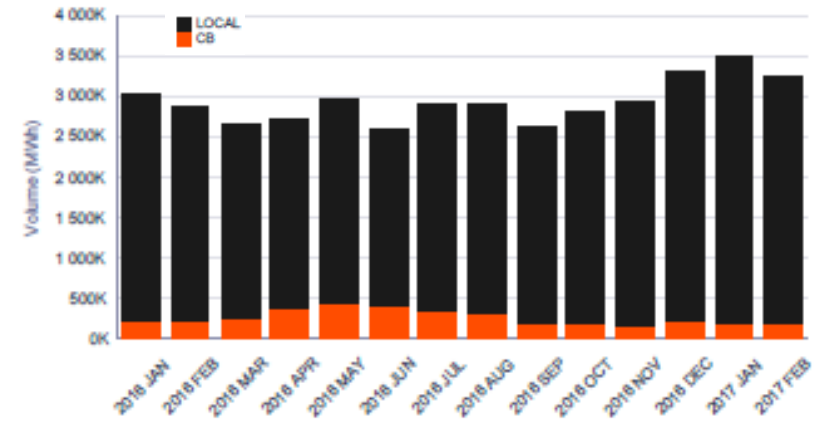


# Increasing intraday liquidity

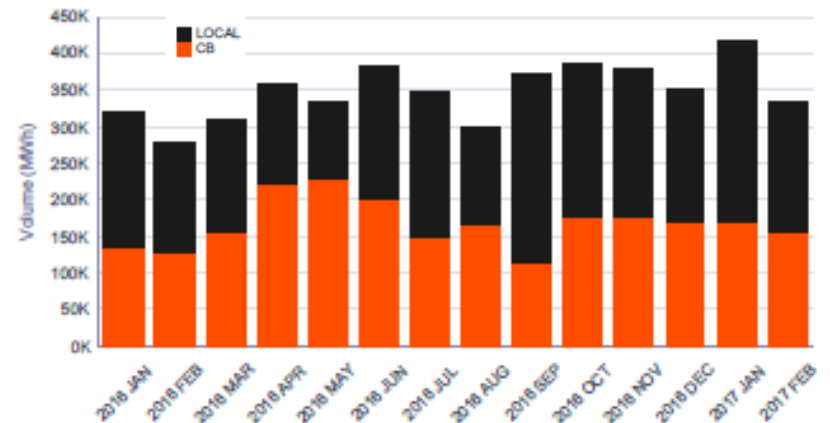
## OVERALL INTRADAY MARKETS (TWH)



## DE INTRADAY CONTINUOUS (TWH)



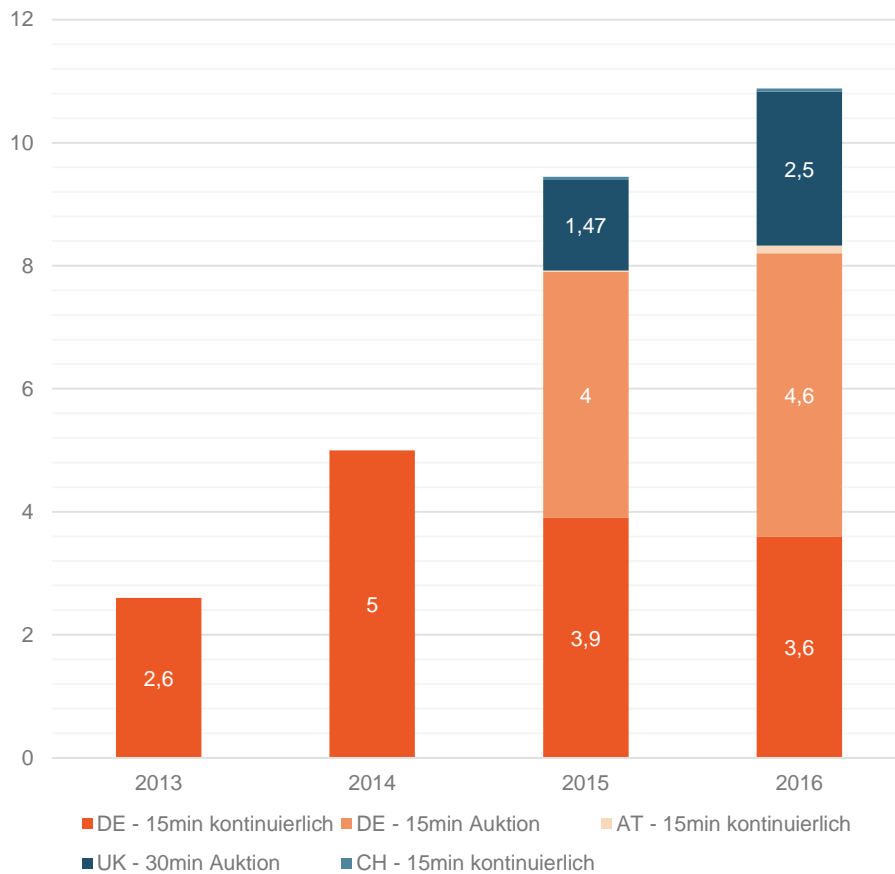
## FR INTRADAY CONTINUOUS (TWH)



