



GO MARKET

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HUPX

Organized Guarantees of Origin Market

The Pan-European GO Market

2023.02.02. —————

Current presentation is the extract of the GO Workshop: Entering the Hungarian market which was held on 31st January 2023.

If you are interested in our GO market, please feel free to contact us.

Web

- ▶ <https://hupx.hu/en/go-market/members-and-admission>

Contact

- ▶ membership@hupx.hu



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GO MARKET

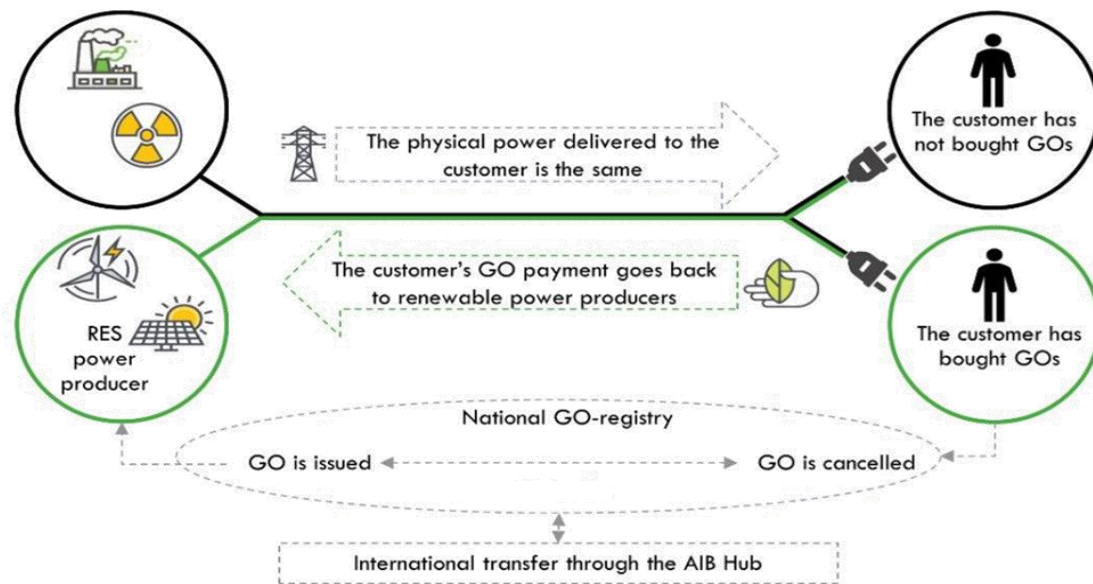
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„Found money“ – The HUPX GO market

2023.01.31. —

GO (Guarantees of Origin)

- ▶ Tradable certificate in Europe
- ▶ Certifies that the given volume of energy has been generated from renewable sources (electricity, gas and heat)



Includes:

- ▶ Power plant identity, place, country, technology, energy source, built-in power, date of commissioning
- ▶ Type of support
- ▶ Start and end of the production period
- ▶ Volume (1 GO = 1 MWh)
- ▶ Individual identification number

