

Renewable Energy: Hedging Tools and GO Futures On EEX

8,660 TWh

Traded on the global EEX Group
power markets in 2023

7,293 TWh

Traded on the global EEX Group
gas markets in 2023

Coordination of Day-ahead
Market Coupling for

25

power spot markets

1,180,094

contracts traded in
freight futures & options 2023

More than

850

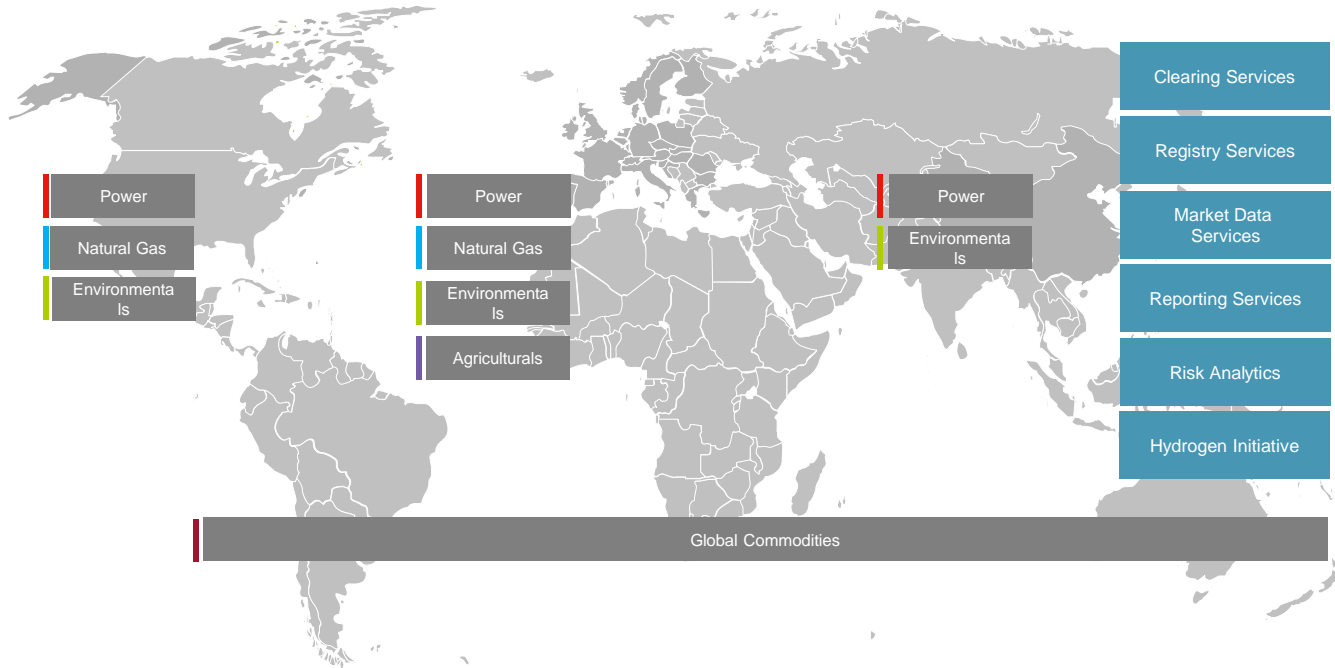
Trading participants
from 41 countries

> 2,500

emissions auctions overall

Operating commodity markets worldwide

EEX Group offers a comprehensive portfolio of products and services in three major time zones with a proven track record in power, natural gas and environmentals.