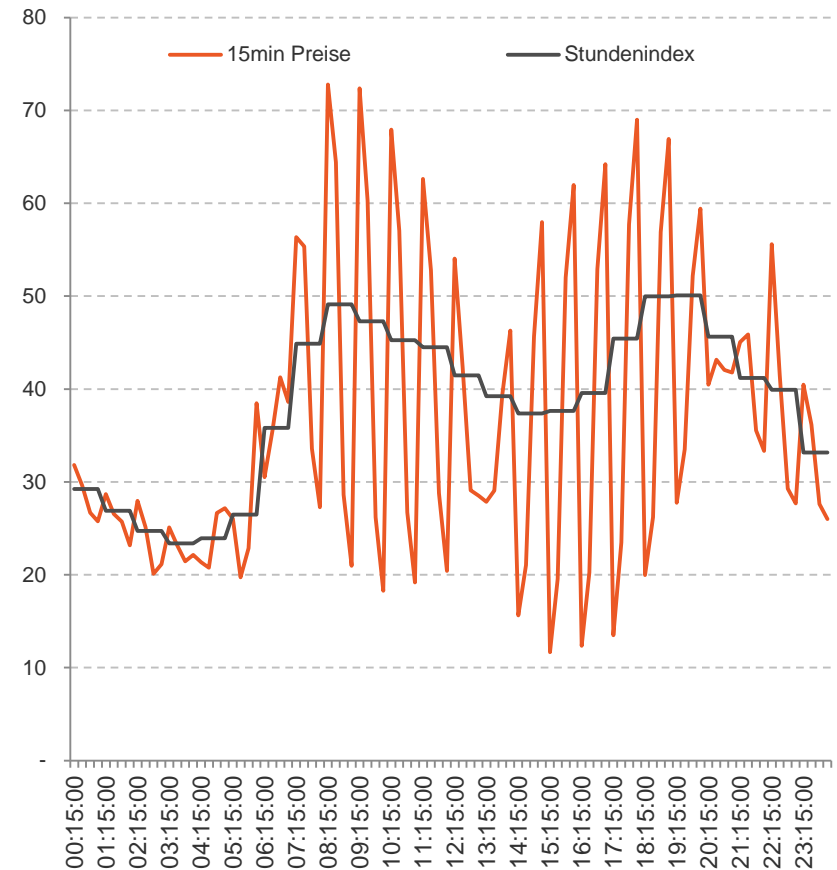
Source: EPEX SPOT

# Sub-hourly contracts

## 15MIN & 30MIN VOLUMES – AUCTION VS. CONTINUOUS (TWH)



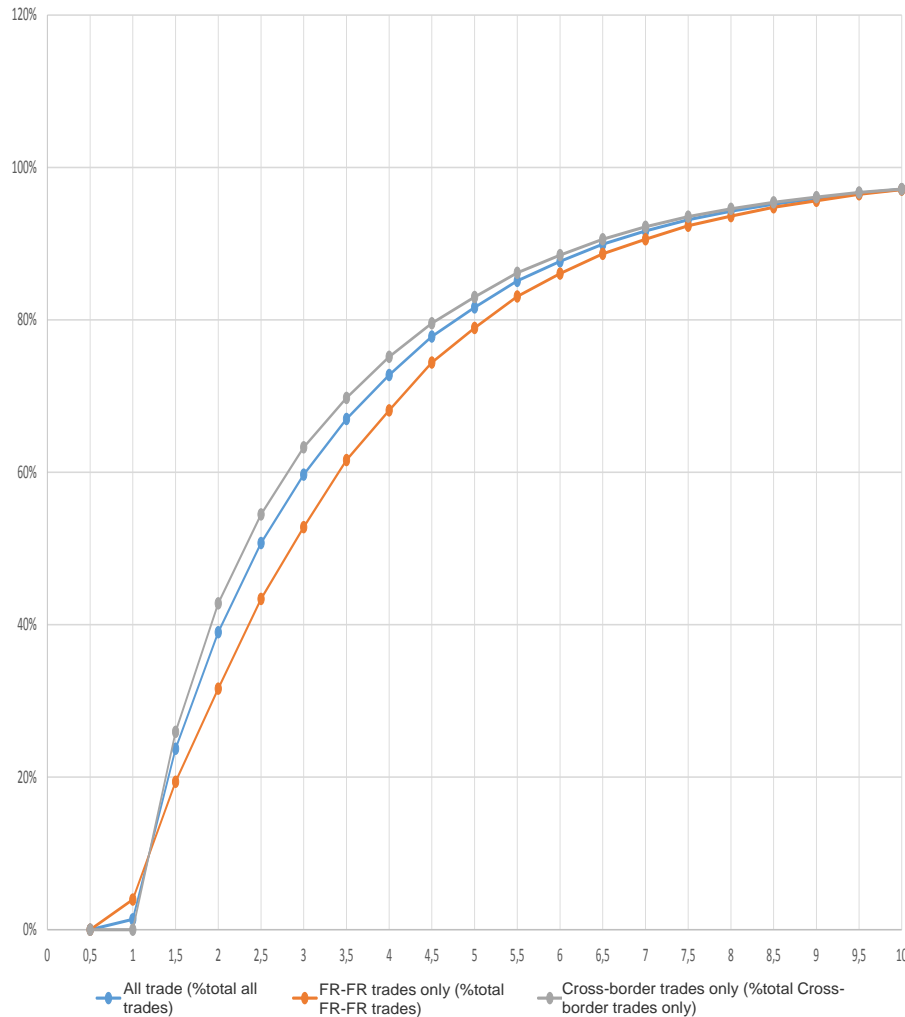
## 15MIN PRICES – CONTINUOUS (EUR/MWH)



Source: EPEX SPOT

# Lead time reduction on continuous intraday

VOLUMES DISTRIBUTED BY TIME TO DELIVERY IN % OF TOTAL



EPEX SPOT INTRADAY LEAD TIMES

Trading	Before 2015	Since 2015/16
within BE		5 minutes
within NL		5 minutes
within DE	45 minutes	30 minutes (*)
within FR	45 minutes	30 minutes
within AT	75 minutes	30 minutes
within CH	75 minutes	60 minutes
within UK		75 minutes
between DE-FR	60 minutes	60 minutes
between DE-AT	75 minutes	60 minutes
between DE-CH	75 minutes	60 minutes
between FR-CH	75 minutes	60 minutes
between BE-NL		60 minutes
between DE-NL (**)		60 minutes
between BE-FR		60 minutes

(\*) As of 2017, 5 minutes before delivery within four DE TSO areas

(\*\*) Indirect link

# Automated trading

IT'S NO SCIENCE FICTION...



... AND IT'S NOT THAT SCARY

The screenshot displays the EPEX SPOT trading interface. It features several panels: a top navigation bar, a 'Market Overview' panel on the left, a 'Block Market Overview' panel in the center, and a 'Market Overview' panel on the right. The bottom section contains a 'Trade' panel with columns for 'Side', 'Contract', 'Quantity', 'Price', 'Type', and 'Recv Bf'. The interface is designed for real-time monitoring and execution of trades.

# Thank you for your attention!

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