

Larger, Closer, Faster, Greener :

Short-term power markets integration & new trends in trading

ETSCEE, Budapest
5 June 2024

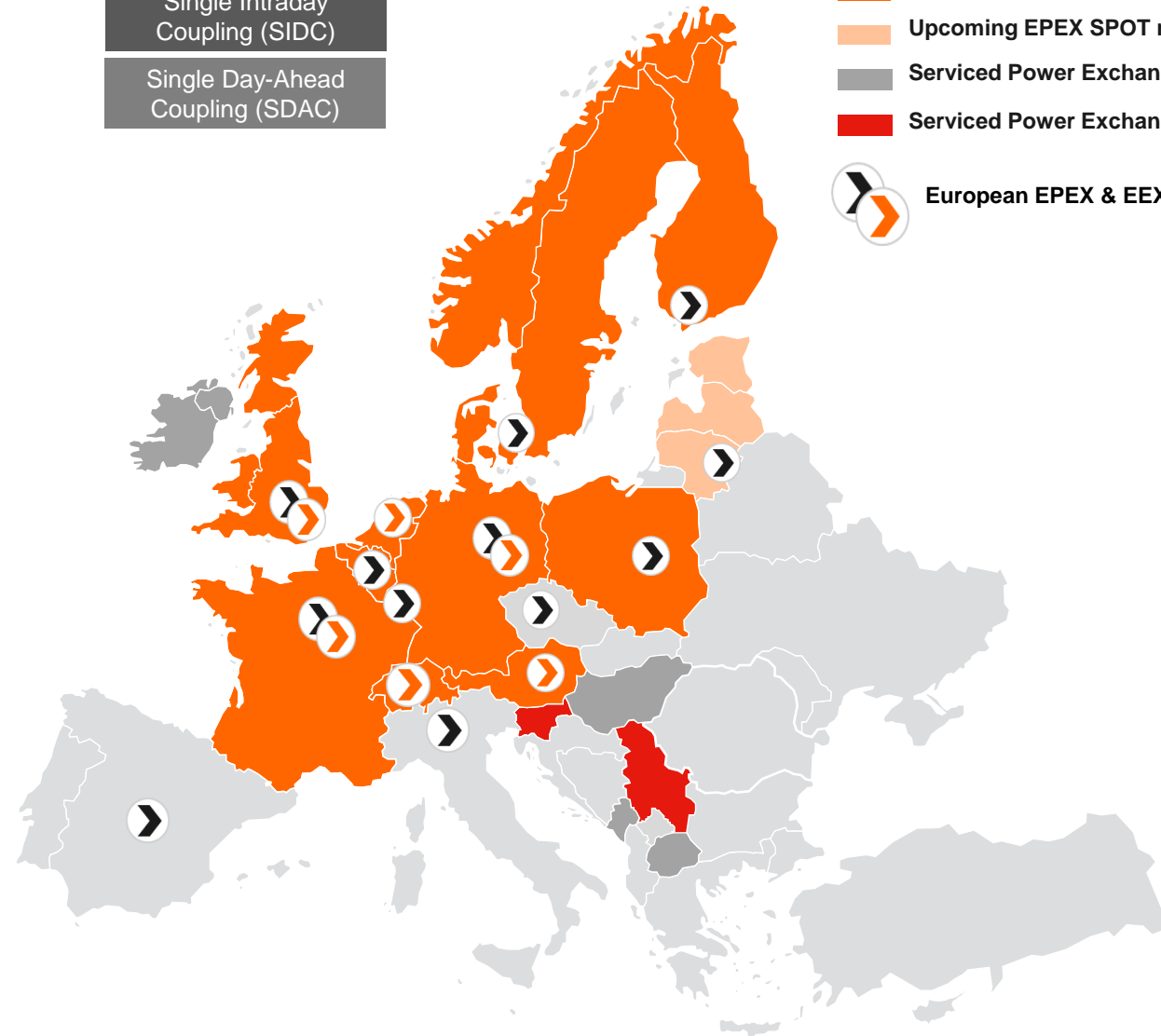
David Assaad, Director Marketing & Customer Solutions

EPEX SPOT at a glance

400+ trading members	717 TWh traded <i>in 2023</i>
Largest Power Spot Market in Europe	Pan-EU GOs auction <i>Launched in 2022</i>
21 borders <i>market-coupled</i>	Localflex solution <i>Launched in 2023</i>
Markets covered under the roof of the Clearing House › ecc	

Single Intraday Coupling (SIDC)
Single Day-Ahead Coupling (SDAC)

- Current EPEX SPOT markets
- Upcoming EPEX SPOT markets
- Serviced Power Exchanges
- Serviced Power Exchanges & 33.3% shares
-  European EPEX & EEX Group offices