North America

Europe

Asia/Pacific

Vision

Develop pan-European energy trading platform

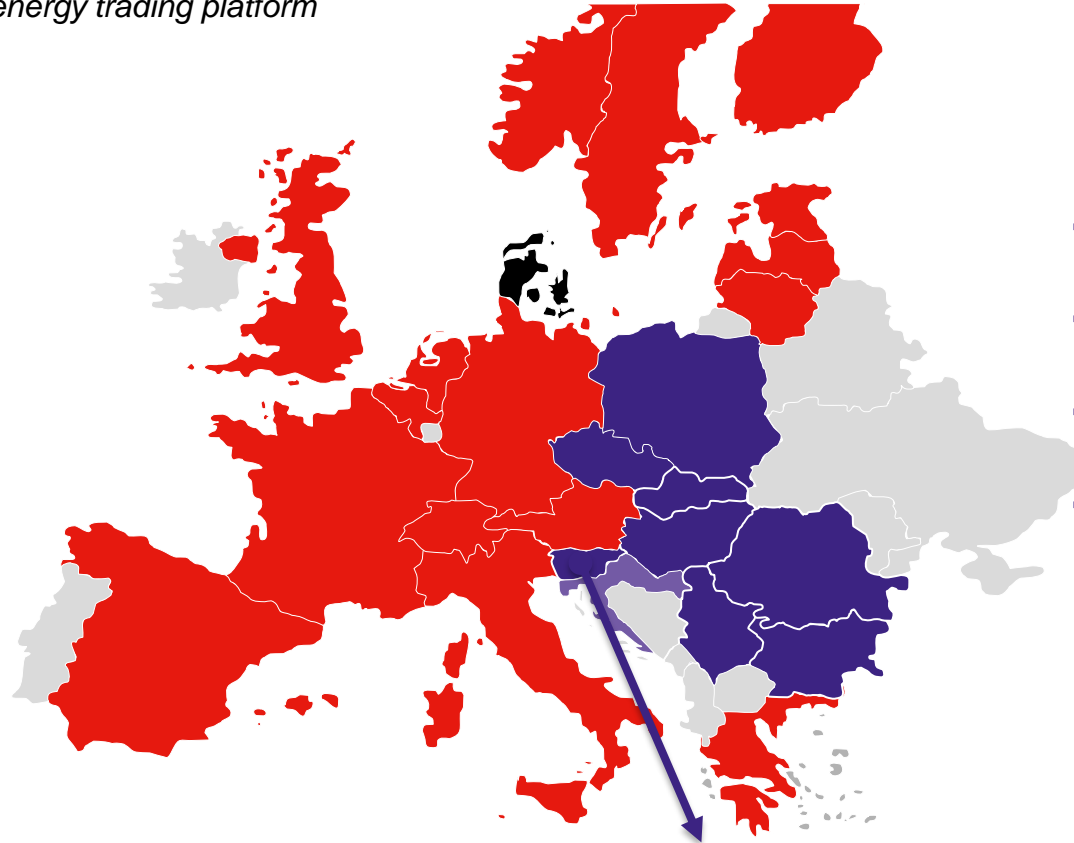
One membership

Easy access

Attract new players

Develop new areas

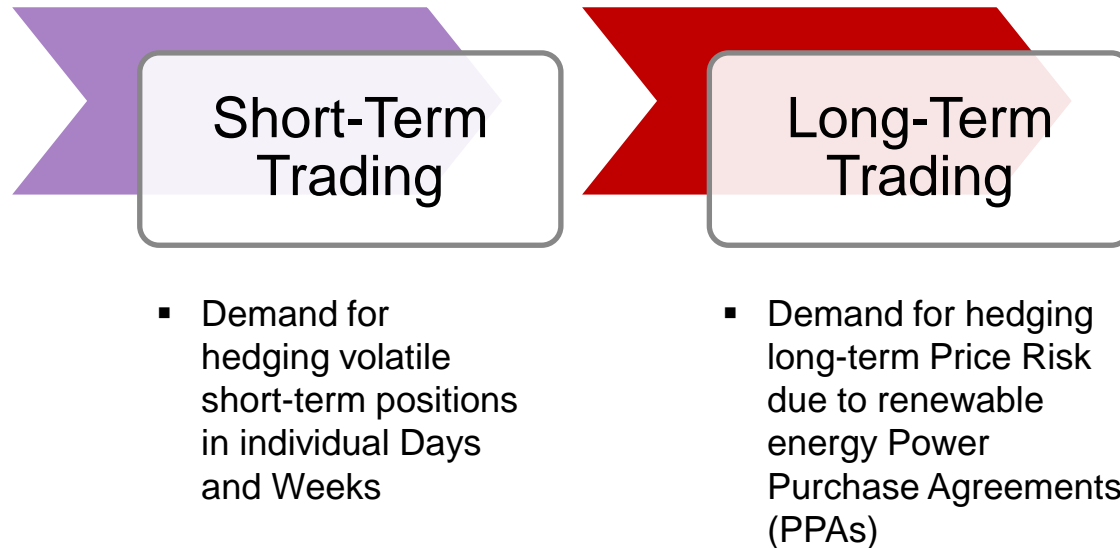
New products



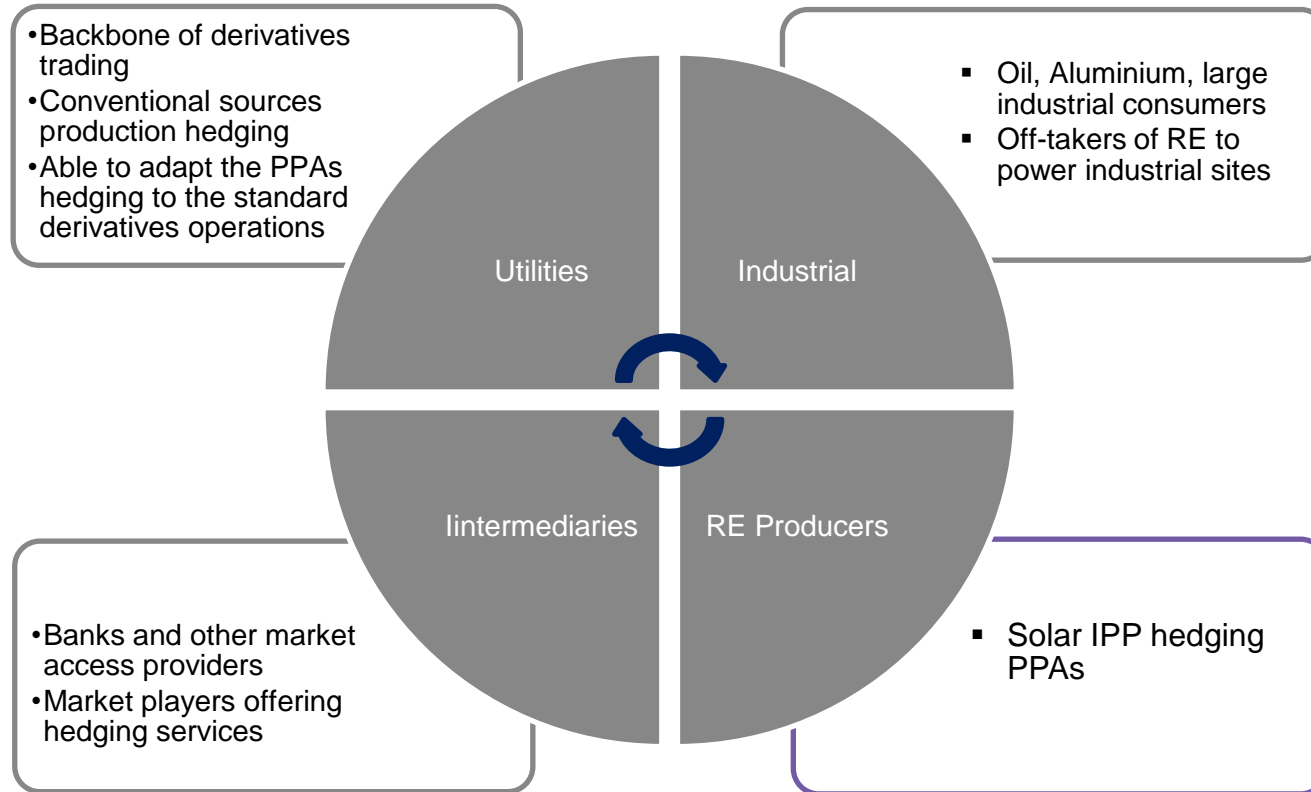
PXE Role

- PXE became an integral part of EEX
- PXE is responsible for CEE/SEE markets
- PXE acts as a local help to clients in the region
- PXE is responsible for CEE/SEE products

Renewables are driving two major trends in Power Derivatives markets



Who are the PPA Hedgers on EEX?



