



New Challenges in Financial and
Energy Markets: Math, Data & AI

Friday, 31st of October 2025

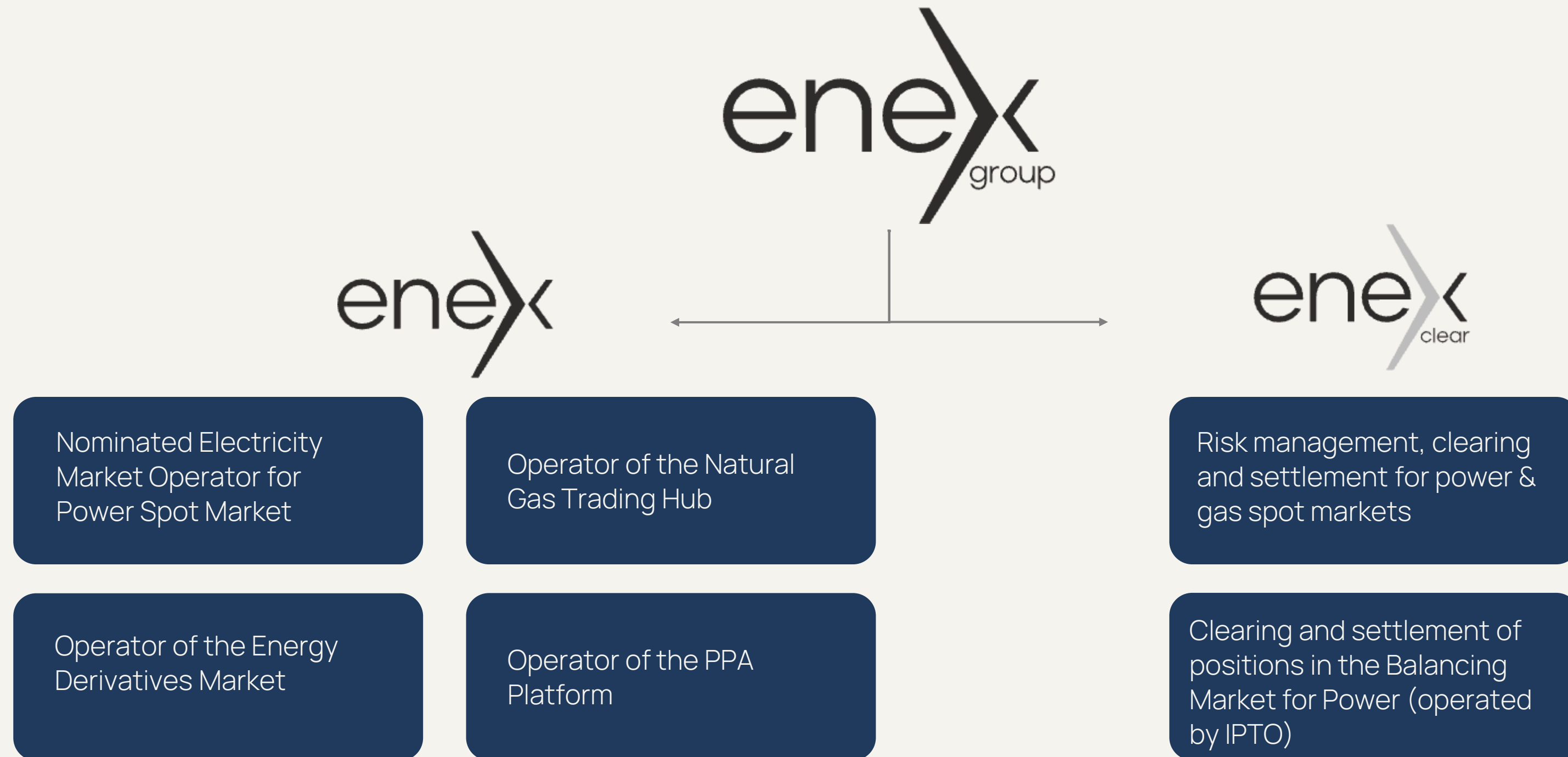
Introduction to the Hellenic Energy Exchange

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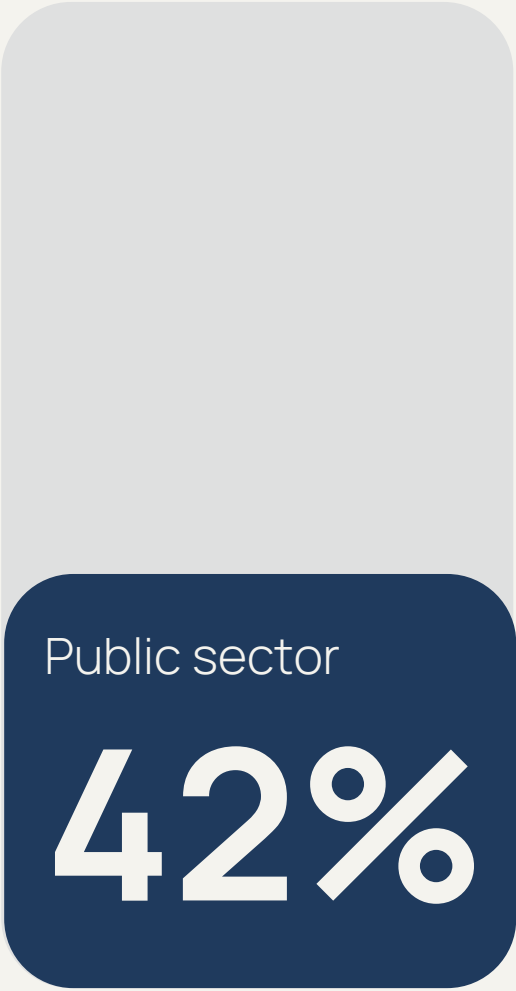