Trade across the value chain of electricity

› eex

› epexspot

derivatives

› capacity

› origin

› dayahead

› intraday
› localflex

HEDGE
price fluctuations

Value
CAPACITY &
DEMAND RESPONSE

Value
GREEN POWER

Value
PRODUCTION &
CONSUMPTION

Value
FLEXIBILITY

› ecc

Integrated & Secure Clearing Solution



RICHEST
MARKET DATA

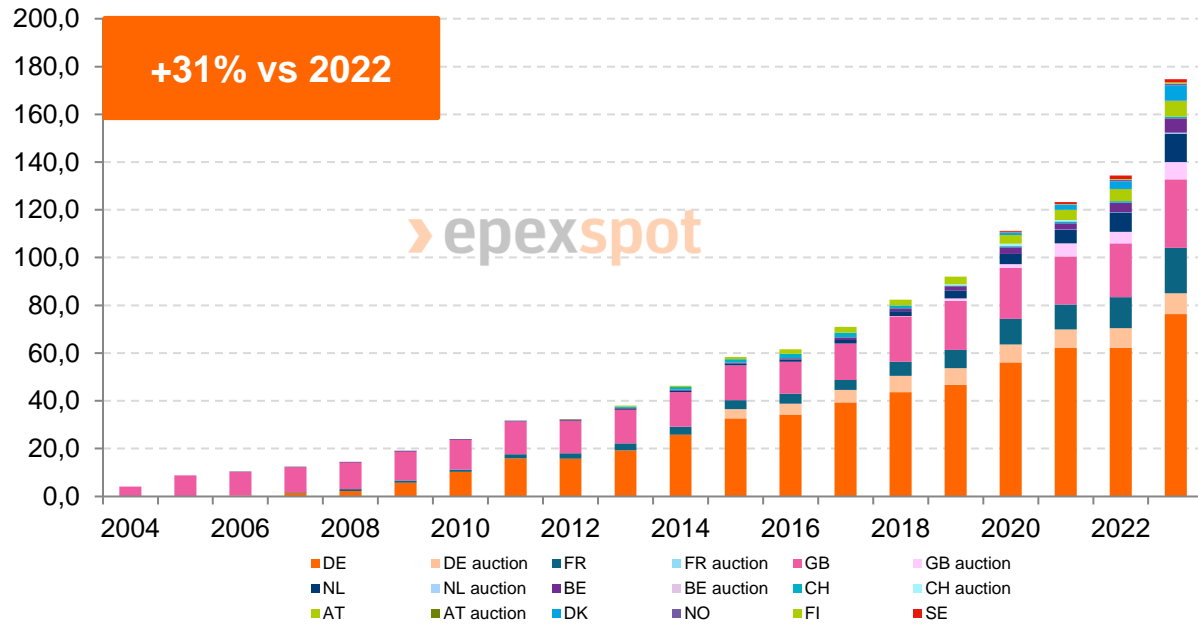


REMIT
REPORTING



TRANSPARENCY
SERVICES

Intraday liquidity increase at a fast pace across Europe



The markets are interconnected via Single Intraday Coupling (except for CH and GB)

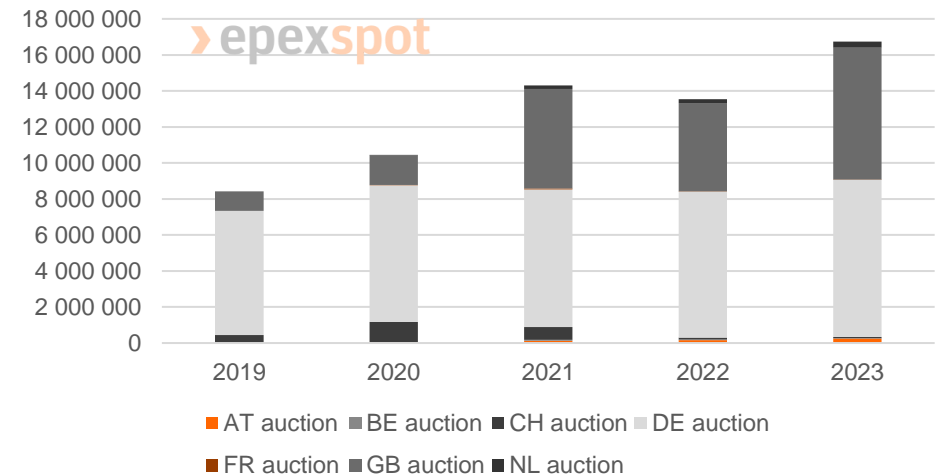
Dynamic local auctions

- Intraday auctions volumes increase by +99% in 2018-23
- GB Intraday auctions volumes increase by +574% in 2018-23

Fast-expanding Intraday continuous markets

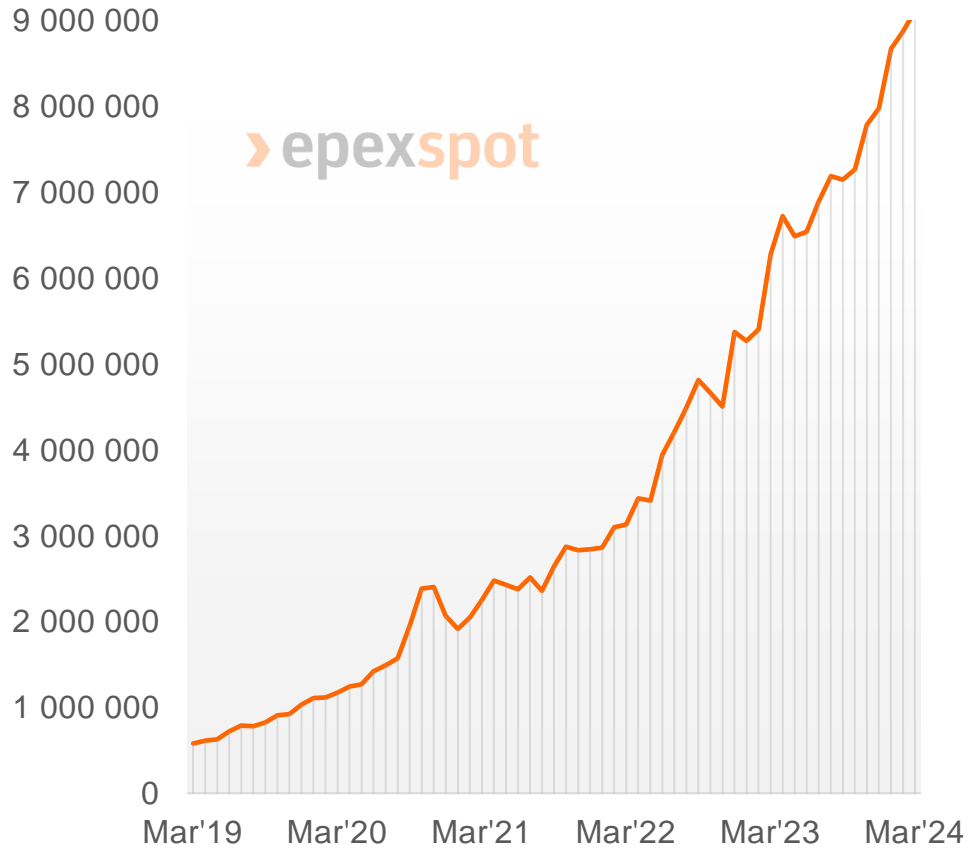
- 50% CAGR since 2008
- 17% QH and HH continuous market share