1 month of production Registration after production

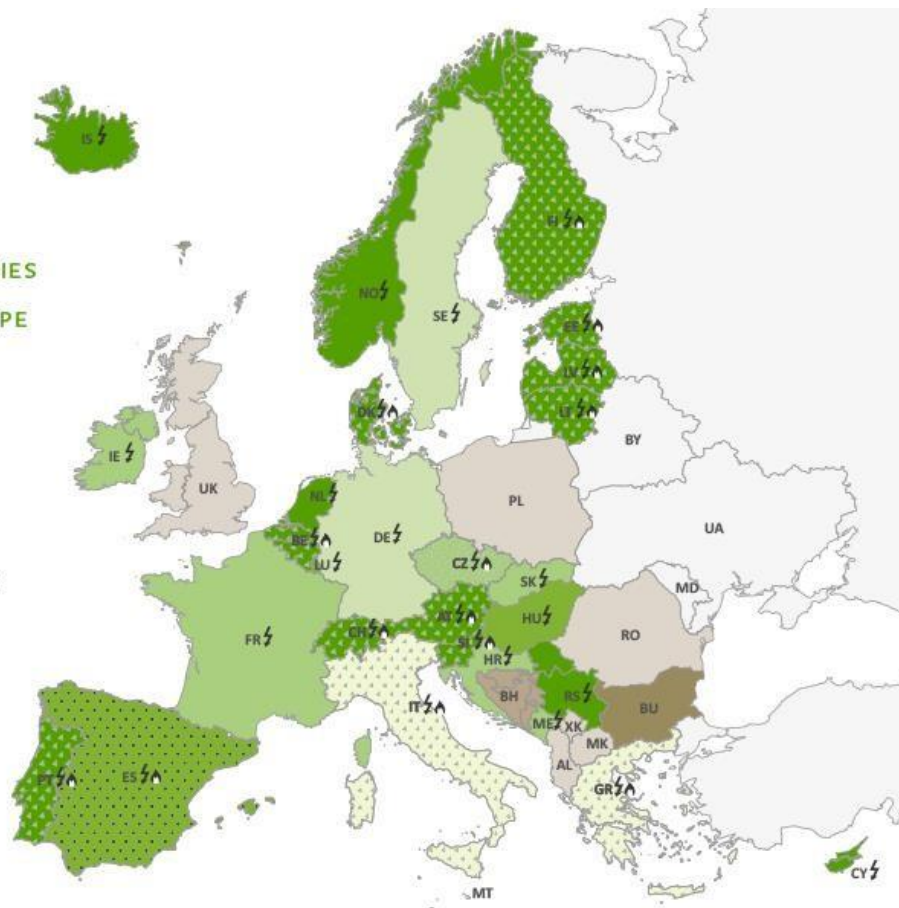
Transfer max. 12 months after the
end of the production period