Hellenic Energy Exchange – Overview



Overview

Hellenic Energy Exchange



Operational Model

	SPOT Electricity Markets			Natural Gas Trading Platform	Energy Derivatives Market (Electricity)
Market	Day-Ahead	Intraday	Balancing	Natural Gas Trading Platform	Energy Derivatives Market
Type of Market	Physical	Physical	Physical	Physical	Cash Settlement with optional Physical Delivery
Market Operator	eneX	eneX	ipto	eneX	eneX
Clearing & Risk Management	eneX	eneX	ipto eneX	eneX	ATHEX Athens Stock Exchange
Platforms & Technical Services	ATHEX Athens Stock Exchange	ATHEX Athens Stock Exchange	ipto ATHEX Athens Stock Exchange	ATHEX Athens Stock Exchange	ATHEX Athens Stock Exchange

Electricity

Spot

- › Day-Ahead Market
- › Intraday Market

Derivatives

- › Futures

Gas

Spot

- › Daily Contracts
(D+1, D+2, D+3)
- › Intraday Market

Derivatives

- › Futures (under investigation)

Other

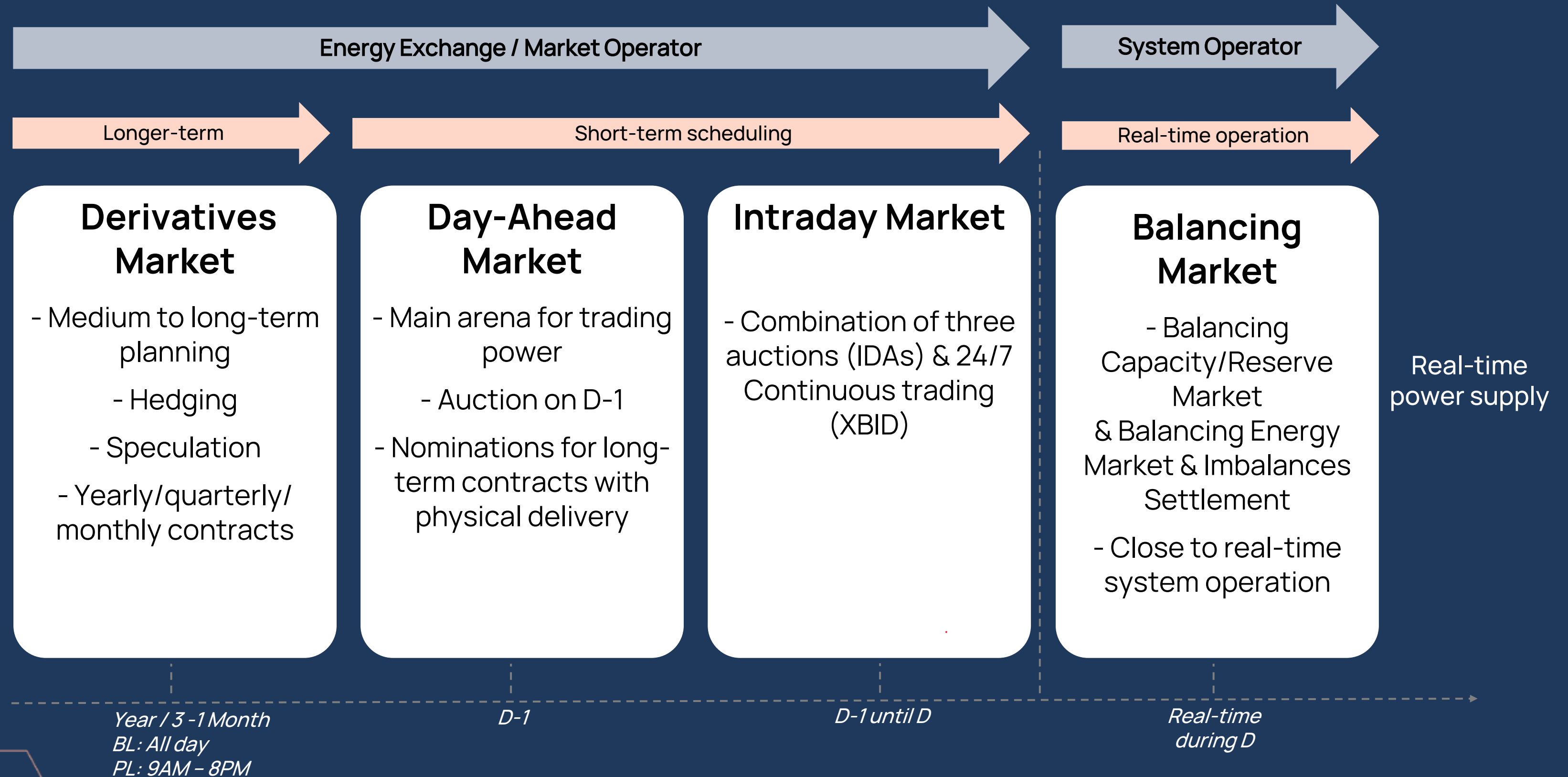
RES PPA Platform





Power Spot Market

Hellenic Energy Markets – Products



Day-ahead Market

Single Auction

15' MTUs

Asset-based
Participation

- › Single auction per delivery day with marginal pricing
- › 15' Market Time Units
- › Algorithm: EUPHEMIA (Pan-European Hybrid Electricity Market Integration Algorithm)
- › Allocation of interconnection capacities
 - Implicit with coupled borders: IT, BG
 - Explicit with noncoupled borders: AL, NMK, TR
- › Asset-based participation
- › Mandatory participation for producers

Intraday Market

3 Auctions

15' MTUs

Asset-based
Participation

- › 3 auctions per delivery day with marginal pricing
- › 15' Market Time Units
- › Algorithm: EUPHEMIA (Pan-European Hybrid Electricity Market Integration Algorithm)
- › Allocation of interconnection capacities
 - 1st phase : LIDA – no capacity allocation
 - 2nd phase : CRIDA (regional coupling) – implicit with IT
 - 3rd phase : IDA (European coupling) – implicit with IT, BG
- › Asset-based participation
- › Participation is not mandatory