Intraday Auctions

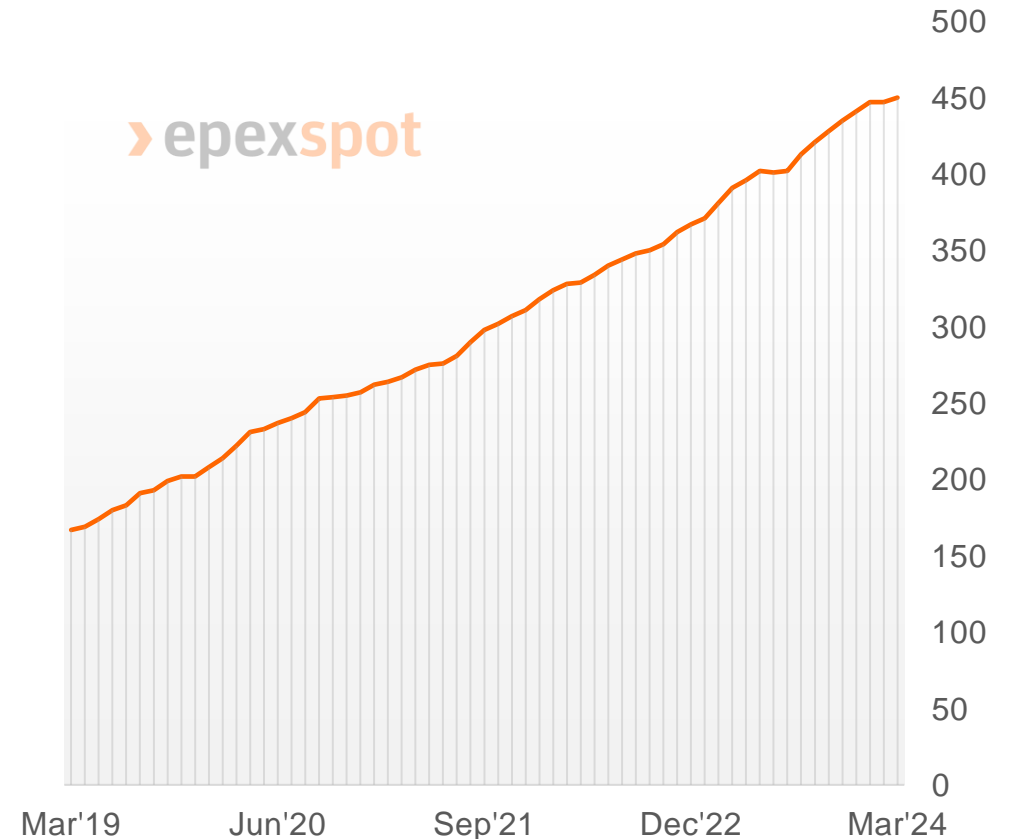


Algo-trading and volatility drive an exponential orders traffic growth

DAILY AVERAGE NUMBER OF SUBMITTED ORDERS (EPEX M7)



NUMBER OF CONNECTIONS VIA EPEX API (EPEX M7)



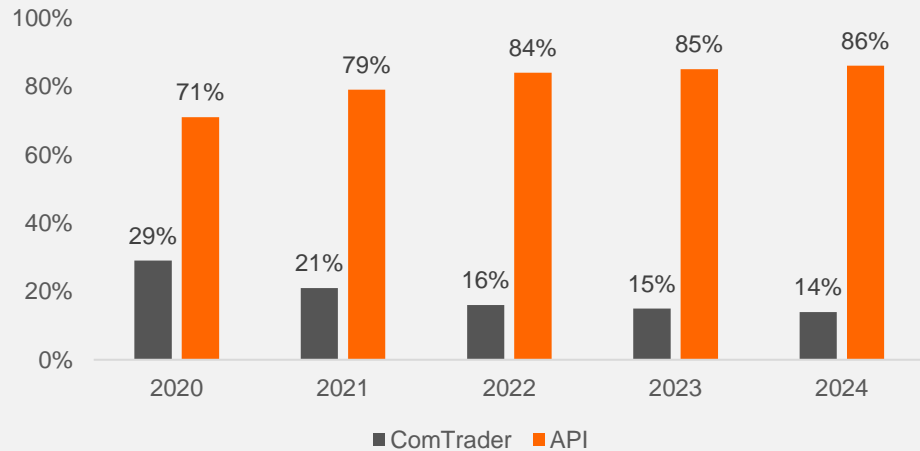
› **Daily orders exceeding 9 millions**

› **450 API connections, thereof 85% for trading**

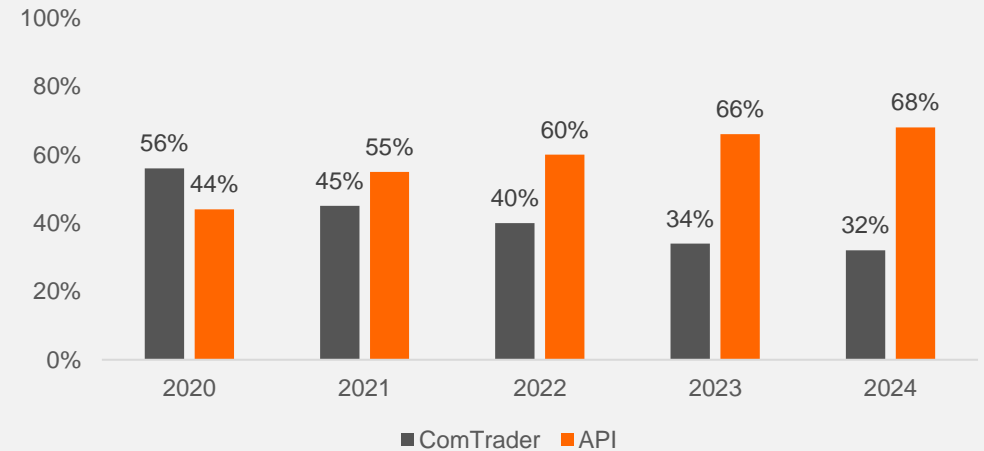
API trading apps are now the main channel in continuous markets

- ~86% of EPEX M7 traded orders come from API apps
- ~68% of EPEX M7 volumes are traded directly via API apps

