

Hellenic Energy Exchange

Wednesday, October 20th 2021 | Prague | 2021-ETCSEE
“Markets, status and steps forward”

Dr. Zoumas Christoforos
Director, Markets' Operation
HEnEx S.A.

EnEx Group: Stakeholders

HEnEx S.A.: established in June 2018 via a spin-off of the electricity market branch of the former LAGIE S.A.

HEnEx

Hellenic Energy Exchange S.A.

Public



42%

Private



ATHEX
Athens Stock Exchange



European Bank
for Reconstruction and Development



58%

EnEx

Energy Exchange Group

HEnEx

Hellenic Energy Exchange S.A.

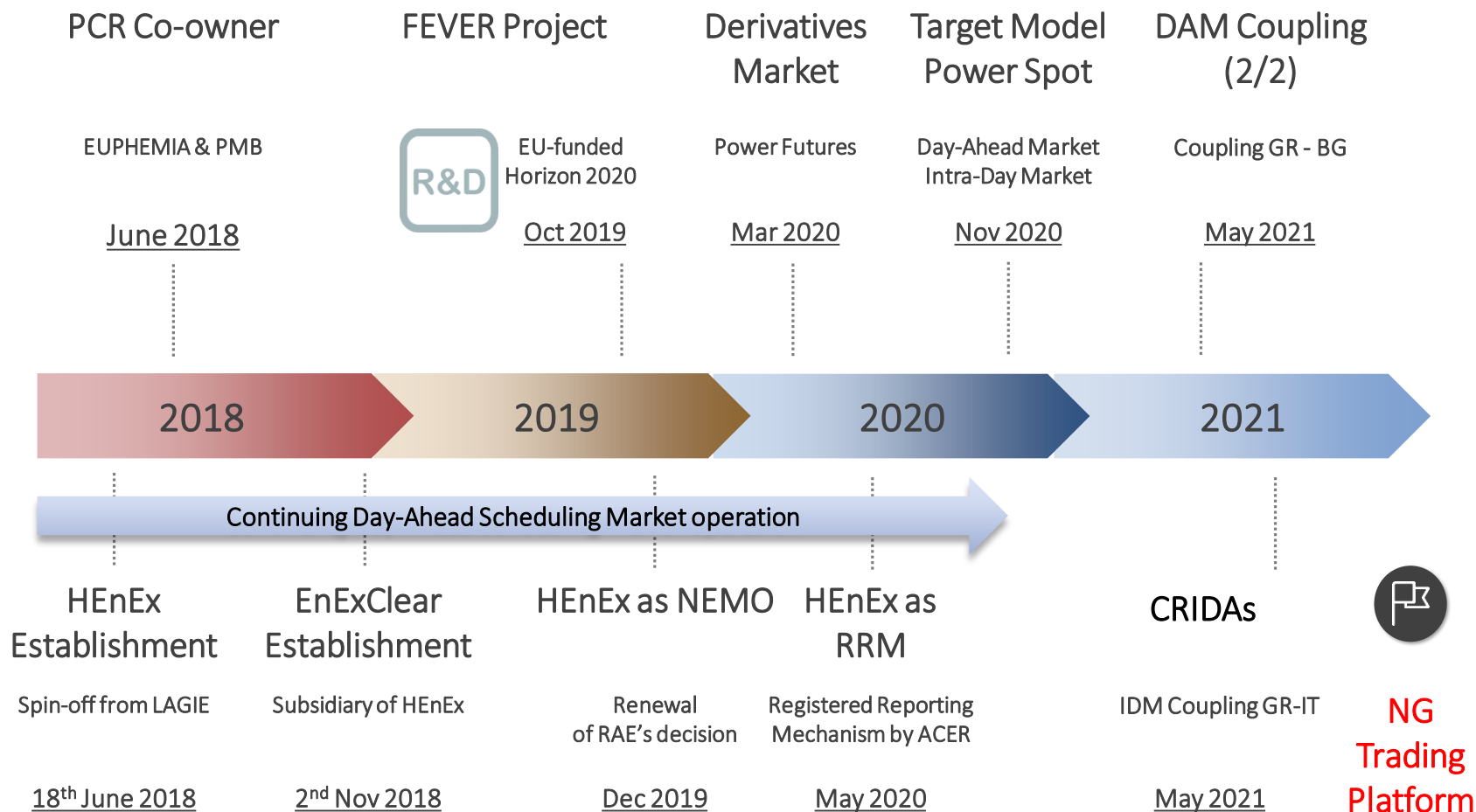
- ✓ Spot-Trading &
- ✓ Derivatives-Trading

EnEx

EnEx Clearing House S.A.