Intraday Market – XBID

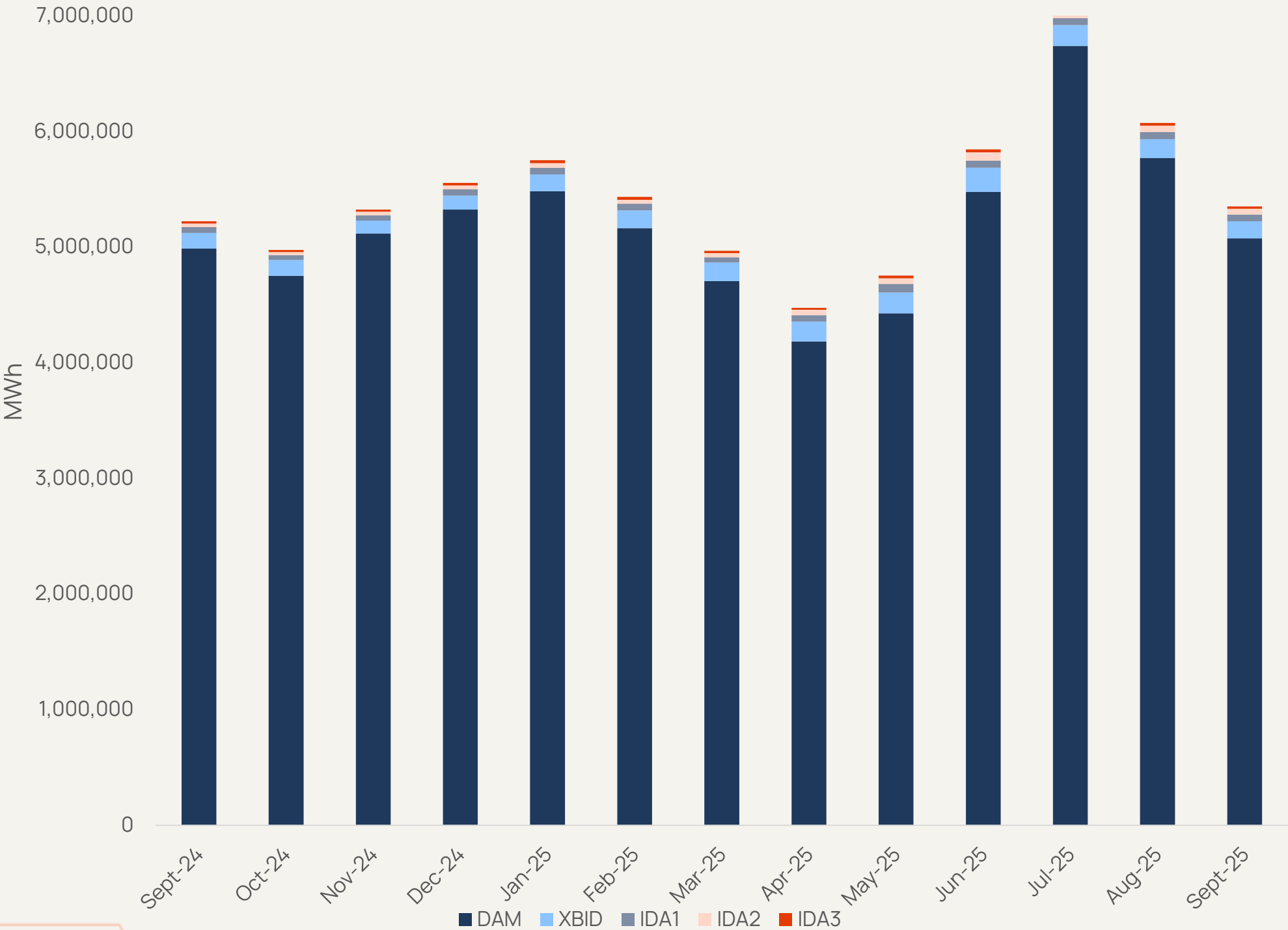
Continuous Trading

15' MTUs

Asset-based
Participation

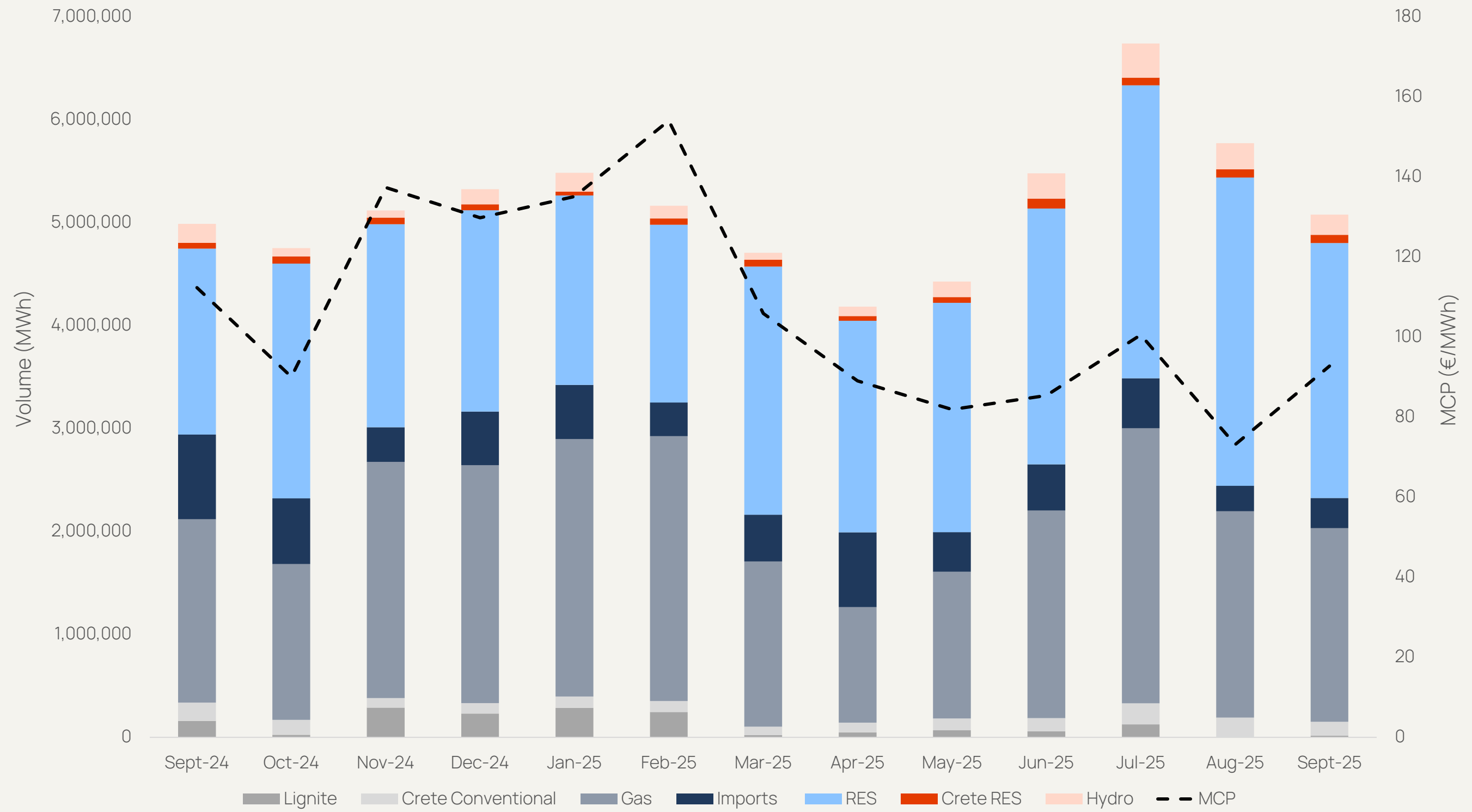
- › Continuous intraday trading
- › Algorithm: Cross-border Intraday Solution XBID
- › Products
 - 15-minute, 30-minute, 60-minute products
 - User-defined blocks
- › Allocation of IT, BG interconnection capacity via continuous trading matching algorithm
- › Asset-based participation
- › Participation is not mandatory