Role of the Exchange in the PPA Market

Price
Transparency

- EEX's market prices provide reliable price references.
- Project developers and buyers of PPAs can assess their valuations against EEX wholesale prices.

Price Risk
Management

- Manage power price risk for renewable energy assets.
- Reduce the overall risk exposure for the largest risk element in RE portfolios.

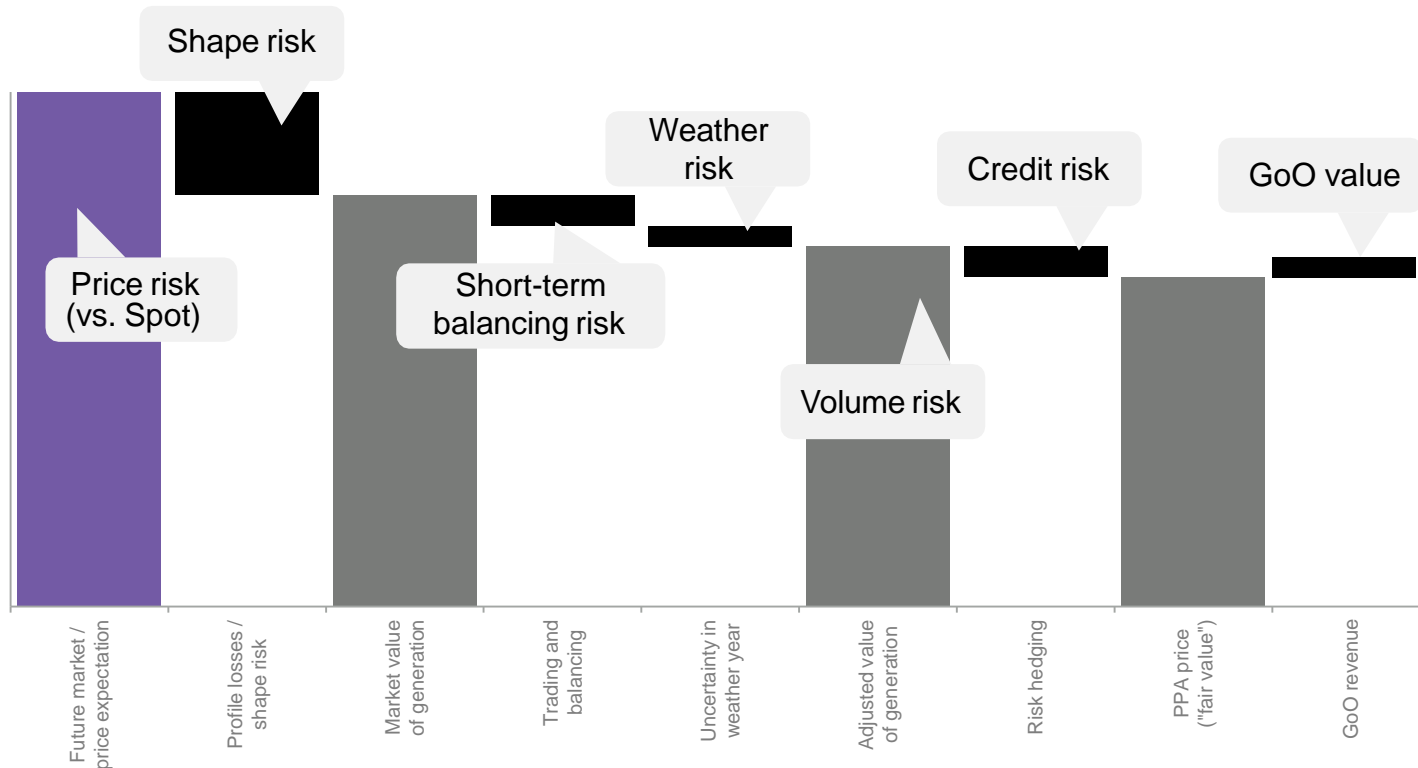
Counterparty Risk
Management

- Trading and hedging on EEX alleviates counterparty risk for trading participants.
- This is especially important for long-term risk management.