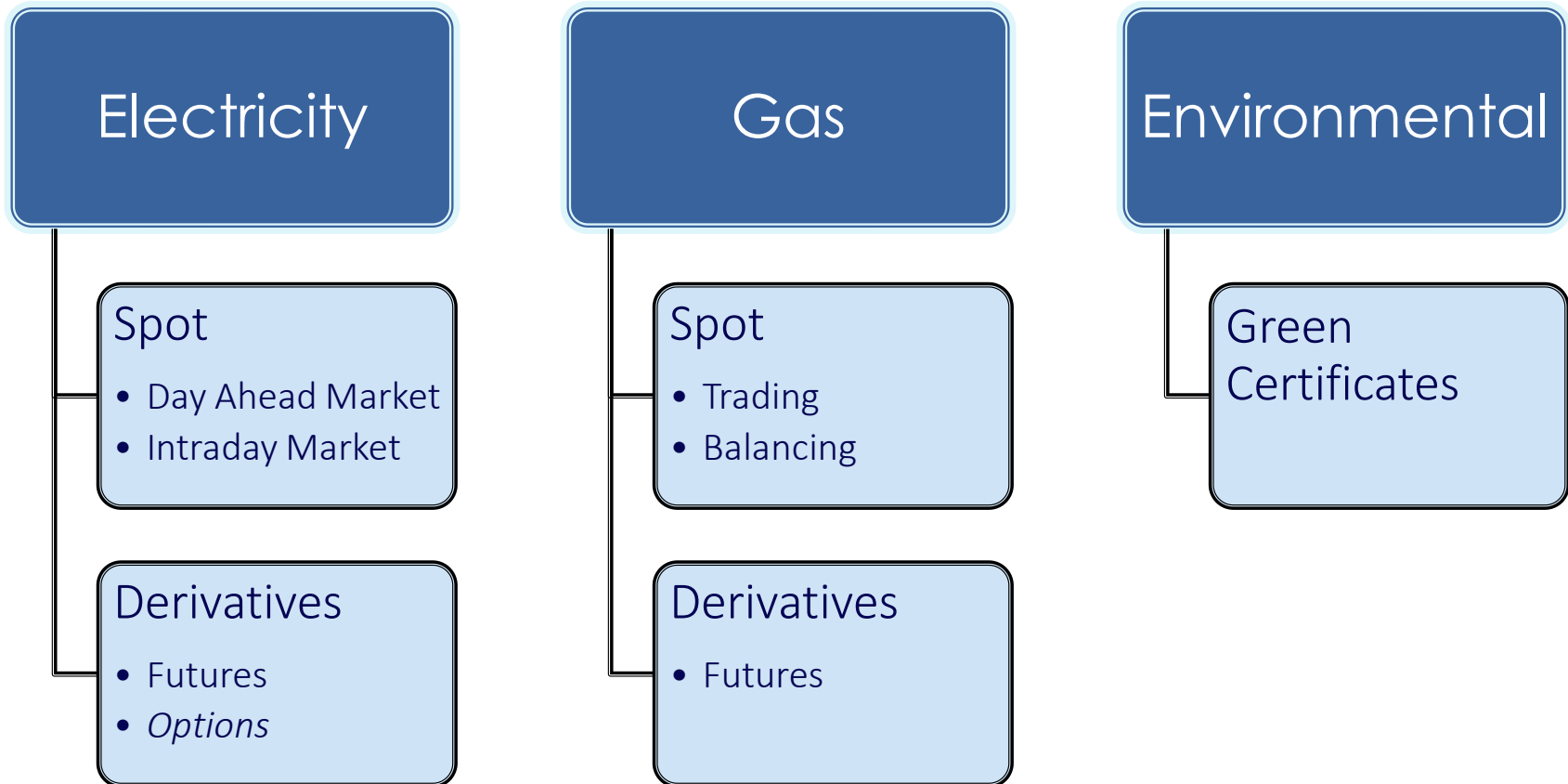
- ✓ Spot-Clearing
- ✓ Owned by HEnEx

3 years of EnExGroup




Trading Energy Products


Overview of HEnEx Markets



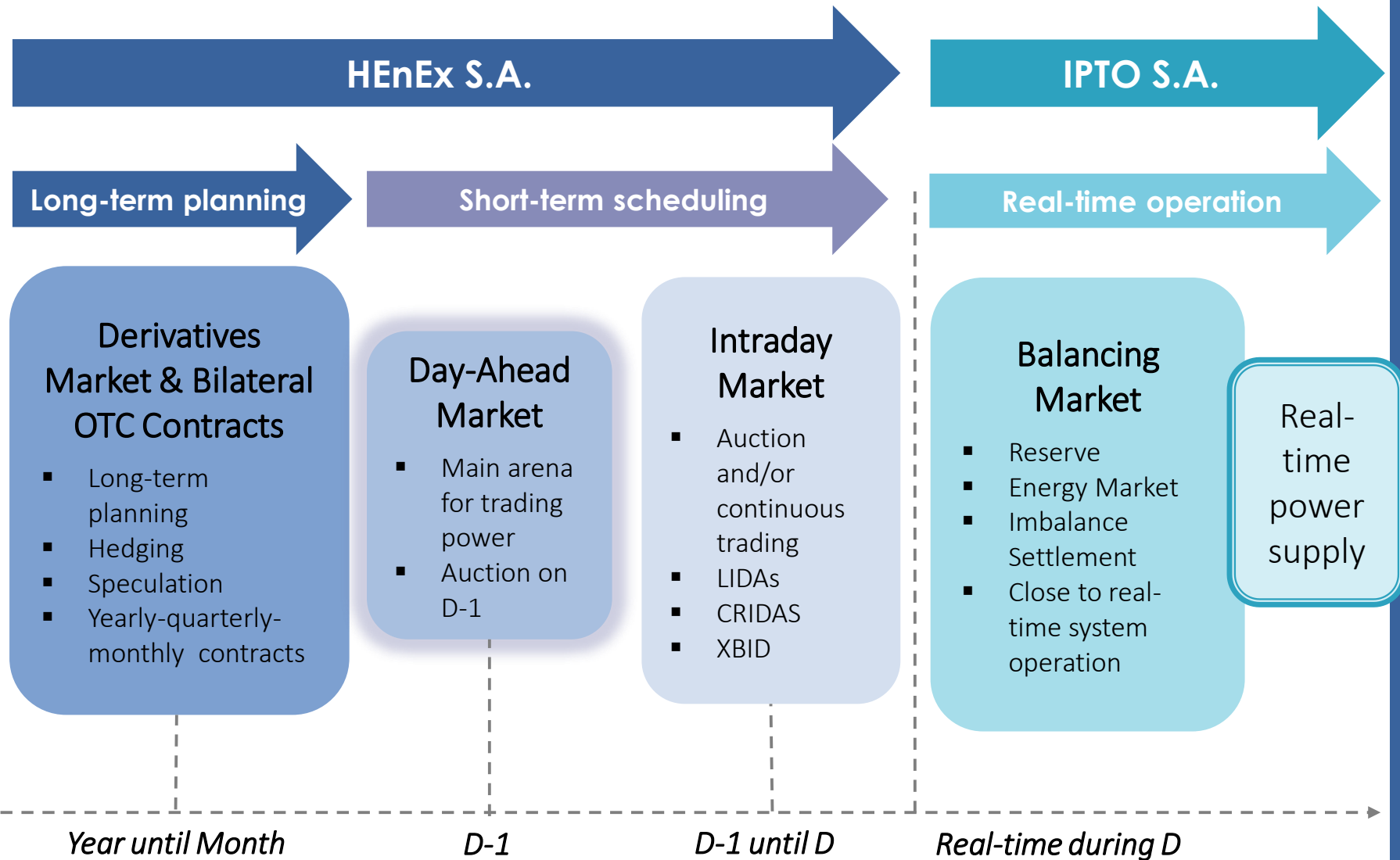
Derivatives Market: Institutional Roles

	Derivatives Market Financial derivatives contract / Optional physical delivery
Market Operator	HEnEx
Central Counterparty (CCP) Clearing and Risk Management	ATHEX Clear
Technical and Operational Support	ATHEXGroup
Supervisory Authorities	 Επιτροπή Κεφαλαιαγοράς Hellenic Capital Market Commission  PAE RAE ΡΥΘΜΙΣΤΙΚΗ ΑΡΧΗ ΕΝΕΡΓΕΙΑΣ REGULATORY AUTHORITY FOR ENERGY