Traded Volumes per Market



Market	Trades (MWh)	% GT
DAM	67,239,335	95.0%
XBID	2,011,015	2.8%
IDA1	726,761	1.0%
IDA2	572,812	0.8%
IDA3	288,841	0.4%
Total	70,838,763	100%

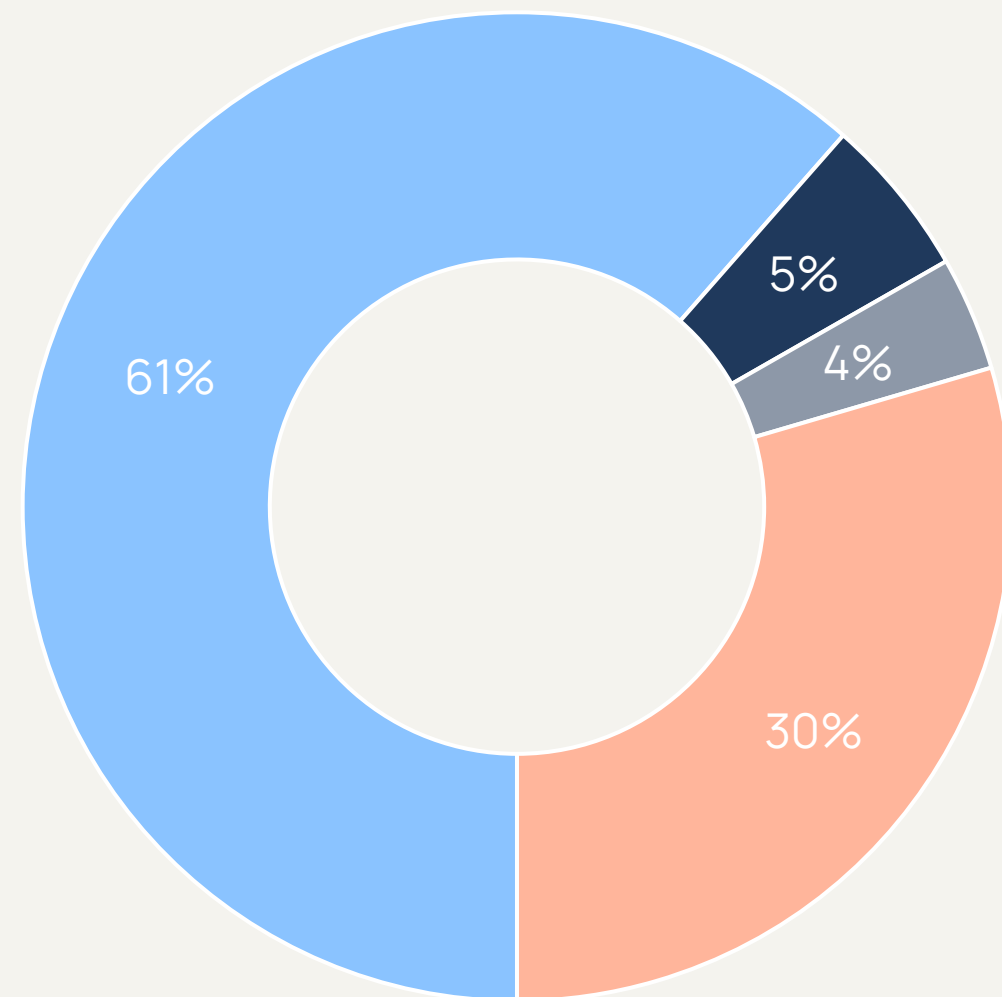
Day-Ahead Market: Energy Mix & Market Clearing Price