Enabler of
Renewable
Energy Growth

- Price and counterparty risk is offloaded onto the clearing house, freeing internal risk capacity within trading participants.
- This enables taking on more PPAs and facilitates growth of renewable energy capacity in Europe.

Price Risk is the most important risk factor in a PPA



EEX Power Derivatives Markets and Cal+10

- EEX **extended Base Load Yearly Futures to Cal+10** on 27 September 2021 in markets with high potential of PPA activity: **Spain, Germany and Italy**, to facilitate long-term hedging and more PPA development.
- This extends the standard Power product setup of EEX.*
- Each product has as its underlying the Spot index for the respective market (ie. for Hungarian power, the day-ahead price published by HUPX and for Bulgarian power – IBEX).



Settlement Process for Long-Term Expiries

Establishing daily settlement prices to Cal+10 is done through a methodology combining regular Fair Value calibration and a pricing model.

Fair Value
Market Survey



Daily Settlement
Methodology

- **Bi-Weekly Market Survey** of trading members providing their Fair Values of the curve to Cal+10 for the German, Italian and Spanish Base Load Calendar contracts.
- On days where there is no market survey, trade or order book pricing information in the respective contracts during the settlement price window:
 - A **pricing model** based on an algorithmic extrapolation of real market prices in near-term expiries is used to establish settlement prices.

If you would like to participate in the market survey, please contact the
EEX Market Operations Team:
T +49 341 2156-222, trading@eex.com

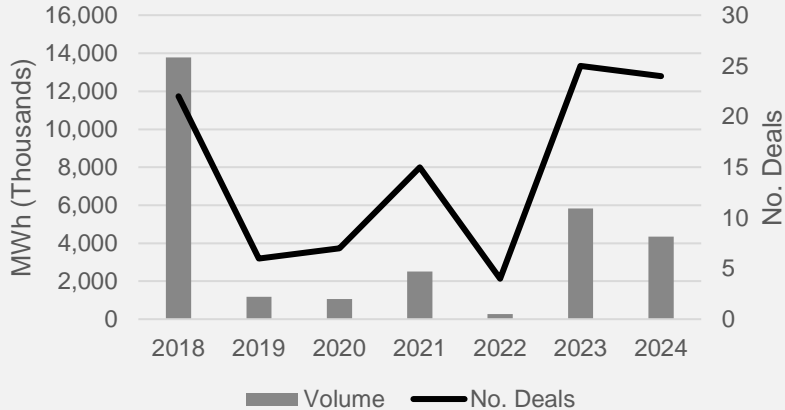
Deals on Polish Power market in 2021

Trade Date	Product	Expiry Year	Expiry Month	Type	Trade Price	Initial Margin per Contract	Lots (in MW)	Initial Margin (in EUR)	Trade Volume (in MWh)	Notional Value
03.02.2021	Polish Power base year	2022	12	TOB	58,50 €	40 033,20 €	5	200 166,00 €	43 800	2 562 300,00 €
04.02.2021	Polish Power base year	2022	12	OTC	58,80 €	40 033,20 €	20	800 664,00 €	175 200	10 301 760,00 €
05.02.2021	Polish Power base year	2022	12	TOB	59,10 €	40 033,20 €	10	400 332,00 €	87 600	5 177 160,00 €
05.02.2021	Polish Power base year	2023	12	TOB	58,30 €	29 083,20 €	10	290 832,00 €	87 600	5 107 080,00 €
08.02.2021	Polish Power base year	2024	12	TOB	58,75 €	23 277,60 €	5	116 388,00 €	43 920	2 580 300,00 €
SUM						172 460,40 €	50	1 808 382,00 €	438 120	25 728 600,00 €