GO's life



AIB MEMBER COUNTRIES AND ISSUING BODY TYPE OF ORGANISATION

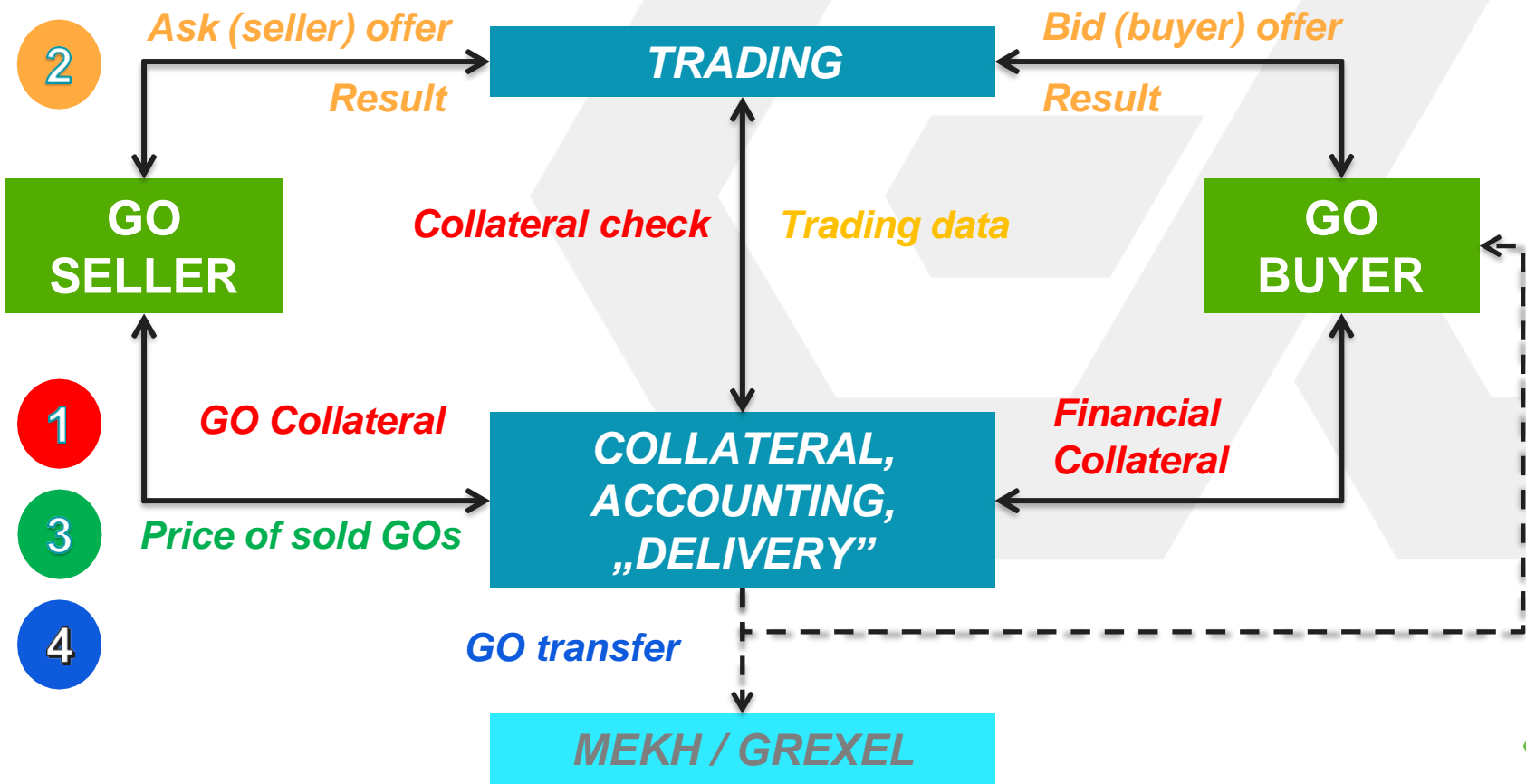
- ES ⚡ Electricity Issuing Body
- Electricity TSO
- Electricity Regulator
- Electricity Market operator
- Electricity Governmental agency