Natural Gas Trading Hub

Trading Products & Methods



■ D+1 ■ D+2 ■ D+3 ■ Within-day

Trading Model

Continuous
Trading

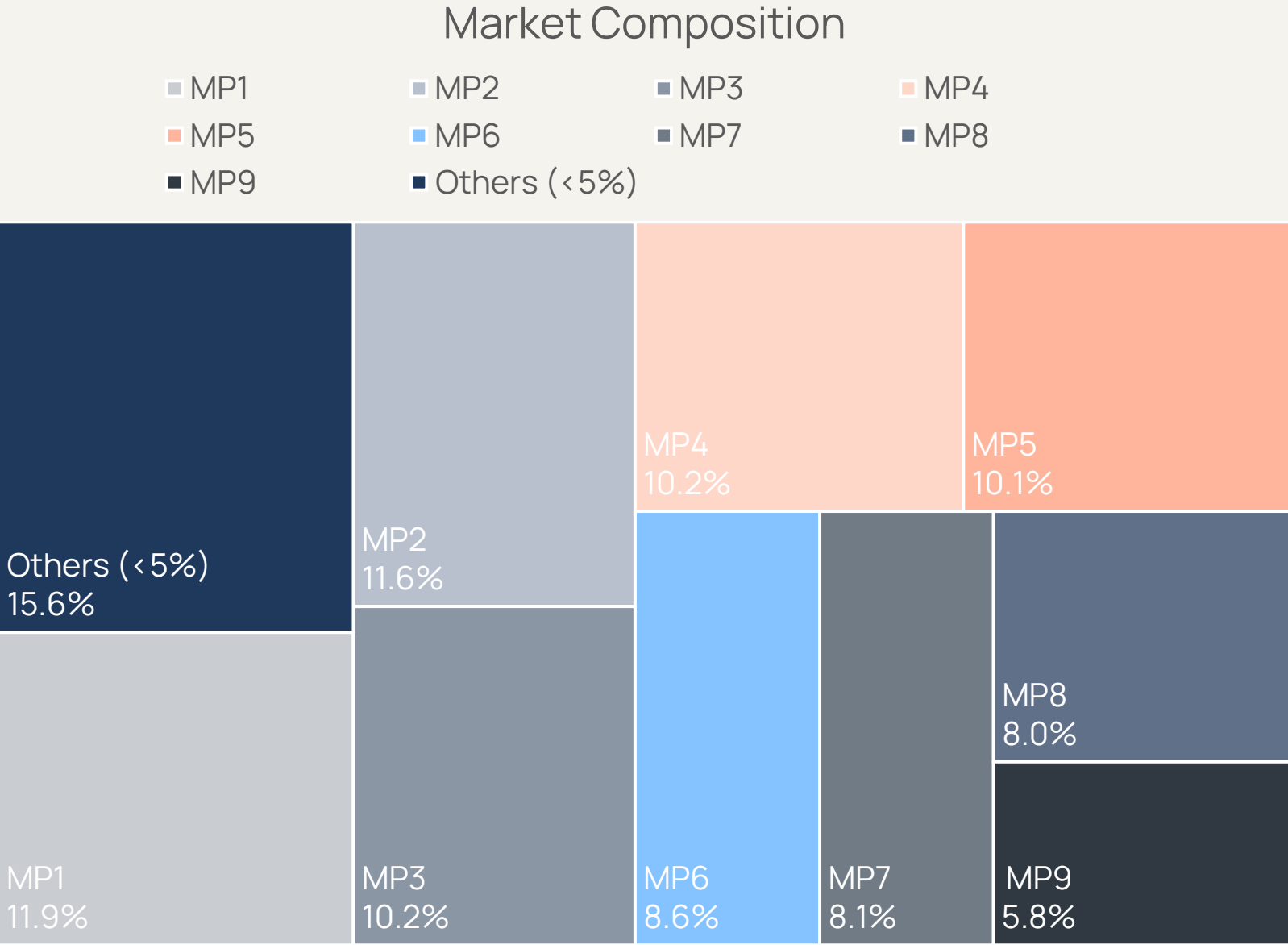
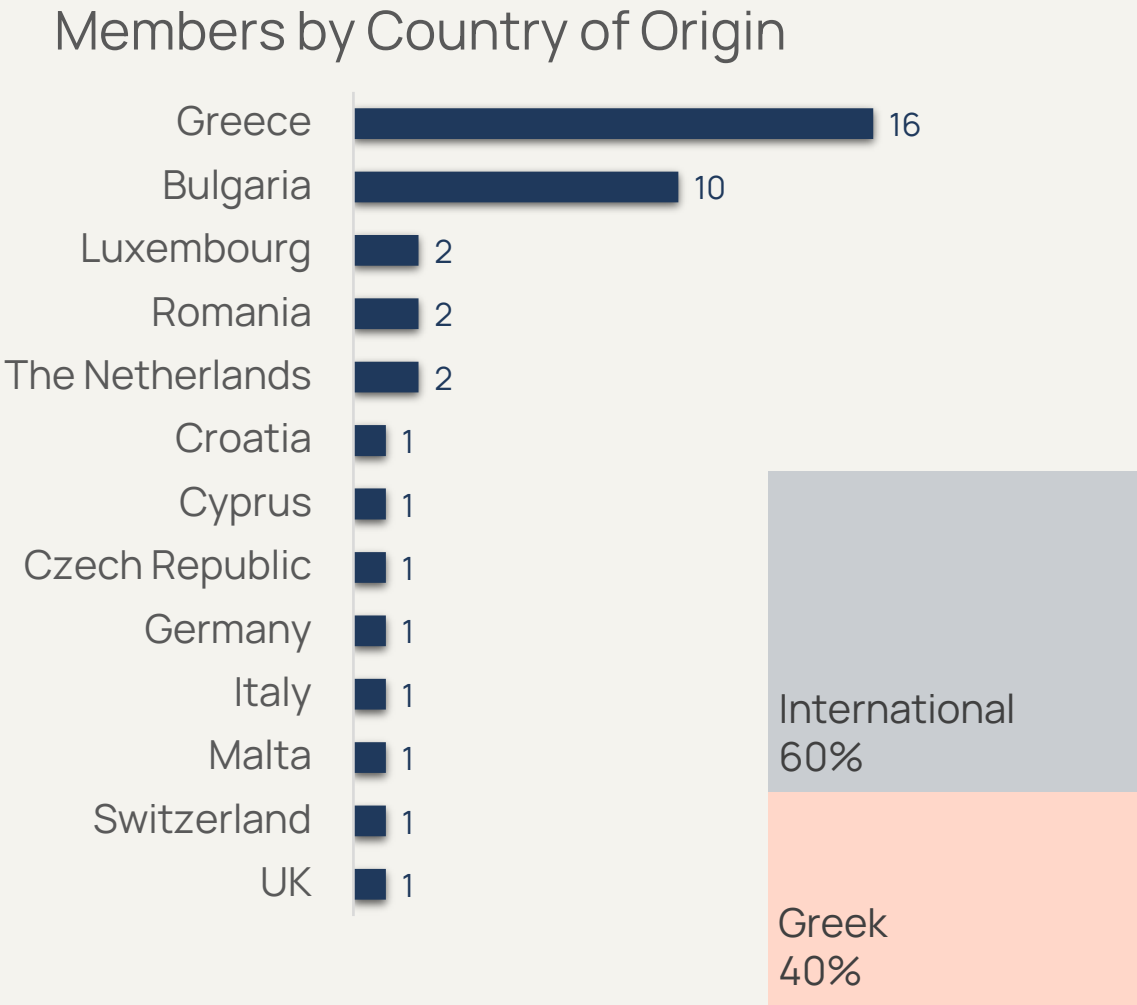
98%