Trades Origin API / Comtrader



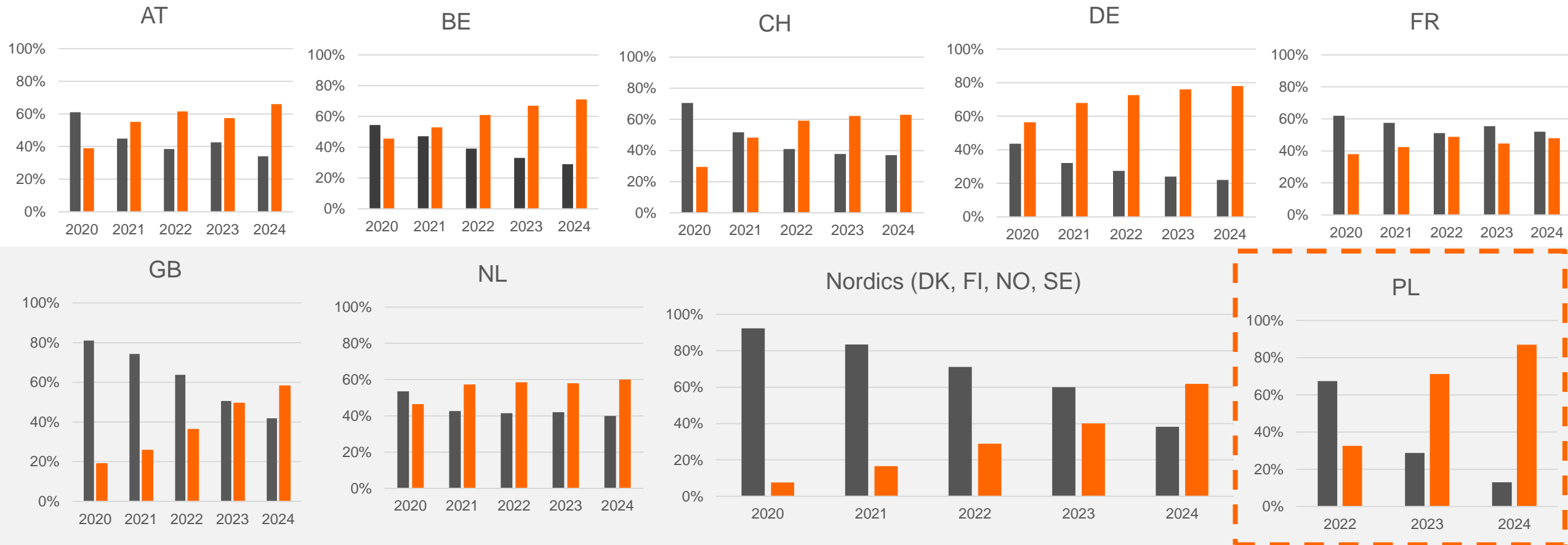
Traded Volumes API / Comtrader



As of 31st March 2024

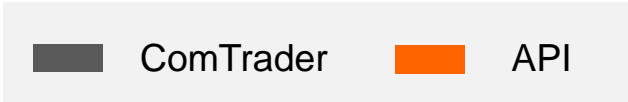
EPEX Certified Software Providers list: https://www.epexspot.com/en/membership/list_isv

API trading apps are now the main channel in continuous markets



As of 31st March 2024

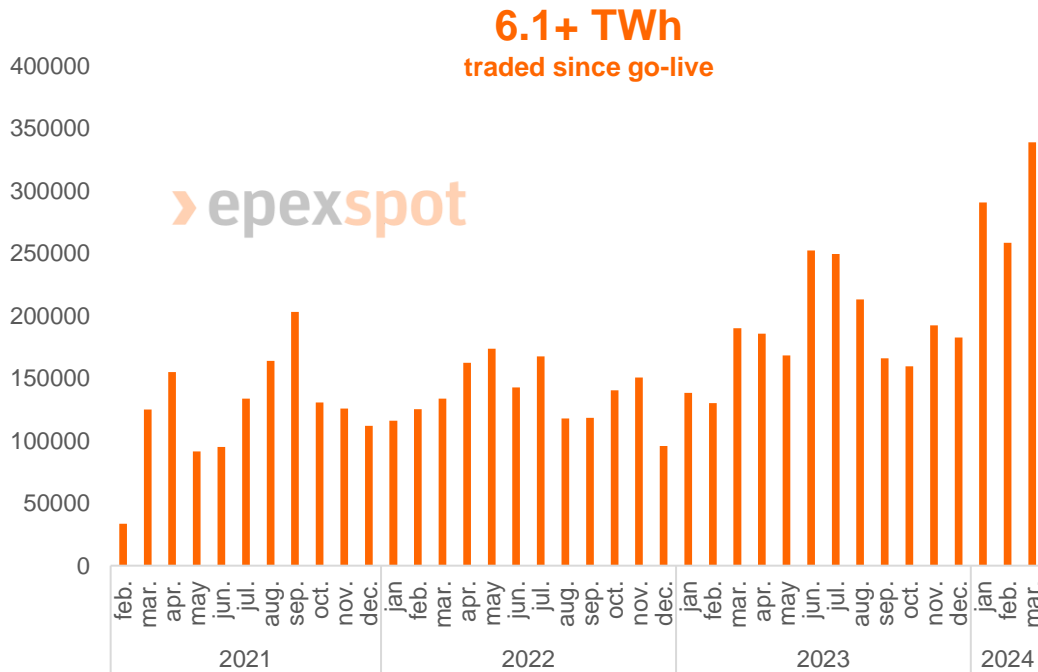
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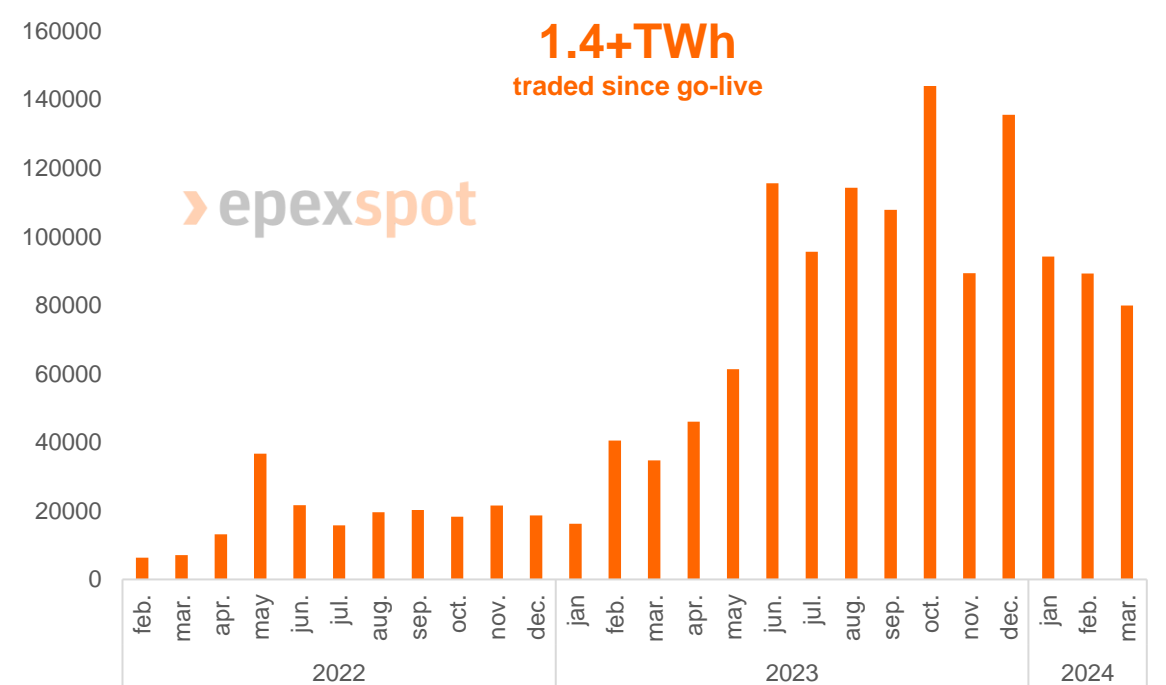
Focus on Poland: Promising spot power liquidity developments