Spot Power Market: Institutional Roles

	Day-Ahead & Intraday Markets Physical delivery of Electricity Contracts
NEMO	HEnEx
Central Counterparty (CCP) Clearing and Risk Management	EnExCLEAR
Technical and Operational Support	ATHEXGroup
Supervisory Authorities	

The new Electricity Markets in Greece



HEnEx Membership Model

Entities eligible to apply for Trading Membership

Financial entities

Credit Institutions

Investment firms

Non financial entities

Power Producers

Power Suppliers

Energy Trading companies

RES aggregators

Self-Supplying Customers

Licensing from the respective Authority



According to the current framework eligible entities should have been duly **licensed**

- to execute orders on behalf of clients or trade for own account and also
- to trade derivatives commodities as defined in Law 4514/2018 (MIFID II)



Membership status granted by HEnEx

The **membership** granted for those entities who meets the criteria set by HEnEx in the following areas:

...**organizational and financial liability**..

...**professional reliability and qualification of its traders**...

...**the suitable technical infrastructure**...

...**recognition as Clearing Member or arrangement with a General Clearing Member**...

List of Derivatives Trading Members

EUROBANK EQUITIES A.E.Π.Ε.Υ	
EUROXX SECURITIES S.A.	
ALPHA FINANCE A.E.Π.Ε.Υ	
ΔΕΗ Α.Ε.	
NATIONAL BANK OF GREECE S.A.	
NBG SECURITIES	
OPTIMA BANK S.A.	
MYTILINEOS HOLDINGS S.A.	
PIRAEUS SECURITIES S.A.	
WATT AND VOLT S.A.	
ALPIQ ENERGY SE	
AXPO BULGARIA EAD	

ELPEDISON S.A.	
EUNICE TRADING S.A.	
VOLTERRA S.A.	
ΗΡΩΝ ΘΕΡΜΟΗΛΕΚΤΡΙΚΗ Α.Ε.	
ΑΕΡΙΟ ΘΕΣΣΑΛΟΝΙΚΗΣ-ΘΕΣΣΑΛΙΑΣ Α.Ε.	
SOUSAKI POWER S.A.	
GEN-I ATHENS ΜΕΠΕ	
INACCESS NETWORKS S.A.	
ELEKTRICNI FINANCNI TIM	
HOLDING SLOVENSKE ELEKTRARNE d.o.o	
NRG SUPPLY AND TRADING S.A.	
VOLTON	
BI.ENERP A.E.	

Overview of Current Derivatives Market

Market Type		Organized Market under <i>MiFID II</i> with an <i>EMIR</i> -compliant CCP
Product Type		Power Futures
Load Profile		Baseload + Peakload
Products	Monthly <i>Base & Peak</i>	current + next 6 months (14 in total)
	Quarterly <i>Base & Peak</i>	next 4 full quarters (8 in total)
	Yearly <i>Base & Peak</i>	next full year (2 in total)
Underlying		Greek Day-ahead Market (operated by HEnEx)
Market Maker		YES
Order Books		Exchange Trading + Trade Registration
Physical Settlement		Optional

Spot Market Participants & Clearing Members

▶ Trading Participants at HEnEx: 61 Legal Entities

▶ Clearing Members at EnExClear: 5 GCM / 3 DCM

ALPIQ ENERGY HELLAS A.E.
ALPIQ ENERGY SE
AYEN ENERGIJA d.o.o
AXPO BULGARIA EAD
AXPO SOLUTIONS AG
CEZ A.S.
DANSKE COMMODITIES A/S
Dufferco Energia S.p.A.
DUFERCO HELLAS A.E.
ELECTRADE S.P.A.
ELEKTRICNI FINANCNI TIM d.o.o
ELPEDISON A.E.
ENEL GLOBAL TRADING SpA
Energi Danmark A/S
ENSCO Energy Services Company AG
EUNICE AGGREGATION MAE
EUNICE TRADING AE
EVN TRADING SOUTH EAST EUROPE
FORENA ENERGY A.E
GEN - I ATHENS M.E.Π.E.(SM LLC)
GREEK ENVIRONMENTAL &
GREEN ENERGY AGGREGATOR SERVICES
ENERGY NETWORK A.E.
HSE d.o.o.

INTERENERGO d.o.o.
INACCESS NETWORKS S.A.
LE Trading S.A.
NRG SUPPLY AND TRADING S.A.
OPTIMUS ENERGY SOCIETE ANONYME
PROTERGIA ENERGY S.A.
PROTERGIA ΘΕΡΜΟΗΛΕΚΤΡΙΚΗ ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ
RENOPTIPOWER S.A.
SOLAR ENERGY
STATKRAFT MARKETS GMBH
STRATEGIC ENERGY TRADING ΕΝΕΡΓΕΙΑΚΗ ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ
Vitol Gas and Power B.V.
VOLTERRA S.A.
VOLTON ΕΛΛΗΝΙΚΗ ΕΝΕΡΓΕΙΑΚΗ ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ
WATT AND VOLT A.E.
ZENITH GAS & LIGHT
ΑΝΕΞΑΡΤΗΤΟΣ ΔΙΑΧΕΙΡΙΣΤΗΣ ΜΕΤΑΦΟΡΑΣ
ΗΛΕΚΤΡΙΚΗΣ ΕΝΕΡΓΕΙΑΣ (ΑΔΜΗΕ)
BI.ENER A.E. ΕΝΕΡΓΕΙΑΚΕΣ ΕΠΙΧΕΙΡΗΣΕΙΣ ΑΝΩΝΥΜΗ ΕΤΑΙΡΙΑ
ΒΙΟΛΑΡ Α.Ε
ΒΟΩΤΗΣ Α.Ε.
ΔΗΜΟΣΙΑ ΕΠΙΧΕΙΡΗΣΗ ΗΛΕΚΤΡΙΣΜΟΥ Α.Ε.
ΔΙΑΧΕΙΡΙΣΤΗΣ ΑΠΕ & ΕΓΓΥΗΣΕΩΝ ΠΡΟΕΛΕΥΣΗΣ Α.Ε.
ΕΛΙΝ ΒΕΡΝΤ ΑΝΩΝΥΜΗ ΕΤΑΙΡΙΑ