Auctions

2%

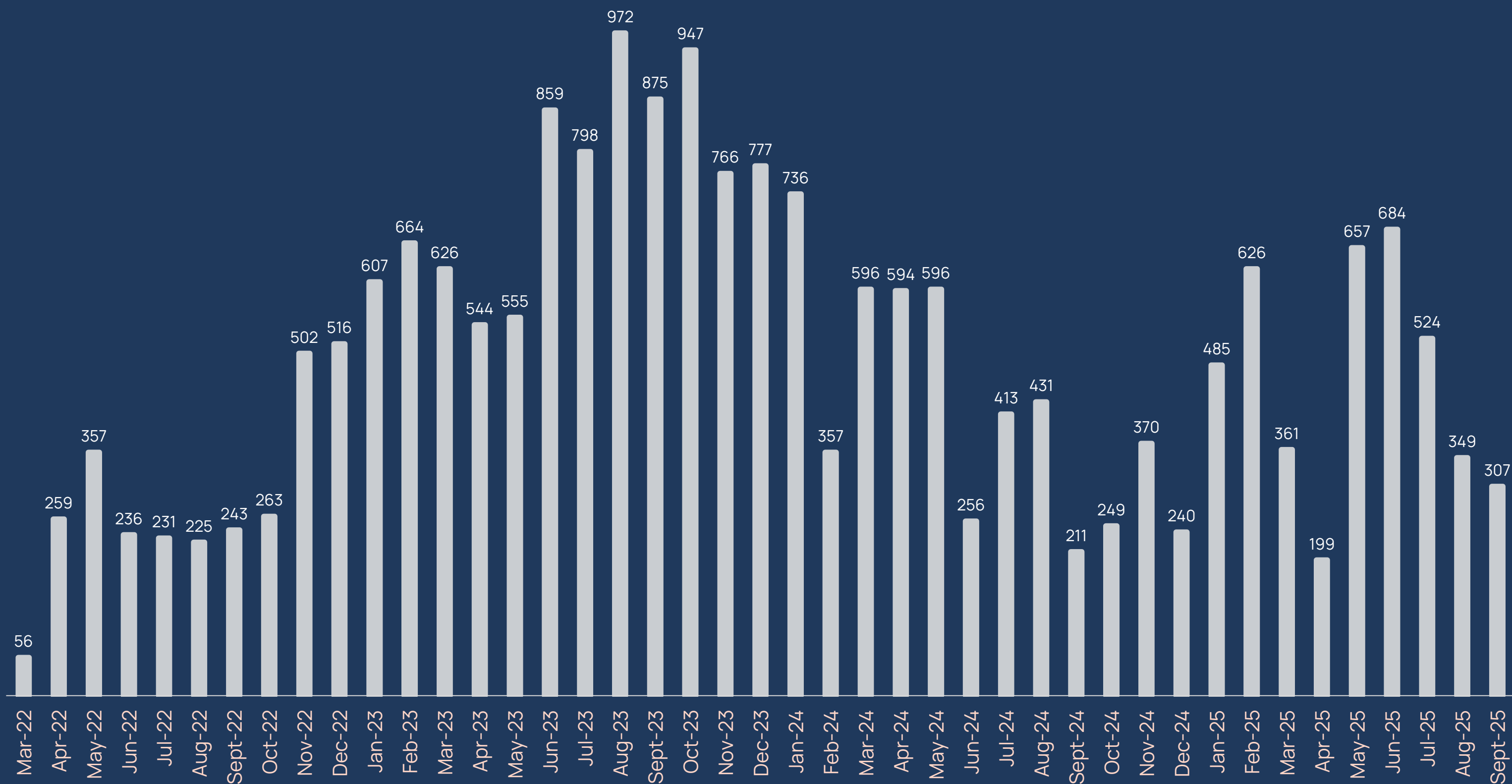
- ✓ **Trade registration** for the clearing and settlement of pre-agreed trades between participants is also supported by EnExClear