- Electricity Other
- Formal applicant
- Active observer
- Awaiting
- FI ⚡ Gas Issuing Body
- Gas TSO
- Gas Other



AIB
association of issuing bodies

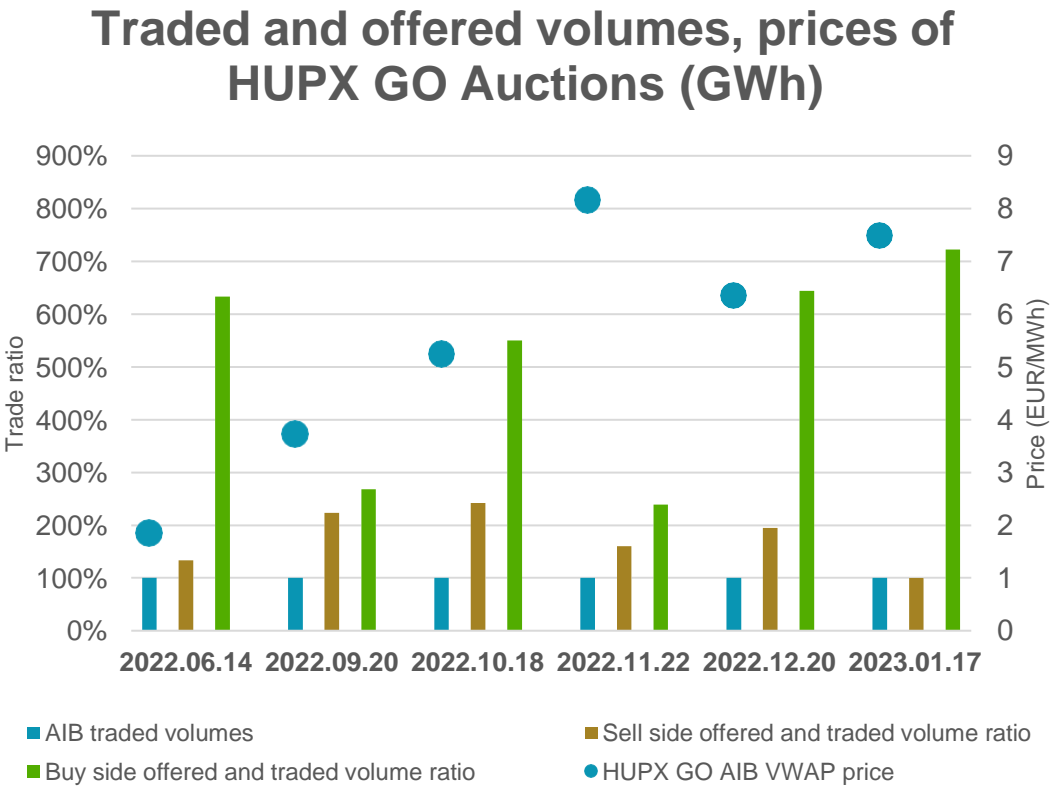
MEKH
Magyar Energetikai és
Közmű-szabályozási Hivatal