- › Steady growth on Day-Ahead market with important opportunities on the 12:00 auction
- › Lots of interest for the Intraday market with promise of strong growth

Polish Day-Ahead auction launched in Feb 2021



Polish Intraday continuous launched in Feb 2022



Volumes are calculated by using the common industry standard in electricity and exchange business:

- For auction trading, the **one-sided Market Clearing Volume** is listed.
- For continuous trading, the **aggregated sell & buy volume is divided by 2**.

Focus on Poland: Key spot power market liquidity drivers

5th largest electricity market in EU

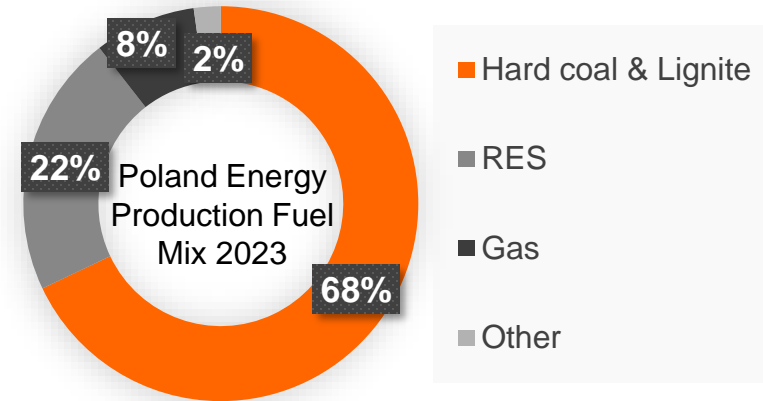
Annual power production **163,63 TWh** & consumption at **167,52 TWh** (2023). The largest production declines were in the coal-fired power sector.

"Windfall tax" for power trading and selling companies has been lifted in 2024.

This measure increases the freedom to trade energy and is an incentive to contract on the market.

Rapid PV development

Around **17 GW** installed capacity in 2023 vs 100 MW in 2015. Significant onshore wind projects are planned from 2027 and the first nuclear power plant in 2033.



The ongoing reform of the **Polish balancing market will enter into force from 14 June 2024.**

It will notably allow enable trading of **15 MTU contracts** in the power spot markets.

Poland expects to reach **29.8% of RES by 2030** in gross final energy consumption. The fastest growth of RES share will be in the electricity sector, where it could reach 50 % by 2030. The largest contributors would come from: **onshore wind (15.8 GW), solar (29.3 GW), and offshore wind (5.9 GW).**

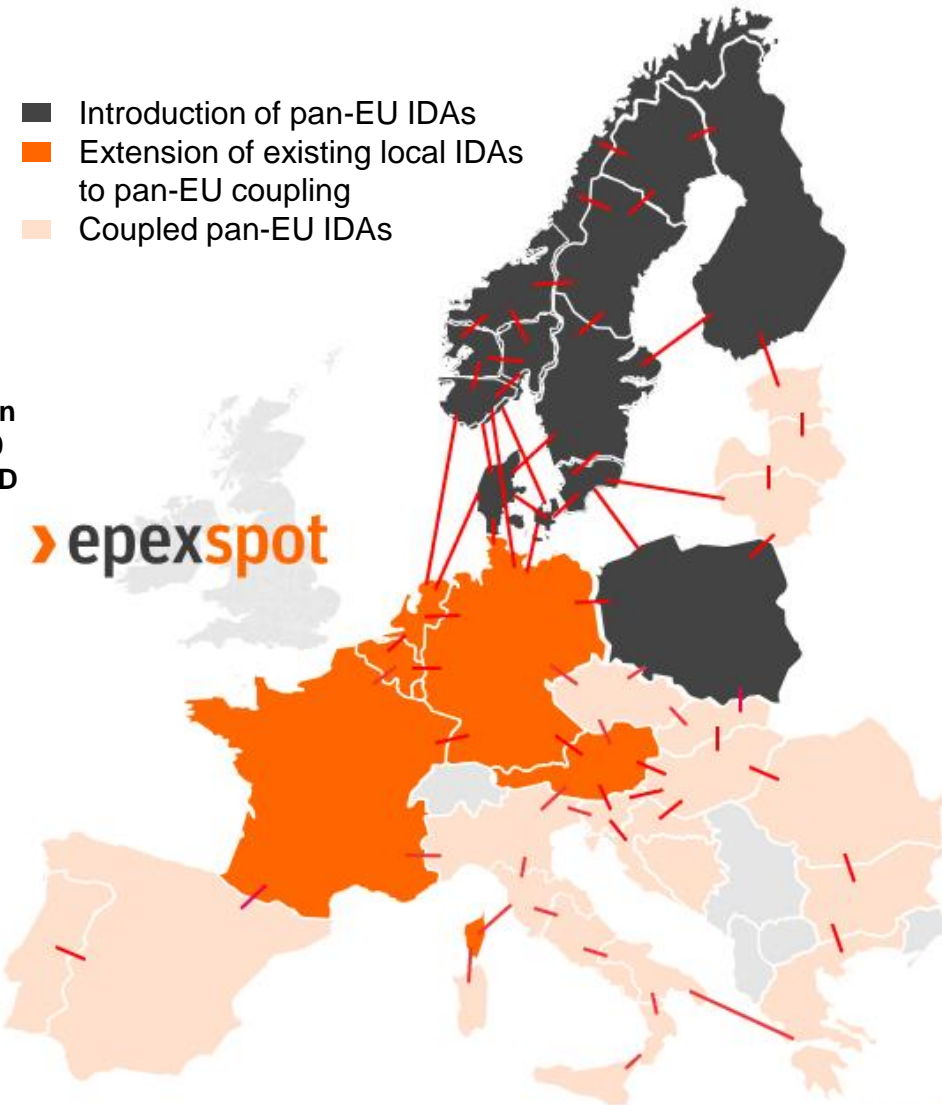
Pan-European Intraday Auctions: Impacts & Opportunities

› The **CACM regulation** foresees the introduction of 3 pan-European Intraday Auctions in all Single Intraday Coupling (“SIDC”) markets.