- 50 MW of long-term products were traded on Polish Power market in the beginning of 2021
- The **Initial Margin percentage** of the notional value of the trades was **7%**

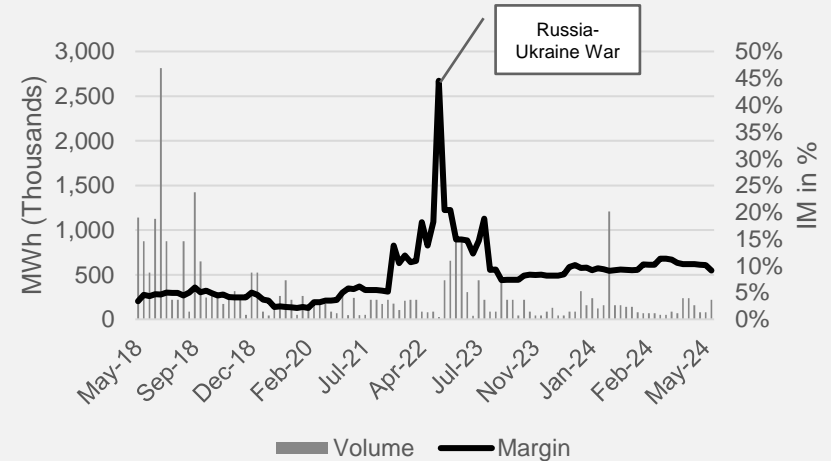
Long-term hedging in Spanish Power

Volume and Number of Deals



- Cal+10 went live in H2 2021, however long-term hedging stagnated due to Spanish regulatory intervention and the energy crisis in 2022
- In 2023 **deal flow and volumes rebounded** in line with recovery of EU power markets
- **2024 YTD** deal flow is already nearly reaching that of 2023

Volume and Initial Margin



- Initial margin values reflect recent volatility and have therefore reduced in line with **return to stability** in European power markets.
- Stable IM levels contributed to renewed growth and interest in long-term hedging.

EEX Guarantees of Origin Futures

Introducing GO futures at EEX

EEX Group is serving the needs of the GO market



Reliable mechanisms for GOs strengthen trust through transparency and accelerate the acceptance of renewable energy.

EEX Group operates the entire value chain for GO markets: registry, trading/auctioning and settlement with its group companies (Grexel, EEX, EPEX Spot, ECC)

Guarantees of origin and the register services are a central pillar of EEX’s efforts to support the energy transition by increasing transparency and the confidence of market participants in renewable energies.

- **Grexel** is the leading registry provider in Europe and provides registry solutions mostly for GOs in more than 20 countries
- **EPEX SPOT** operates Pan-European power GO spot auctions, held on a monthly basis.
- **EEX** is the French issuing body for power and biogas GOs, also operating the associated primary auctions.
- **EEX in Cooperation with IncubEx** will soon offer EEX GO Futures for trading.

Introducing GO futures at EEX

8 reasons to trade GO futures at EEX

1



Platform

Leverages EEX platforms incl. GO spot auctions & registry services
 Most liquid power market in Europe
 Listed alongside European Carbon Allowance futures and options

2



Products

First mover in GO futures products
 Standardized contract terms (anonymity on exchange)
 Pooled liquidity with generic and specific technologies

3



Margining

Credit enhancement from OTC
 Capital efficiencies inc. potential cross-margin benefits

4



Price quality

Public price transparency vs OTC market

5



Market access

Cleared OTC transactions via brokers
 Electronic orderbook access by leading trading platforms

6



STP

Efficient straight-through processing

7



Participants

Large and diverse client base across power, gas & carbon

8



Customer support

Strong customers focus

Thank you!

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› pxe

Part of EEX Group



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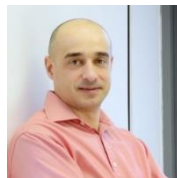
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› nodalclear

› grexel

› pxe