Since March 2022
it is possible to
trade the
Hungarian GOs
internationally



Experiences

- ▶ 3-4 TWh/year
Primary FiT GO
- ▶ Permanently
increased price
- ▶ Huge overdemand
for AIB GOs

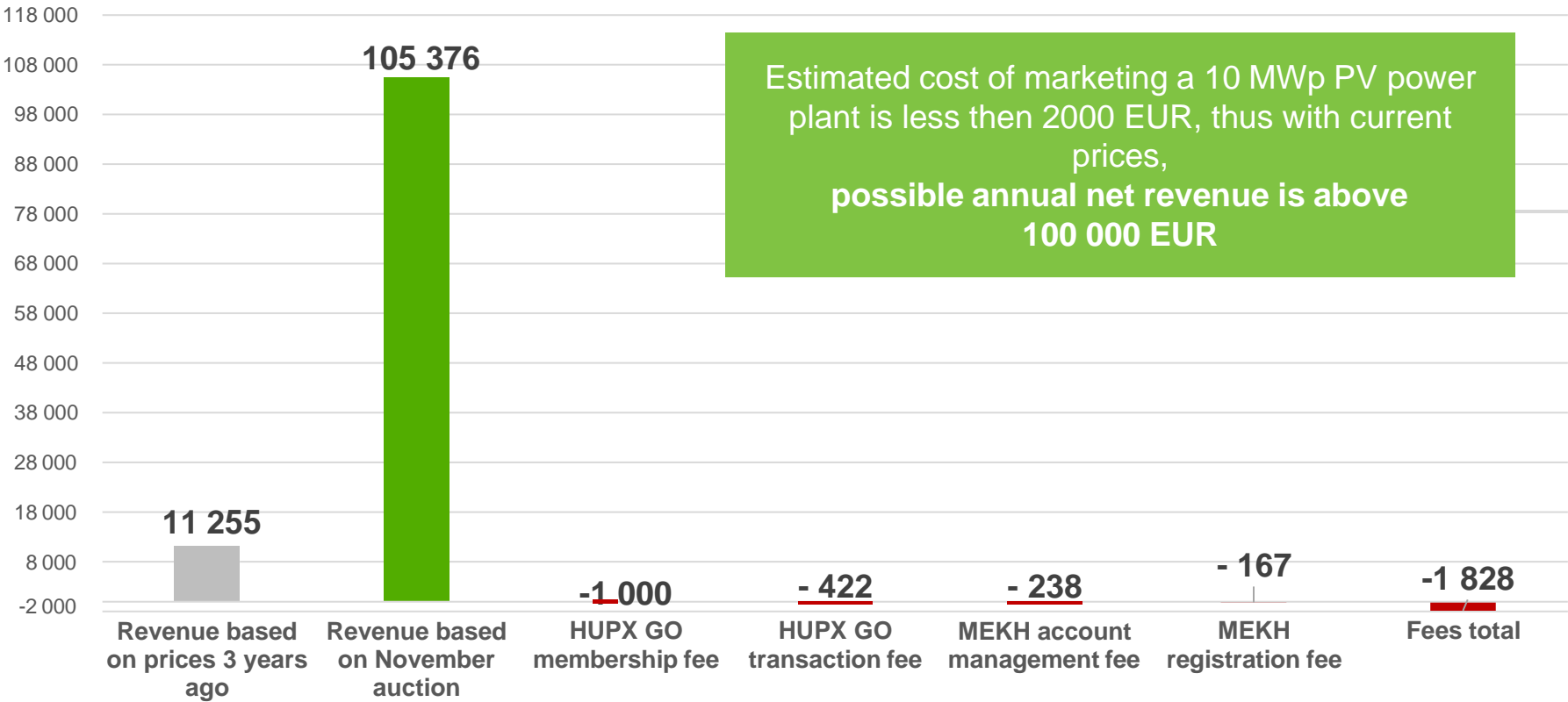


7,49
EUR/MWh

>7x
overdemand



Revenue and cost elements (EUR)



Technical details regarding the HU GO registry

2023.01.31. _____

- Hungarian regulatory authority – MEKH is the issuing body
- Registry is based on the GREXEL system
- HU GO registry is an AIB member
- Import and export is possible
 - Import is charged 10 HUF / MWh
 - Export is charged 5 HUF / MWh

Currently, entering the market as foreign seller, it is necessary to import GOs and placing the volume as collateral but it is not necessary to export again if the offer is not met by eligible demand, it is possible to hold the GO on the technical account until next auctions.

For more information, contact us at membership@hupx.hu!

We can assist you with providing a contact to the authority as well!





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Admission and trading – HUPX GO Market

2023.01.31. —————



Total traded volume: 3 TWh



Phase II: Multiple Seller model

Auction for Non-Primary Feed-in-Tariff GOs and Secondary GOs together with Primary FiT GOs

HUPX launched the multiple seller model on **20th September**, where members can buy and sell on the market under the same GO membership.

Summary of Product List and Specification

- ▶ **5 Order attributes:** *Preference handling via* technology, production month, *commission date, country and support type*
- ▶ **Available technologies:** Biogas, Biomass, Geothermal, Hydro, Landfill gas, Solar, Waste, Wind *and any other EECS compliant technology*
- ▶ **Available countries:** Hungary *and other AIB countries*
- ▶ **Seller side:** *Hungarian and other European power plants and GO traders* besides MAVIR
- ▶ **Clearing and settlement:** Via HUPX technical GO account and HUPX bank account
- ▶ **Guarantee system:** Guaranteed delivery via Collaterals for buyers and sellers
- ▶ **Auction frequency:** *Monthly Auctions*
- ▶ **Pricing mechanism:** *Single clearing price set by last winning buy Order*



