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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.**

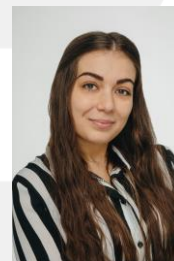
**If you are interested in our GO market, please feel free to contact us.**

## **Web**

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

## **Contact**

- ▶ [membership@hupx.hu](mailto:membership@hupx.hu)



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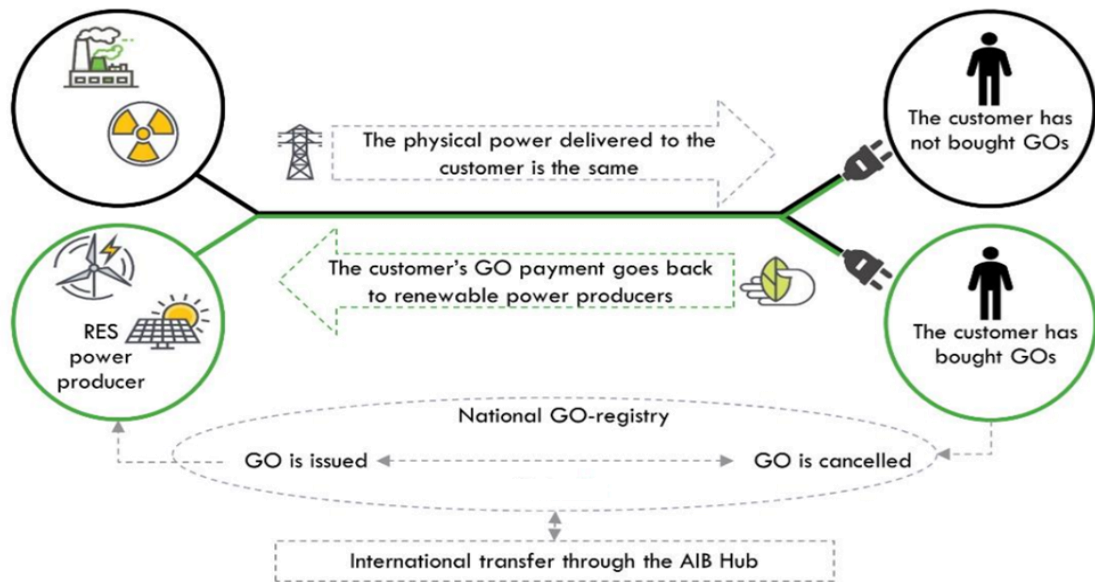
# „Found money” – The HUPX GO market

2023.01.31.

# What is a GO?

## 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

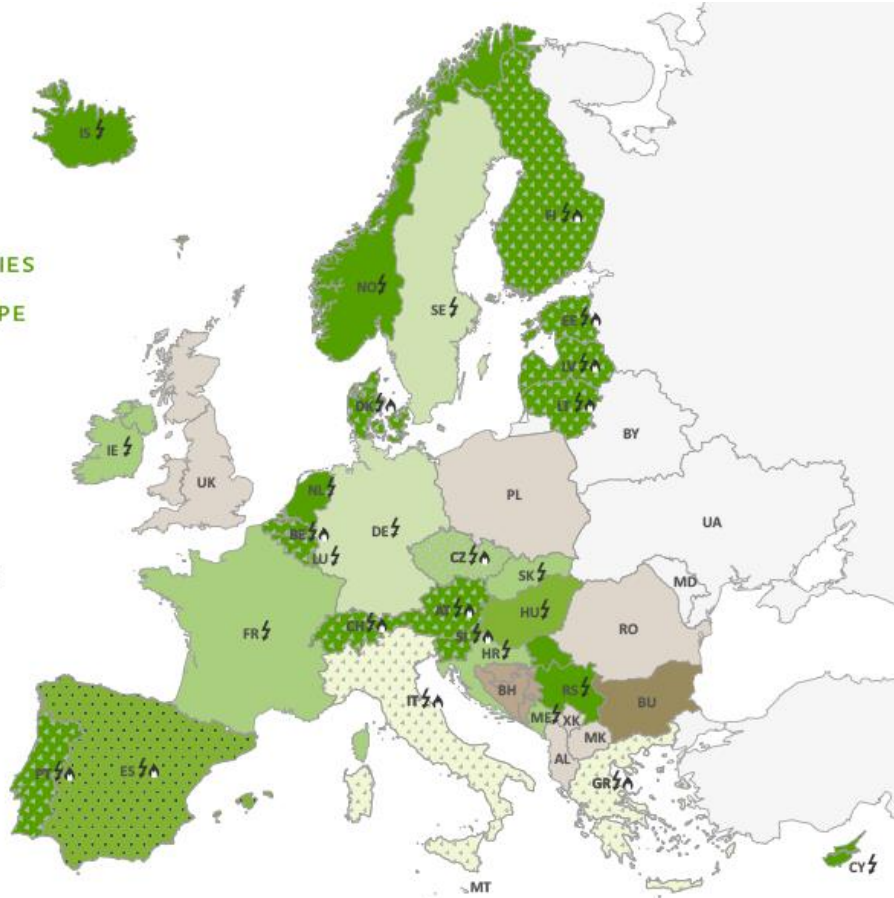
Transfer max. 12 months after the end of the production period