› This initiative aims at further **optimizing the cross-border capacity allocation** during the intraday trading phase.

- › This introduction of market coupling for intraday auctions should:
- **Further develop the liquidity** on existing IDAs
 - Bring **additional balancing opportunities** closer to delivery (IDA2, IDA3) through intraday auctions



Pan-European Intraday Auctions: Impacts & Opportunities

Cross border capacity allocations in the Pan-EU IDAs:

- › The methodologies to calculate the cross-border capacities available for each IDA is **specific to each TSO and therefore depends on regional rules** and regional communication
- › Depending on the TSO, 3 types of XB capacity can be allocated:
 - **Recalculated** capacity (maximised calculation, long query)
 - **Reassessed** capacity (intermediate optimization with hypothesis)
 - **Leftover** capacity (lowest outcome based solely on past allocations)



Lowest XB coupling opportunities since based on leftovers from day-ahead coupling capacities



Largest XB coupling opportunities with recalculations and re-assessments



Uncertain expectations at that stage

> eex > epexspot > ecc

Pan-European Guarantees of Origin Spot Market

Providing trading standards, transparency and strong price signals

AIB compatible



Hydro



Solar



Wind



Thermal Biomass



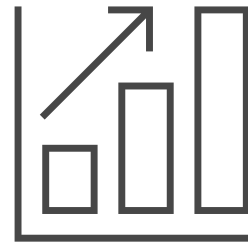
68 members registered

(May 2024)

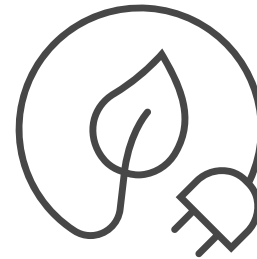
Bringing Exchange expertise to the environmental markets



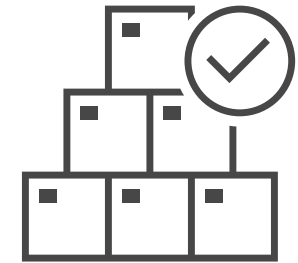
Build and develop a **trustful trading community**