ΕΛΙΝΟΙΛ ΕΛΛΗΝΙΚΗ ΕΤΑΙΡΕΙΑ ΠΕΤΡΕΛΑΙΩΝ
ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ
ΕΛΛΗΝΙΚΑ ΤΑΧΥΔΡΟΜΕΙΑ Α.Ε.
ΕΤΑΙΡΕΙΑ ΠΑΡΟΧΗΣ ΑΕΡΙΟΥ ΑΤΤΙΚΗΣ –ΕΛΛΗΝΙΚΗ
ΜΟΝΟΠΡΟΣΩΠΗ ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ ΕΝΕΡΓΕΙΑΣ
ΗΛΕΚΤΡΟΠΑΡΑΓΩΓΗ ΣΟΥΣΑΚΙΟΥ ΜΟΝΟΠΡΟΣΩΠΗ
ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ ΠΑΡΑΓΩΓΗΣ ΚΑΙ ΕΜΠΟΡΙΑΣ
ΗΛΕΚΤΡΙΚΗΣ ΕΝΕΡΓΕΙΑΣ
ΗΡΩΝ II ΒΟΙΩΤΙΑΣ Α.Ε
ΗΡΩΝ ΘΕΡΜΟΗΛΕΚΤΡΙΚΗ Α.Ε.
ΚΕΝ ΠΑΡΑΓΩΓΗ ΚΑΙ ΕΜΠΟΡΙΑ ΕΝΕΡΓΕΙΑΚΩΝ
ΠΡΟΪΟΝΤΩΝ Α.Ε.
ΚΟΡΙΝΘΟΣ POWER Α.Ε.
ΚΩΝΣΤΑΝΤΙΝΟΣ Β. ΜΑΡΚΟΥ Α.Β.Ε.Ε.
ΛΙΓΝΙΤΙΚΗ ΜΕΓΑΛΟΠΟΛΗΣ Α.Ε.
ΛΙΓΝΙΤΙΚΗ ΜΕΛΙΤΗΣ ΜΟΝΟΠΡΟΣΩΠΗ Α.Ε.
ΜΟΤΟΡ ΟΙΛ (ΕΛΛΑΣ) ΔΙΥΛΙΣΤΗΡΙΑ ΚΟΡΙΝΘΟΥ Α.Ε.
ΜΥΤΙΛΗΝΑΙΟΣ ΑΝΩΝΥΜΟΣ ΕΤΑΙΡΕΙΑ - ΟΜΙΛΟΣ
ΕΠΙΧΕΙΡΗΣΕΩΝ
ΟΤΕ ΑΚΙΝΗΤΑ ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ
ΤΕΡΝΑ ΕΝΕΡΓΕΙΑΚΗ ΑΝΩΝΥΜΗ ΒΙΟΜΗΧΑΝΙΚΗ
ΕΜΠΟΡΙΚΗ ΤΕΧΝΙΚΗ ΕΤΑΙΡΕΙΑ

Day-Ahead Market Model


- ▶ **Semi-compulsory Market**
 - Compulsory for producers → Obligation to submit orders to cover available capacity
- ▶ **Bidding on a physical asset basis**
 - per Unit/per Bidding-Zone/per Interconnection for Producers and Traders
- ▶ **Portfolio bidding**
 - for RES Aggregators, RES producers and Suppliers
- ▶ **Products:** Day-ahead hourly energy contracts
- ▶ **Orders:** compatible with PCR standards
- ▶ **Matching Method:** PCR Auction by EUPHEMIA (Isolated or Coupled mode)
- ▶ **Exchange-based Futures and OTC Contracts**
 - physical delivery in DAM via Nomination to HEnEx and Priority Price Taking Orders
- ▶ **Trading & Clearing Price Limits**
 - Harmonized EU, -500 / 3000 €/MWh

Intra-Day Market Model


- ▶ **Implementation in two (2) phases:**
 - 1st Phase: Local Intraday Auctions (LIDAs)
 - 2nd Phase: Complementary Regional Auctions (CRIDAs)
Continuous Trading (XBID)
- ▶ **Optional Participation / Bidding on a physical asset basis**
 - per Unit/per Bidding-Zone/per Interconnection for Producers and Traders
- ▶ **Portfolio bidding for RES Aggregators & RES Producers**
 - Technology neutral market participation: Dispatchable / Non-Dispatchable
- ▶ **Products:** Day-ahead hourly energy contracts, half-hourly contracts (XBID)
- ▶ **Orders:** compatible with PCR (LIDAs & CRIDAS) and XBID
- ▶ **Matching Method:** PCR Auction EUPHEMIA / XBID Continuous Trading
- ▶ **Trading & Clearing Price Technical Limits:**
 - Harmonized EU
 - LIDAs: -500/3000 €/MWh , CRIDAS/XBID: -9999/9999 €/MWh

Spot Power Markets: Operational by 11/2020


▶ DAM & LIDAs isolated:

- live as of 01.11.2020 


▶ DAM Coupling at GR-IT border:

- live as of 15.12.2020 

▶ DAM Coupling at GR-BG border:

- live as of 12.05.2021 

▶ CRIDAs Coupling at GR-IT border:

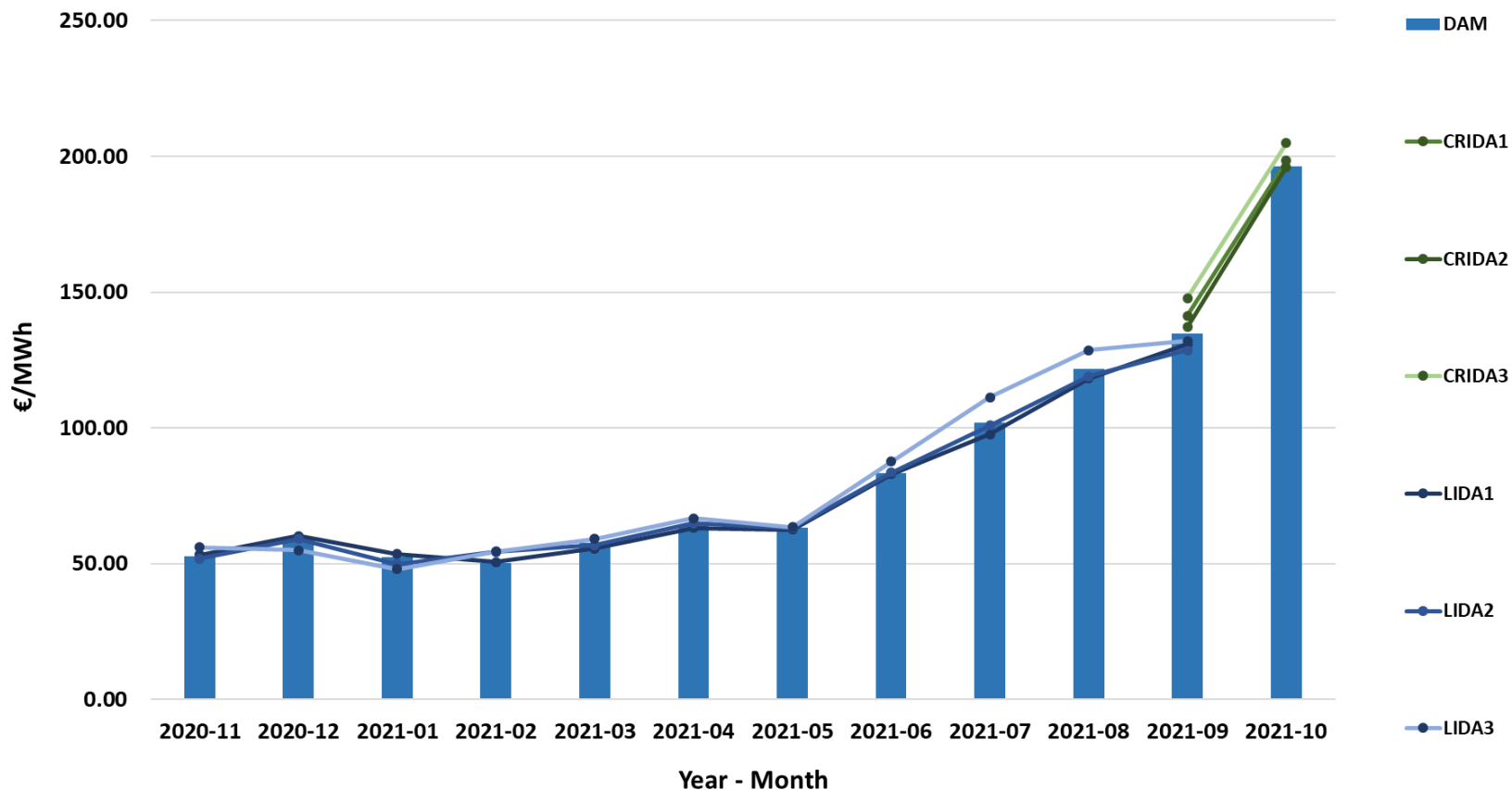
- live as of 22.09.2021 



- ▶ **XBID at GR-IT / GR-BG borders**
go-live within 2022

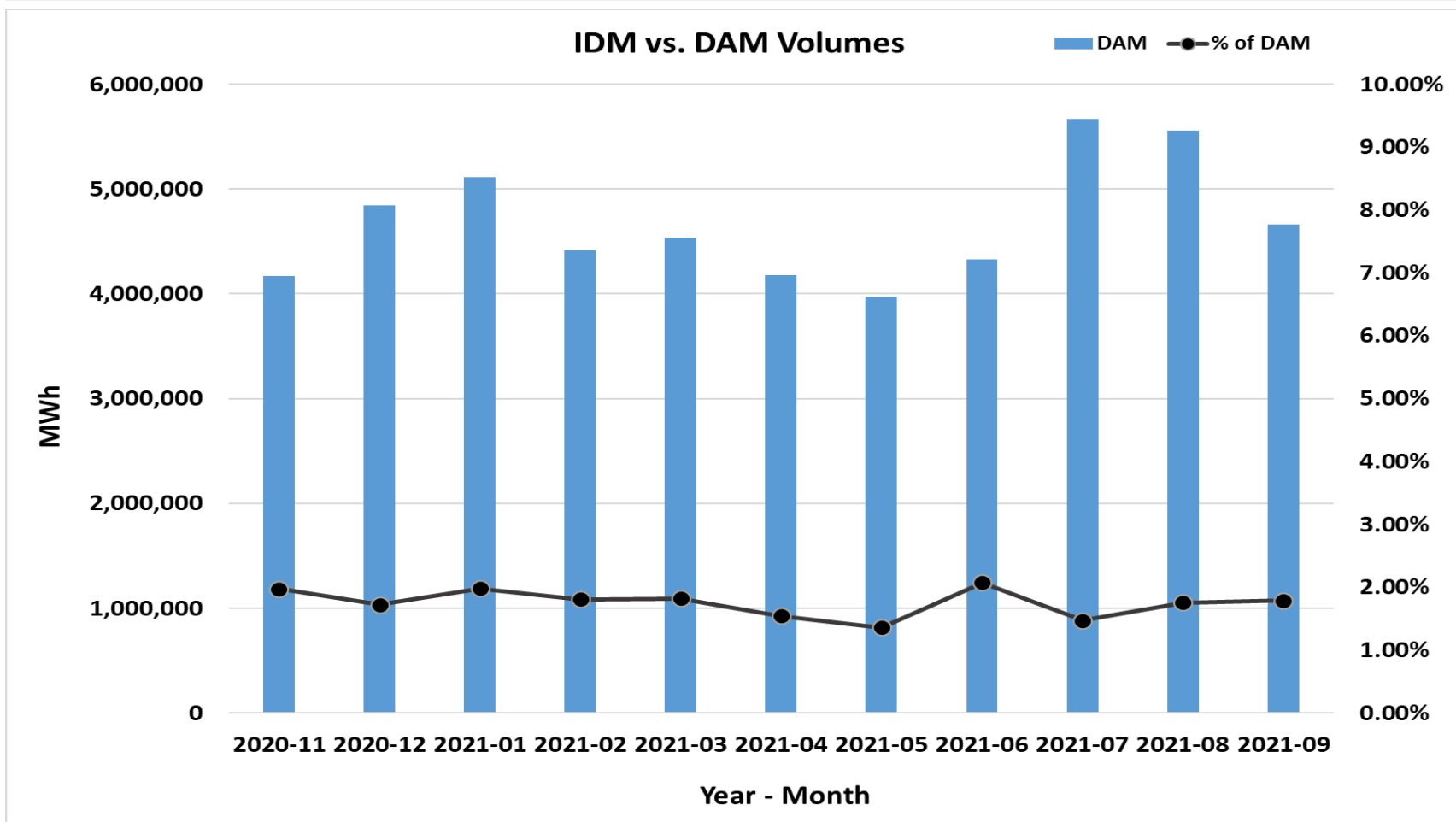
DAM & IDM Prices

DAM & IDM Clearing Prices / Monthly Averages



- ▶ Data @ <https://www.enexgroup.gr/web/guest/markets-publications-el-day-ahead-market>
- ▶ Reports @ <https://www.enexgroup.gr/web/guest/markets-reports>