GO's life



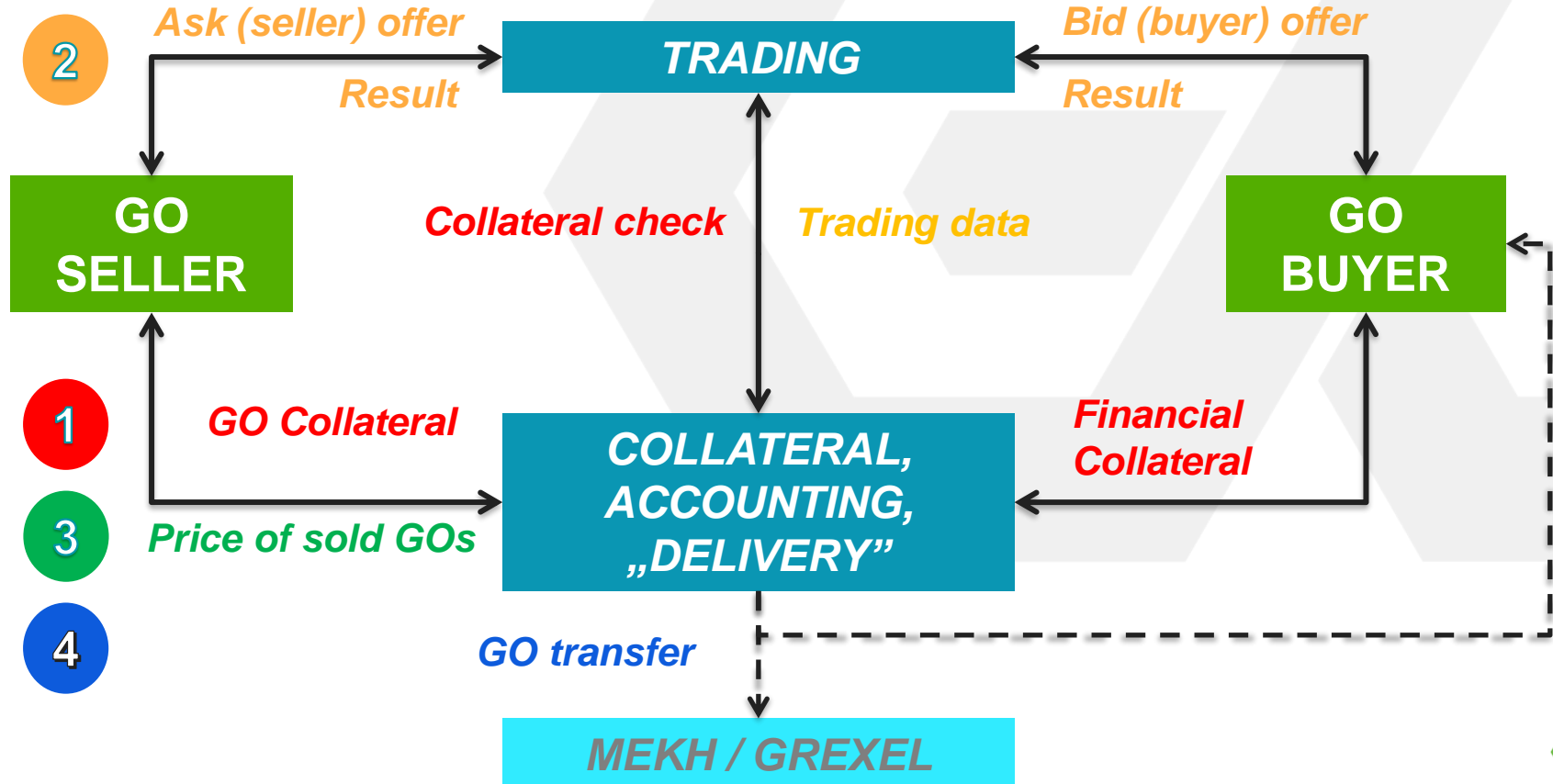
## AIB MEMBER COUNTRIES AND ISSUING BODY TYPE OF ORGANISATION