Foster market **liquidity & transparency**



Support **GOs development** and evolutions



Structure / institutionalize the GOs market

A genuine Pan-European GOs offering

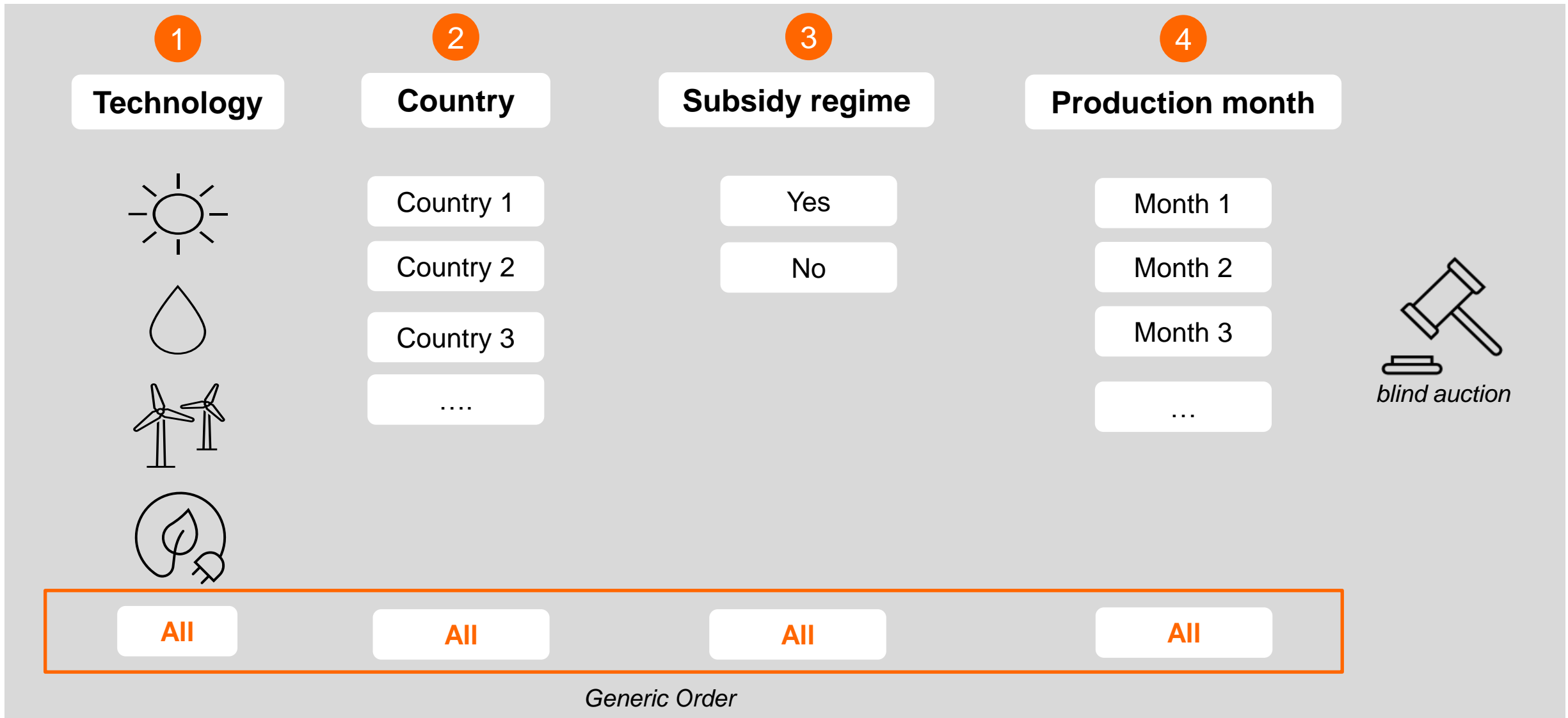


Issuing countries from which GOs are accepted

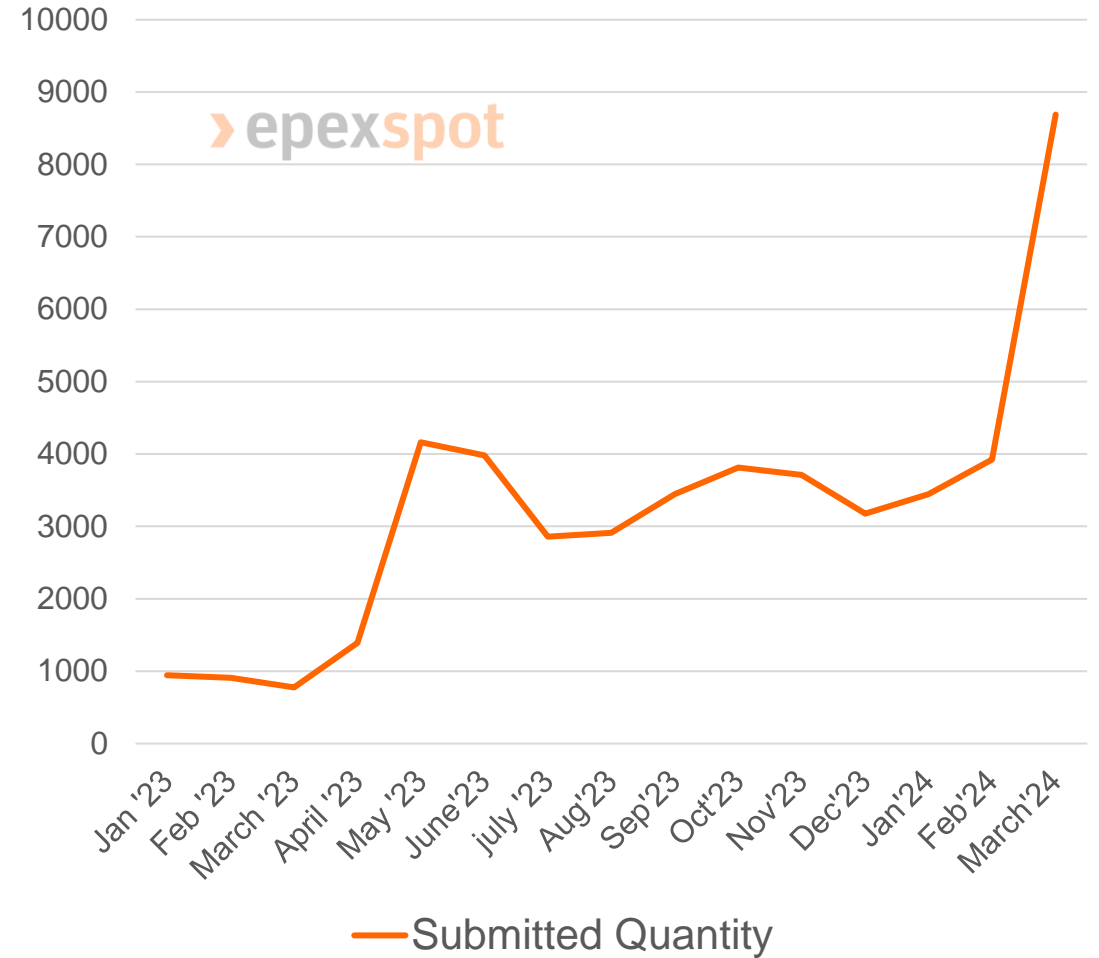
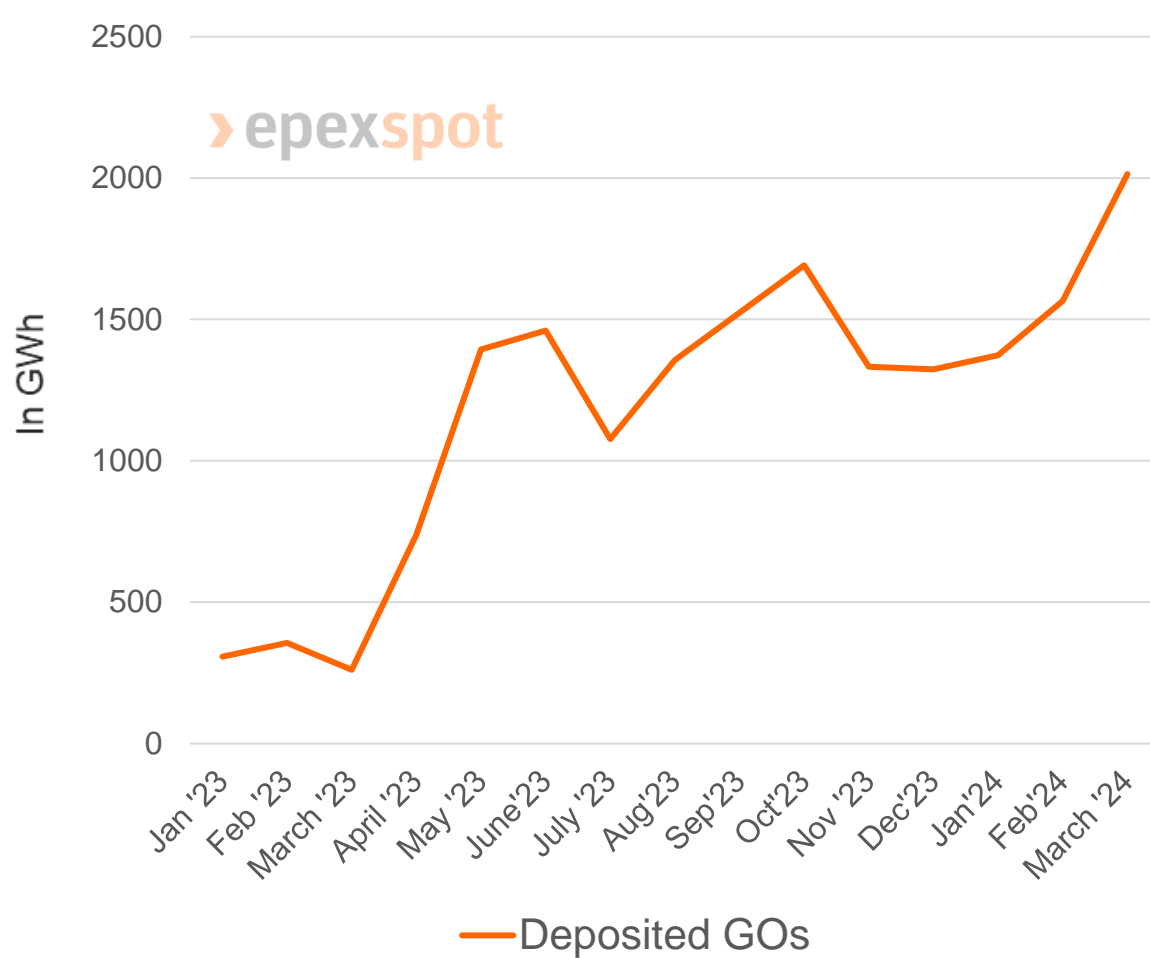
GOs from **22** countries can be traded