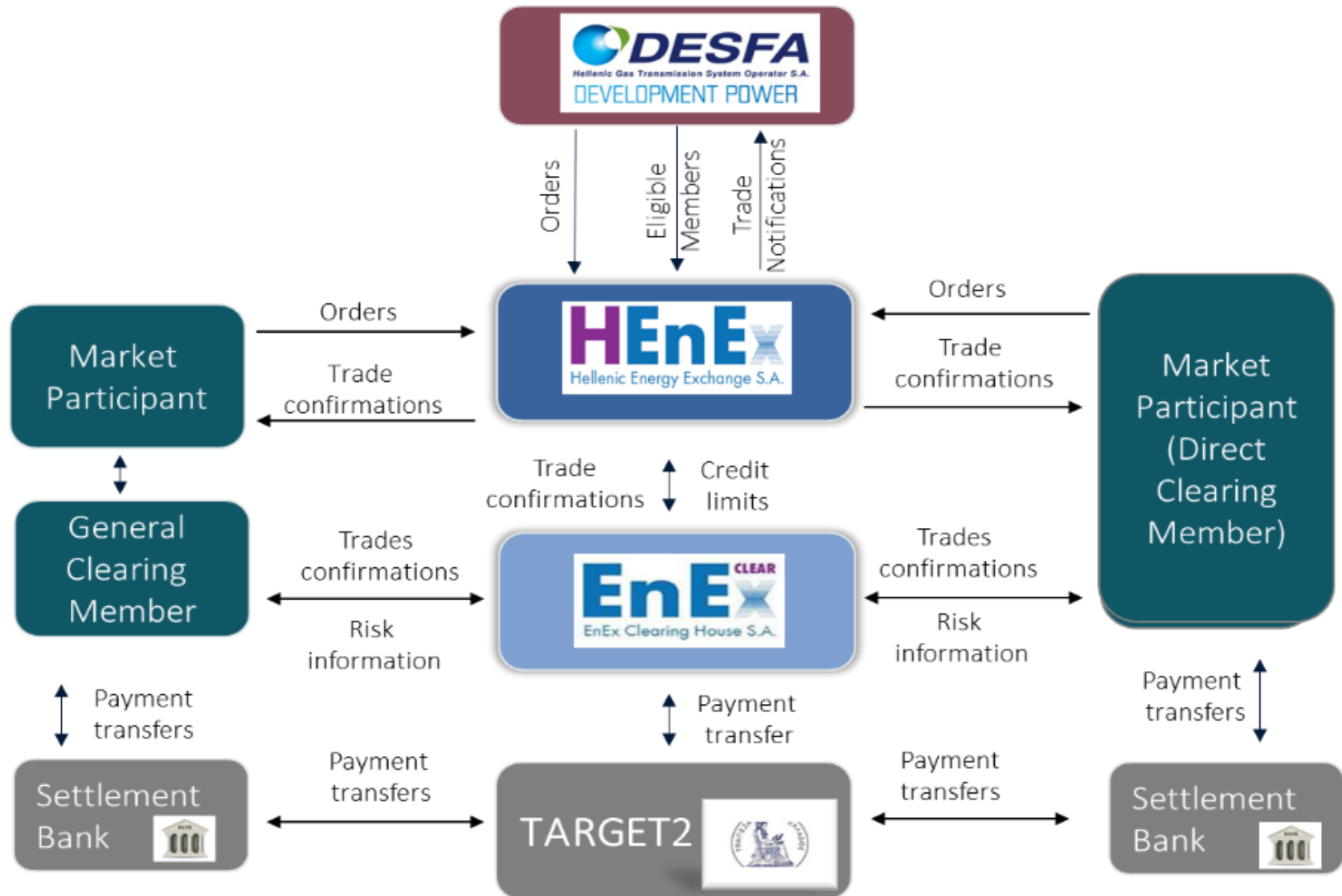
DAM & IDM Volumes



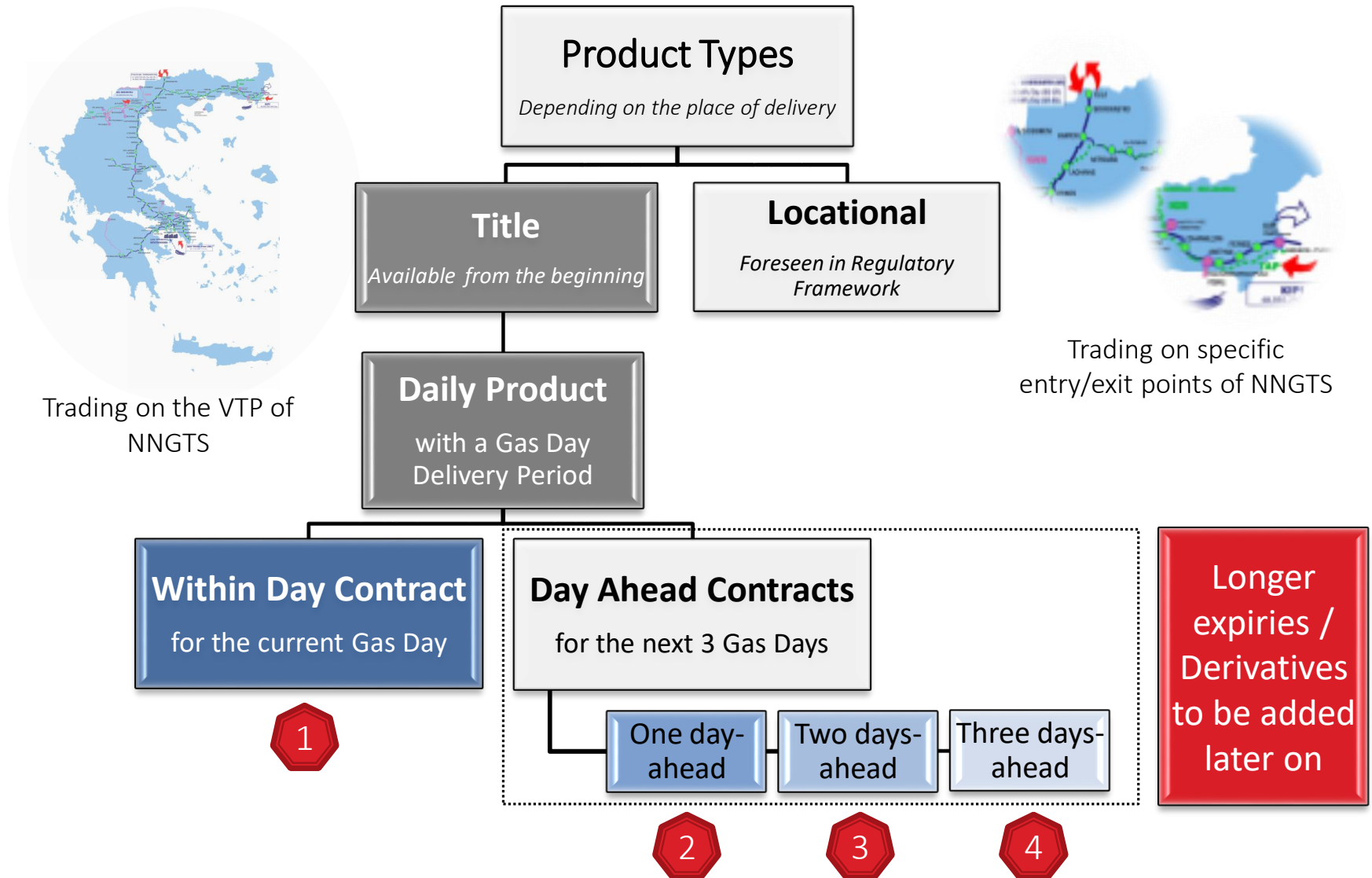
- ▶ Data @ <https://www.enexgroup.gr/web/guest/markets-publications-el-intraday-market>
- ▶ Figures @ <https://www.enexgroup.gr/web/guest/markets-reports>

Development of Natural GAS Market

Market Organization | NG Spot Market Architecture



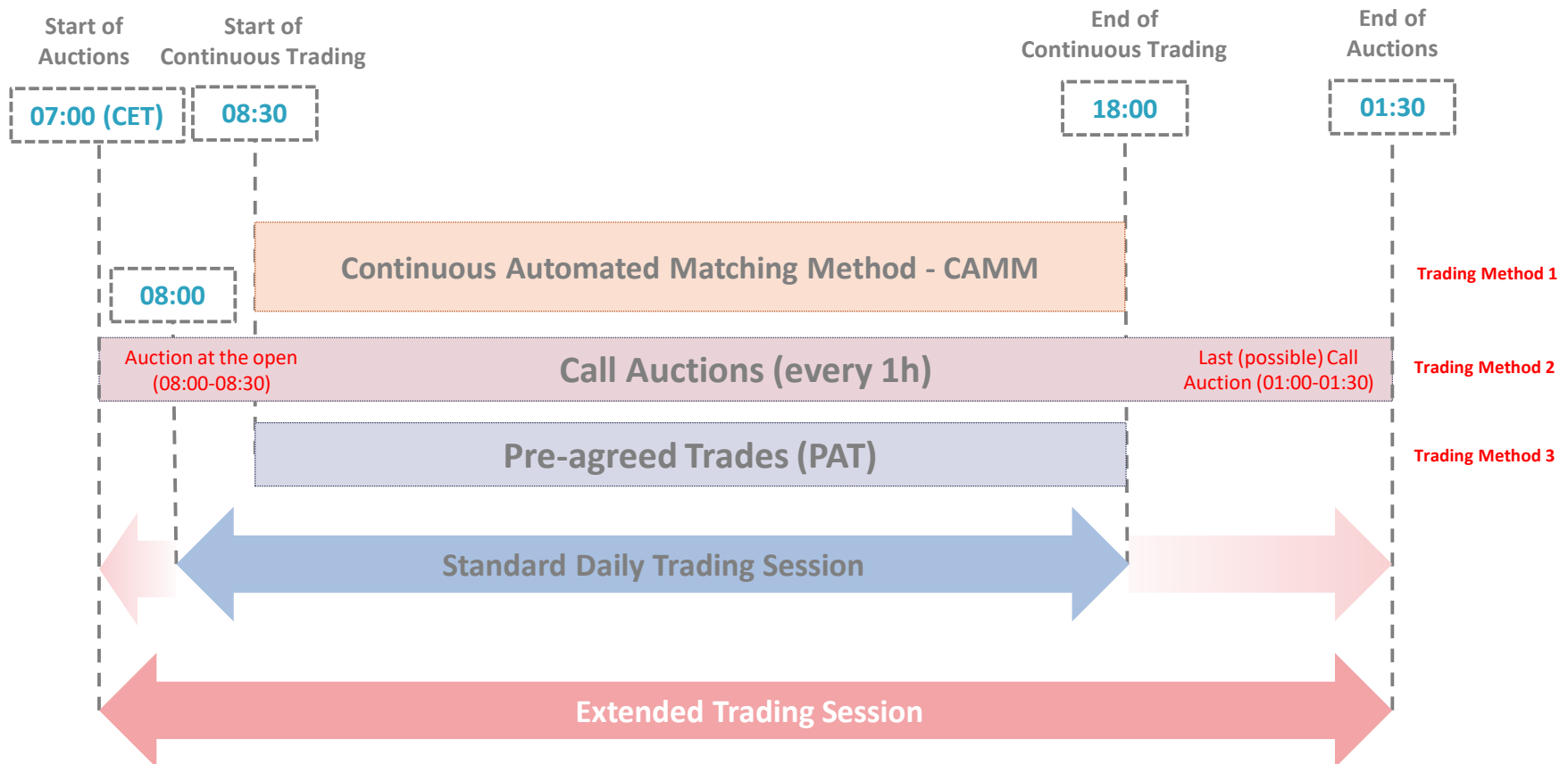
Market Model Design | Type of Market Products



Market Model Design | Proposed Market Timeline

HEnEx's Natural Gas Market

Trading Schedule: Monday-Sunday (including holidays)



NG Trading Platform Fees

According to Decision 6, HEnEx's Fee policy is the following:



Entrance fees	0 € 
Annual membership fee	7.000 €
Trading Fee	0,015 € / MWh
Liquidity Provision Trading Fees	0,005 € / MWh

- The calculation of trading fees is made daily per trade.
- The trading fees are paid on the business day following the execution of the trades in accordance with the cash settlement of the relevant day.