- 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



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

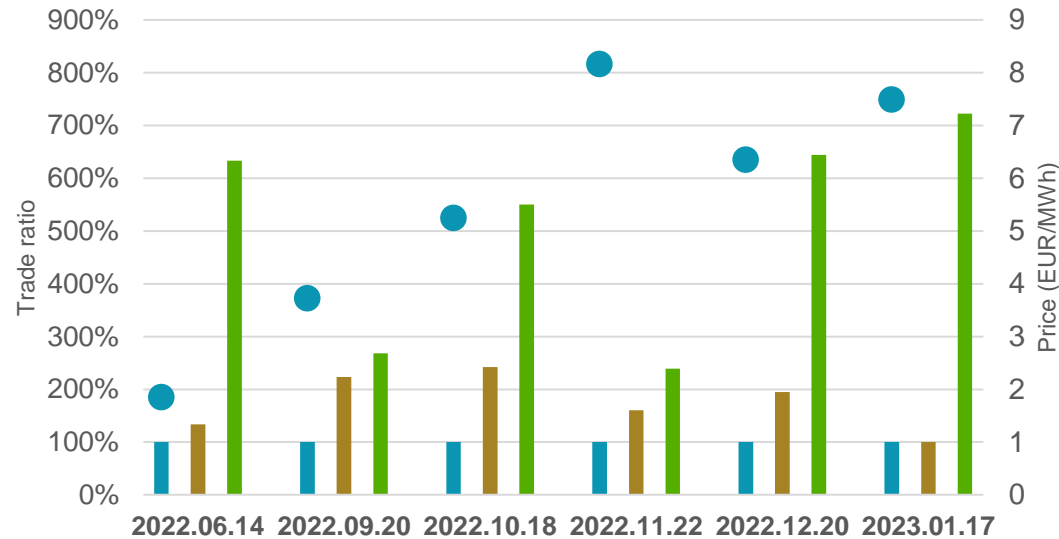




## Experiences

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

### Traded and offered volumes, prices of HUPX GO Auctions (GWh)



■ AIB traded volumes

■ Buy side offered and traded volume ratio

■ Sell side offered and traded volume ratio

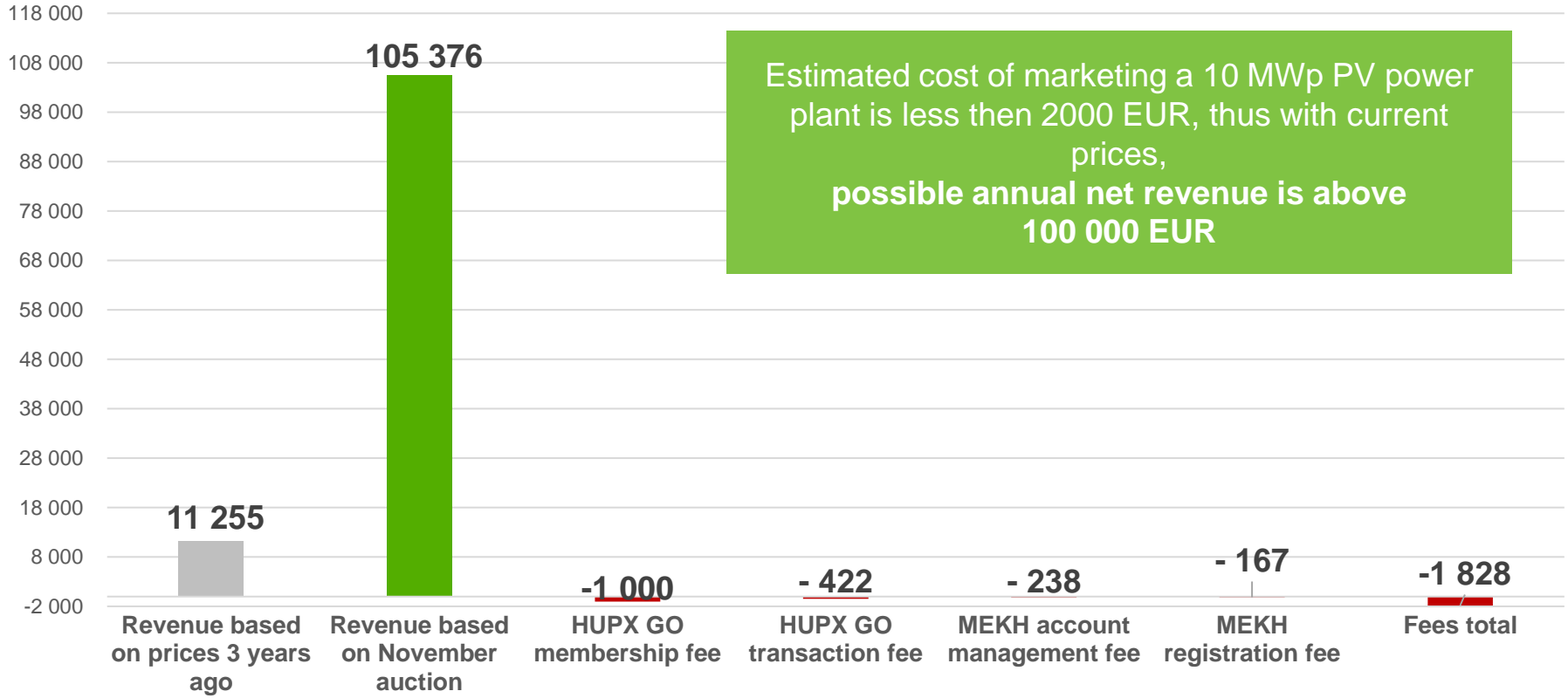
● HUPX GO AIB VWAP price