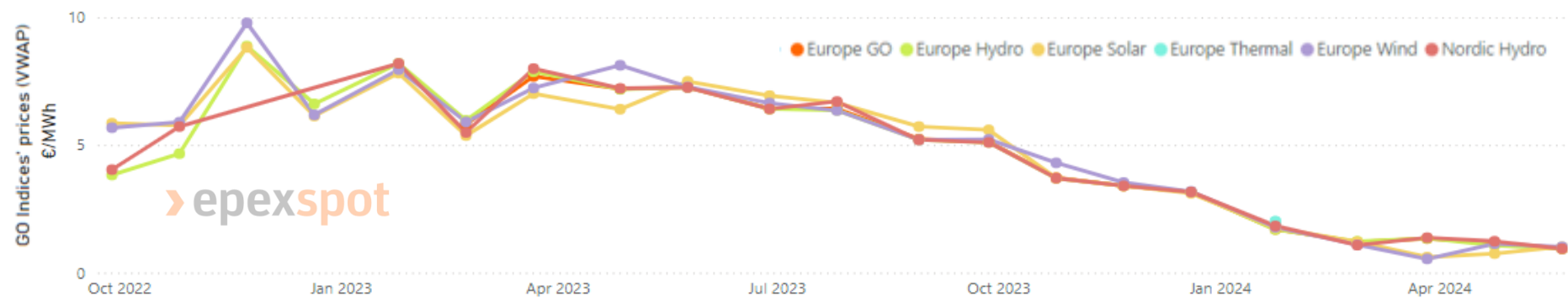
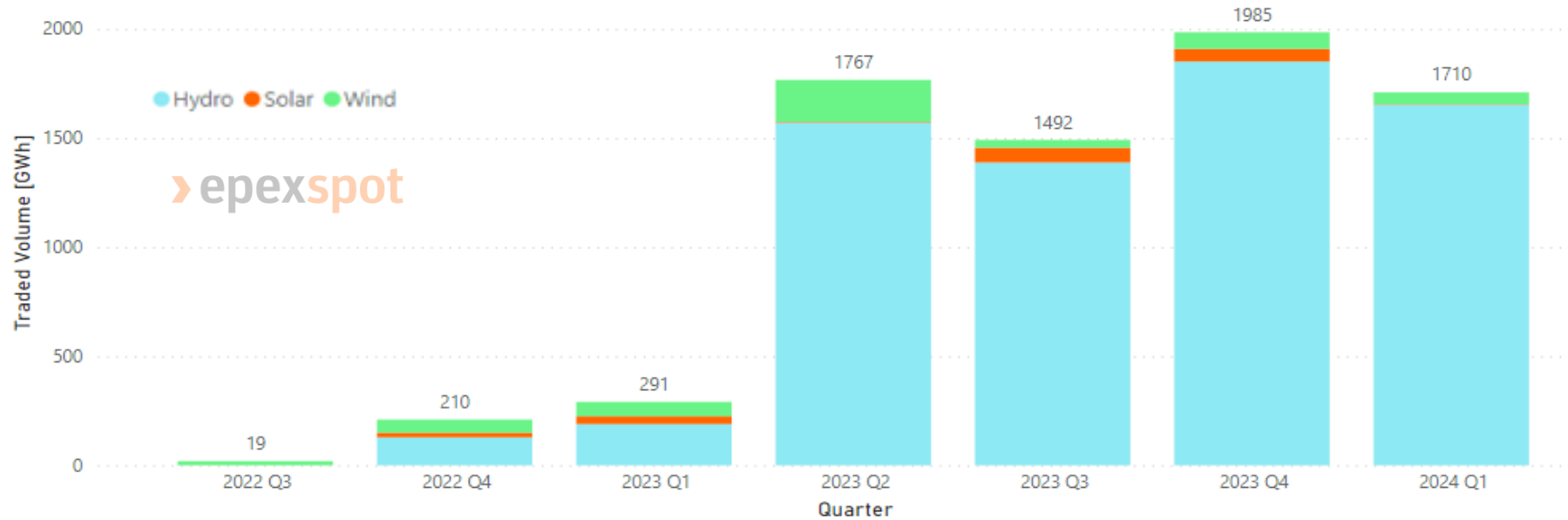
The right balance between product genericity and specificity of needs



Quantity of deposited GOs and auction liquidity is on the rise



Solid growth of GOs volumes and robust price formation as a result



GOs from 14 different countries have been sold:

Austria, Croatia, Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden

Accelerate the energy transition with > localflex

Grid planning and investment optimisation

TSO/DSO coordination

Active system management

Access to a large flexibility assets base



> epexspot



New revenue streams

Capabilities to fully automate all market activities

Open to demand and generation resources, big and small

Low barriers to entry



High reliability

Transparent pricing

Fair and orderly market

State-of-the-art trading platform

2024 launch in GB with



SCAN TO LEARN MORE



Renewable Quanto Indices

Wind & Solar Power available



- › For **solar and wind power producers, asset holders, investors & PPA counterparties**
- › Reflect both **weather and spot price fluctuations** to better manage risk
- › Ensure **stability of revenues, secure the financing** and support **development of renewables in the market**

With this exclusive suite of indices, companies can address the challenge of risk management for renewable production.



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