Progress Summary & Goals ahead

▶ Goals achieved		
• Rulebooks Approved by EnExGroup BoDs for submission to RAE	18.06.2021	✓
• Rulebooks Public Consultation from RAE started	29.06.2021	✓
• Main Workshop	12.07.2021	✓
• RAE's Public Consultation on Rulebooks ended	20.09.2021	✓
▶ Next Steps		
• Negotiations for Liquidity Provider	on-going	
• Approval of final Rulebooks & TDs by EnExGroup BoDs	11/2021	
• Final approval of Rulebooks & TDs by RAE	11/2021	
▶ Certification / Onboarding / Dry Runs	10-11/2021	
• Communication for testing period start-up @ MPs	18.10.2021	
▶ Events		
• Pre go-live Workshop	11/2021	
▶ Go-Live	Dec-2021	

Clearing Energy Markets

EnExClear as Clearing House

EnExClear:

intervenes **between** counterparties' transactions within the Market and undertakes the role of buyer vs each seller and vice versa, for the clearing of the financial side of transactions.

Main advantages of EnExClear:

Efficiency: EnExClear aggregates the obligations of the counterparties considering their positions (netting). Financial Settlement is executed daily on Target 2

Risk Management: EnExClear manages counterparties' risk applying fair and suitable risk management models.

EnExClear: Supported Markets

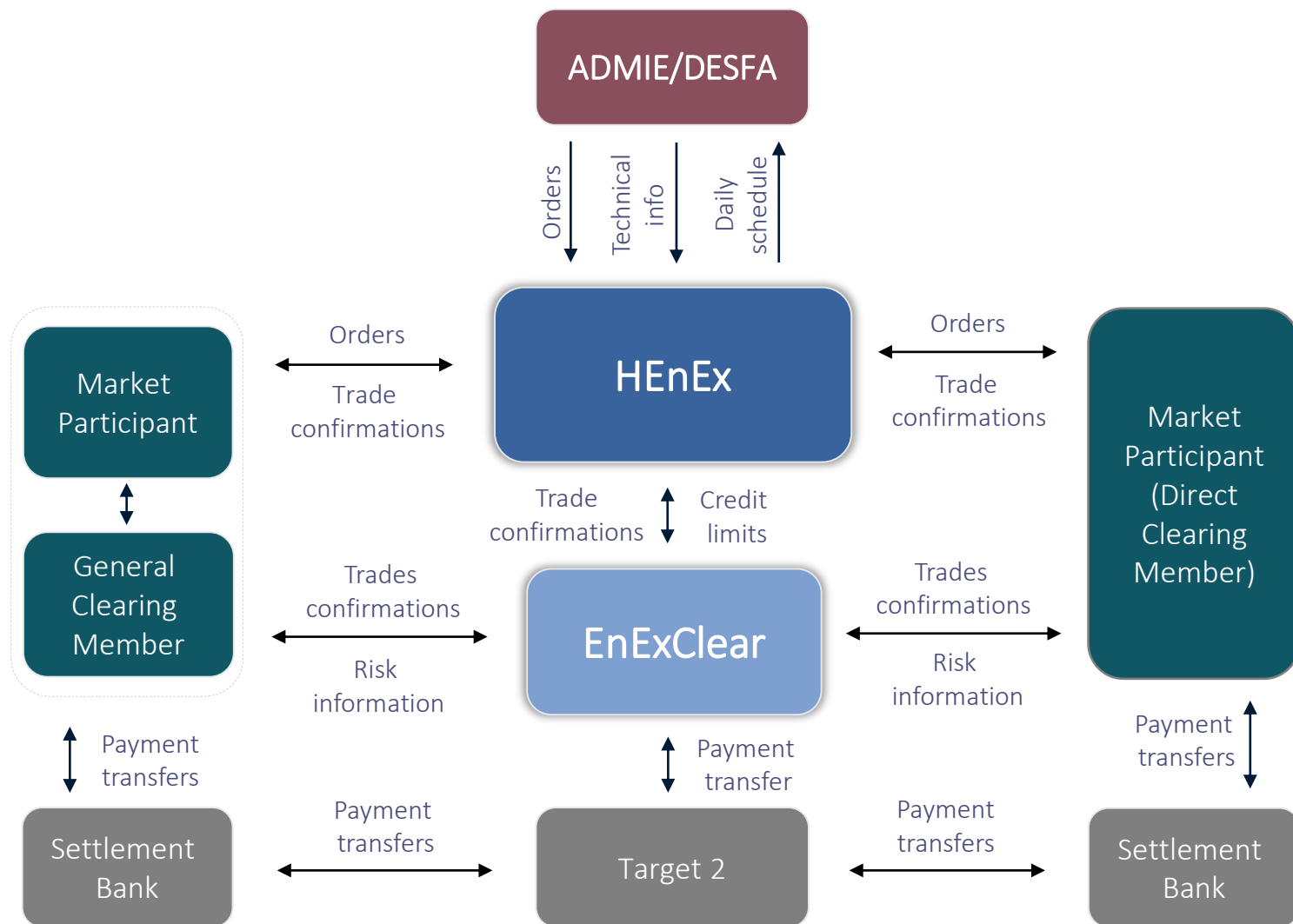
▶ HENEX :

- Electricity Day Ahead and Intraday Market
- Natural Gas Trading Platform

▶ IPTO :

- Balancing Market

EnExClear in Spot Power/NG markets



Risk Management Tools



- ✓ Margins
- ✓ Collaterals
- ✓ Prefunded Credit Limits
- ✓ Default Funds

Clearing Statistics

- ▶ 61 Market Participants in DAM, IDM and Balancing
- ▶ 8 Clearing Members (5 GCM and 3 DCM)
- ▶ 30 mil. € average daily clearing value for DAM-IDM
- ▶ 15 mil. € Default Fund and 105 mil. € Collaterals for DAM-IDM
- ▶ 33 mil. € average weekly clearing value for Balancing Market
- ▶ 41 mil. € Default Fund and 37 mil. € Collaterals for Balancing Market

Thank you for your attention!