**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](mailto: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	 <p>29 AIB countries</p>					<p>8+ technologies</p>			Support type				
1903									<p>Every commission year</p>	<p>2 support type</p>			Supported
1904													Supported
...												Unsupported	
...													Unsupported
2020													Unsupported
2021													Unsupported
2022	Production months	Month T-11	Month T-10	...	...	Month T-3	Month T-2	Month T-1					

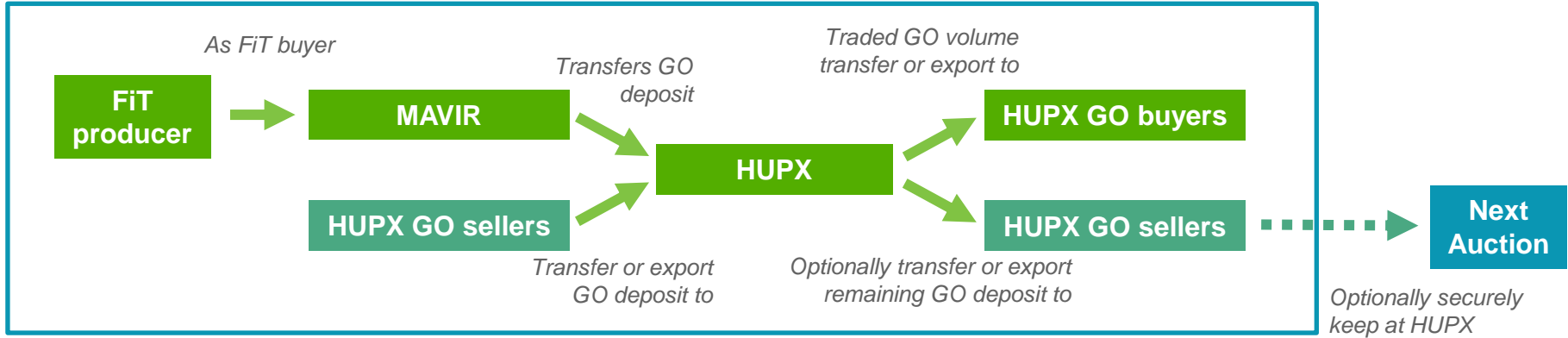
5 Order attributes via preference handling