Single Auction and streamlined Order insert with a complex Order Book

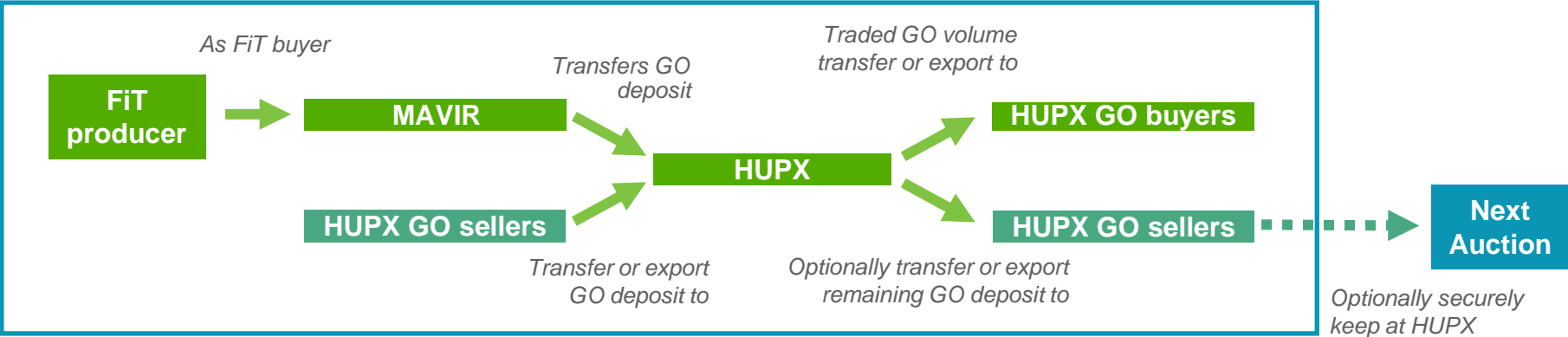
Technology	Biogas	Biomass	Geothermal	Hydro	Landfill gas	Solar	Waste	Wind	Other EECS technologies
Commission year	<div><div>29 AIB countries</div><div>Every commission year</div><div>8+ technologies</div><div>2 support type</div><div>Every valid production month</div></div>								Support type
1903									Supported
1904									
...									Unsupported
...									
2020									
2021									
2022	Production months	Month T-11	Month T-10	Month T-3	Month T-2	Month T-1	

5 Order attributes via preference handling

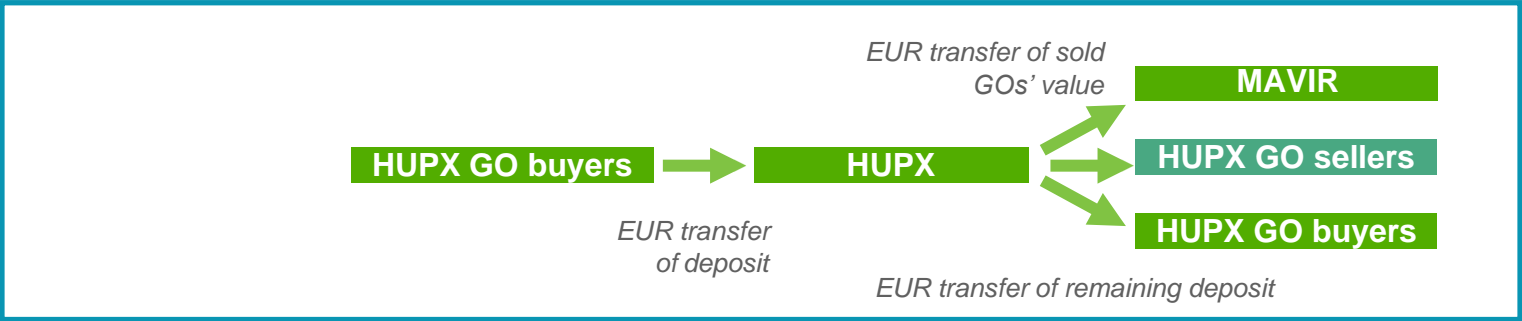


Physical settlement

Existing New



Financial settlement





Admission forms

- ▶ GO Membership Agreement
- ▶ Know Your Customer questionnaire
- ▶ D01: Identification form
- ▶ D02: Authorized signatories form
- ▶ D03: Trader registration form
- ▶ Personal data handling declaration form
- ▶ D04: Accounts form *
- ▶ D05: Collateral declaration form (*for sellers*)

Supporting documents

- ▶ Company Registration Extract (issued within 60 calendar days)
- ▶ copy of VAT certification
- ▶ Proof of contract or certified copy of Registry Account contract with MEKH or other AIB Member

Process



* a prefilled D04 form will be sent by HUPX, which only needs to be signed by the member

Discounted fees in place

Simple admission process

The discounted fee schedule implemented for the go-live of the HUPX GO market is still in place