Members Evolution & Activity Overview

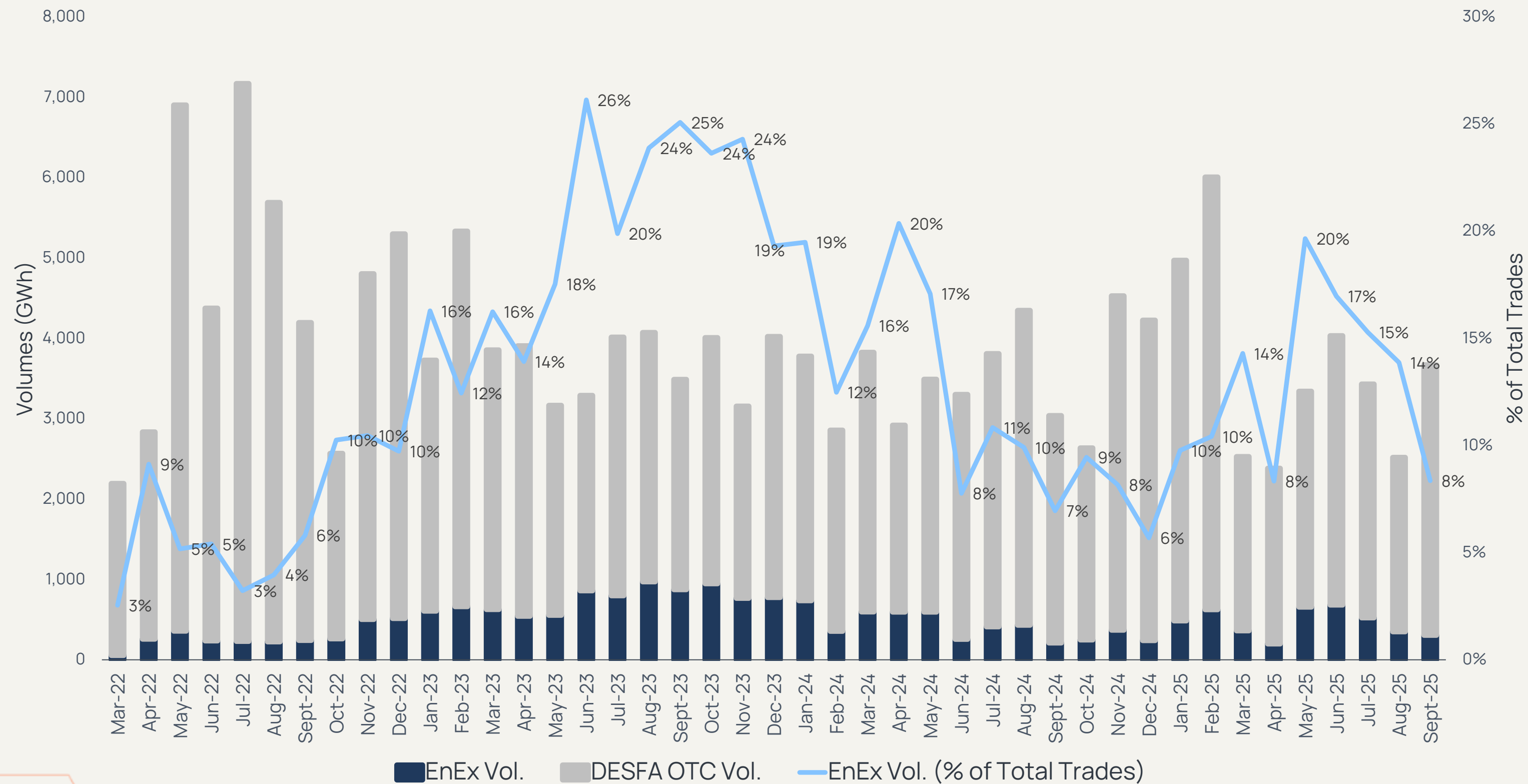


- Trading activity is distributed across several participants
- 9 participants held a market share higher than 5%
- 20 participants accounted for 15.6% of traded volumes

Natural Gas Trading Hub: Traded Volumes in GWh



Natural Gas Trading Hub: Platform Share in Greek VTP Volumes



Types of challenges for Math, Finance and Data Science Majors

Long and Mid-Term
Planning

Short-term market
participation

Close to real-time

- › Investment evaluation of generating, energy storage, and network assets (LTP)
- › Fuel procurement (L&MTP)
- › Hedging against price fluctuation with energy derivative products (MTP)
- › Asset optimization in the spot power market (STMP)
- › Opportunity exploration between cascading markets (STMP & CTRT)



THANK YOU!

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