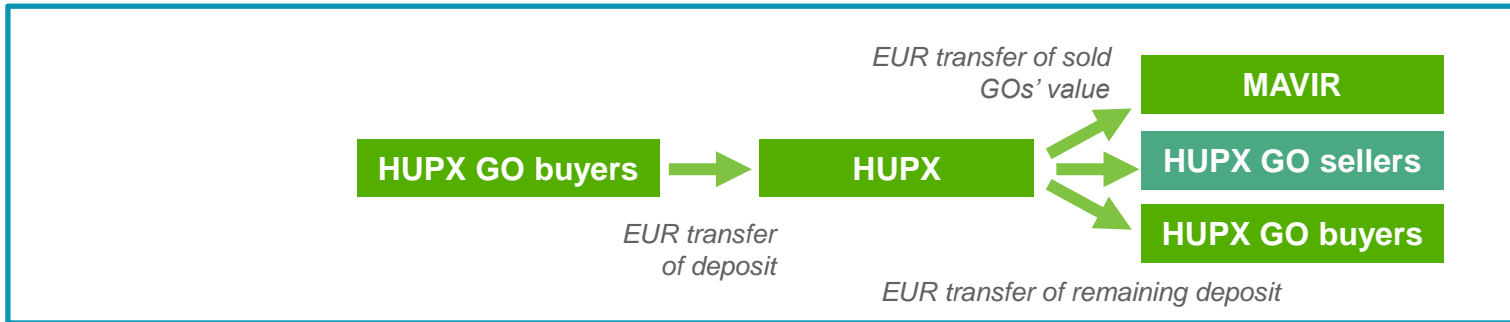
## Physical settlement

Existing

New



## Financial settlement





**Opening a  
registry  
account at  
MEKH or any  
other AIB**

**HUPX  
GO  
membership**

HUPX GO  
auction and  
preparation

HUPX GO  
trading and  
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**





**Opening a  
registry  
account at  
MEKH or an  
other AIB**

**HUPX  
GO  
membership**

**HUPX GO  
auction and  
preparation**

**HUPX GO  
trading and  
settlement**

## 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 29	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 30	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 31	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 29	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 30	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 30	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 31	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 29	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)**

Start of EUR and GO Collaterals reception timeframe

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

End of EUR and GO Collaterals reception timeframe

**T: Trading Day**

Order Book is open on the day of Auction: 9:00 - 14:00

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

Publication of market results

**T+1\***

Settlement and invoicing of GOs and payments

*\* Working days based on Trading Calendar*

*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

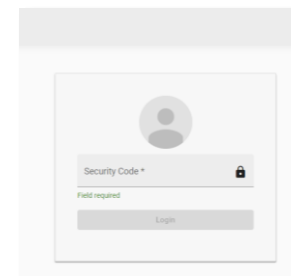
Action:  Only preference  Fill the remaining

## Web based Trading System

- ▶ Opens at 9:00 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:

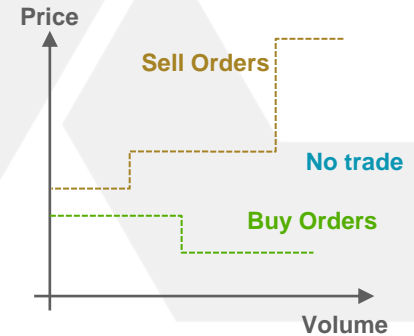
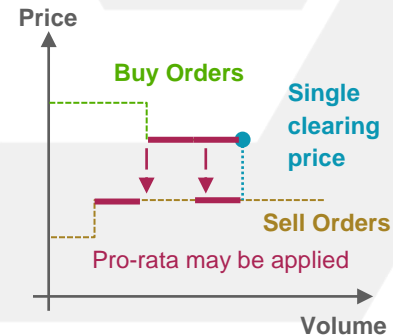
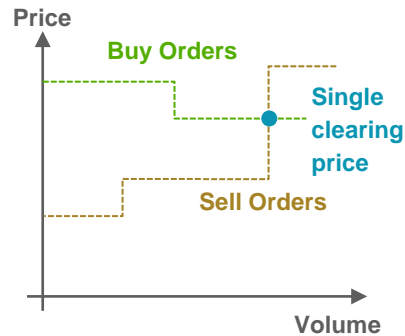
[LINK](#)

<b>HUPX Guarantees of Origin Limit report</b>	<b>Reporting Period Generation Time</b>	2022.03.31 11.10.2020 5:22:47 PM	 powered by <b>h u p x</b>						
<b>Company:</b>	Trading Company A								
<b>Daily position</b>									
Auction date	Production month	Technology	Country	Commission year	Support	EECS®	Limit value	Quantity	
2022.09.20	<b>Base Limit</b>	Feb-22	Solar	Hungary	2020	Supported	AIB	1 000	MWh
2022.09.20	<b>Current Limit</b>	Feb-22	Solar	Hungary	2020	Supported	AIB	800	MWh
2022.09.20	<b>Base Limit</b>	Mar-22	Hydro	France	2020	Unsupported	AIB	1 000	MWh
2022.09.20	<b>Current Limit</b>	Mar-22	Hydro	France	2020	Unsupported	AIB	700	MWh



## 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 9:00 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 9:00 and 14:00**, when you can put bids 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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