Summary of Fee Schedule

- ▶ **Competitive fees charged quarterly**
 - ▶ Entrance fee: 0 EUR
 - ▶ Membership fee: 250 EUR/quarter
 - ▶ Transaction fee: 0.03 EUR/MWh
- ▶ Export fee: 0.0135 EUR/MWh (5 HUF/MWh pass through to MEKH) only to foreign AIB registries
- ▶ Import fee: 0.027 EUR/MWh (10 HUF/MWh pass through to MEKH) only from foreign AIB registries





Monthly auction with a one-week collateral reception timeframe

- ▶ Trading day is the first Tuesday after the 15th day of the month
- ▶ Collaterals can be transferred on the week before the auction (from Monday to Friday)

HUPX GO Trading Calendar - 2023



Q1-23															Q2-23																				
January						February						March						April						May						June					
Monday	2	9	16	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26									
Tuesday	3	10	17	24	31	7	14	21	28	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27									
Wednesday	4	11	18	25		1	8	15	22	1	8	15	22	5	12	19	26	3	10	17	24	31	7	14	21	28									
Thursday	5	12	19	26		2	9	16	23	2	9	16	23	6	13	20	27	4	11	18	25		1	8	15	22	29								
Friday	6	13	20	27		3	10	17	24	3	10	17	24	7	14	21	28	5	12	19	26		2	9	16	23	30								
Saturday	7	14	21	28		4	11	18	25	4	11	18	25	1	8	15	22	6	13	20	27		3	10	17	24									
Sunday	1	8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	7	14	21	28		4	11	18	25									
Q3-23															Q4-23																				
July						August						September						October						November						December					
Monday	3	10	17	24	31	7	14	21	28	4	11	18	25	2	9	16	23	6	13	20	27	4	11	18	25										
Tuesday	4	11	18	25		1	8	15	22	29	5	12	19	26	3	10	17	24	7	14	21	28	5	12	19	26									
Wednesday	5	12	19	26		2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27								
Thursday	6	13	20	27		3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	7	14	21	28								
Friday	7	14	21	28		4	11	18	25		1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29							
Saturday	1	8	15	22	29	5	12	19	26		2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30							
Sunday	2	9	16	23	30	6	13	20	27		3	10	17	24		1	8	15	22	5	12	19	26	3	10	17	24	31							

Trading Day

Gate open between 9:00 a.m. and 2:00 p.m.

Collateral reception timeframe

First Day 8:00 a.m. until Last Day 4:00 p.m.



T-6* 8:00 a.m. (CET)	T-2* 4:00 p.m. (CET)	T: Trading Day	T 4:00 p.m. (CET)	T+1*	<i>* Working days based on Trading Calendar</i>
Start of EUR and GO Collaterals reception timeframe	End of EUR and GO Collaterals reception timeframe	Order Book is open on the day of Auction: 10:00 - 14:00	Publication of market results	Settlement and invoicing of GOs and payments	
Dates of the next HUPX GO Auction					
13th February 2023	17th February 2023	21st February 2023	21st February 2023	22nd February 2023	

Principles

- ▶ **Several days for EUR and GO Collaterals reception** to allow international transactions (e.g. SEPA and other foreign exchange currency transactions, **before the auction the deposited GOs will be published on a daily basis to the HUPX website**)
- ▶ **One day for Auction**, where Order can be inserted into the Order Book to avoid GO price volatility and concentrate liquidity
- ▶ **Quick Settlement** of GOs via CMO.Grexel and AIB Hub (transfer or export) and EUR payments
- ▶ **Invoicing for buyers** is done during Settlement, **sellers receive an invoice annex**





Add Order

Company Name *

Field required
Order Side *

Buy

Technology

☐ Biogas
 ☐ Biomass
 ☐ LandfillGas
 ☐ Geothermal
 ☐ Waste
 ☐ Solar
 ☐ Wind
 ☐ Hydro
 Technology

Production month

Field required

Country

☐ Hungary Country

Commission Year From *

2022

Commission Year To *

2038

GO Quantity *

5

Price [EUR/GO] *

10

Subsidy: ☒ Supported ☒ Non-supported

Action: ☐ Only preference ☒ Fill the remaining

Web based Trading System


- Opens at 10:00 on the day of the auction
- Online offer making by the registered trader
- Only the own activity can be seen
- Detailed Informationsheet on the website:

[LINK](#)

HUPX Guarantees of Origin Limit report

Reporting Period Generation Time

2022.03.31
11.10.2020 5:22:47 PM




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Company: Trading Company A

Daily position

Auction date		Production month	Technology	Country	Commission year	Support	EECS®	Limit value	Quantity
2022.09.20	Base Limit	Feb-22	Solar	Hungary	2020	Supported	AIB	1 000	MWh
2022.09.20	Current Limit	Feb-22	Solar	Hungary	2020	Supported	AIB	800	MWh
2022.09.20	Base Limit	Mar-22	Hydro	France	2020	Unsupported	AIB	1 000	MWh
2022.09.20	Current Limit	Mar-22	Hydro	France	2020	Unsupported	AIB	700	MWh



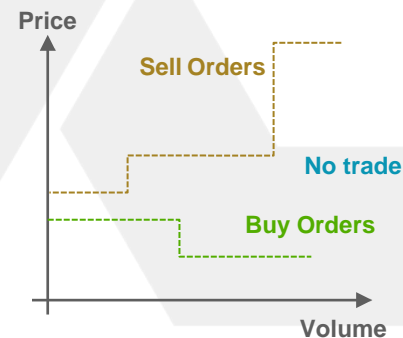
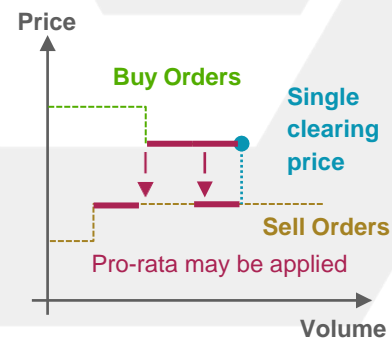
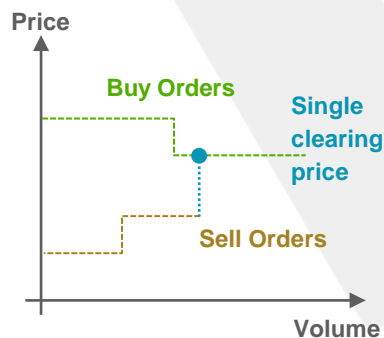
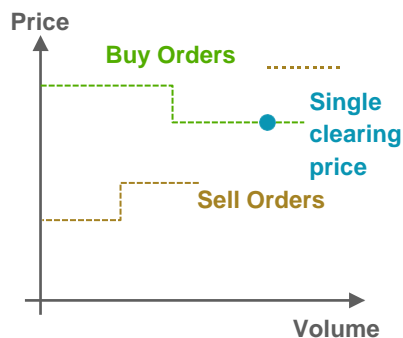
Security Code *

Field required



Auction algorithm

1. List all the possible Contracts (subproducts based on Order attributes)
2. Select the one with the highest traded volume (liquidity)
3. If multiple Contracts would result the same liquidity, select the one with the highest social welfare
4. Run **single clearing price** Auction algorithm, *examples:*



5. Refresh Order Book based on Auction algorithm results and Trades
6. Repeat 1-5. and run until there is buy or sell volume to be matched



**T-5* 8:00 a.m.
(CET)**

Start of EUR és GO
collateral timeframe

**T-2* 4:00 p.m.
(CET)**

End of EUR és GO
collateral timeframe

T: Trading day

Order book is opened
between 10:00 and
14:00

**T 4:00 p.m.
(CET)**

Publication of the
results

T+1*

Settlement and
invoicing

** Working days
are defined in
the Trading
Calendar*

General operating principles

- ▶ **Orders can be made on the trading day between 10:00 and 14:00**, when you can putbids and asks parallelly into the order book
- ▶ **After the publication of the market results quick settlement procedure and automatic transfer of EUR and GO to the given accounts**
- ▶ **Sellers receive invoice annexes**

Thank you for your attention!



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