



Carbon markets report 2024

Webinar, 24 October 2024

Introduction

ESMA EU ETS mandate

- In 2023 the revised EU ETS Directive was adopted, including a new monitoring mandate for ESMA (Art.10(6)).
- ‘ESMA shall regularly monitor the integrity and transparency of the European carbon market, in particular with regard to
 - i. market volatility and price evolution,
 - ii. the operation of the auctions,
 - iii. trading operations on the market for emission allowances and derivatives thereof, including over-the-counter trading, liquidity and the volumes traded,
 - iv. and the categories and trading behaviour of market participants, including positions of financial intermediaries.’

Introduction

Functioning of the EU ETS market

Annual EU
ETS cycle

Free allocation

A decreasing
number of
allowances is
allocated for
free to specific
sectors

Trading

Compliance entities and other non-financials trade
with investment firms and other financials in
secondary markets (mainly derivatives) to source
emission allowances

Auctions

Allowances are auctioned at regular intervals

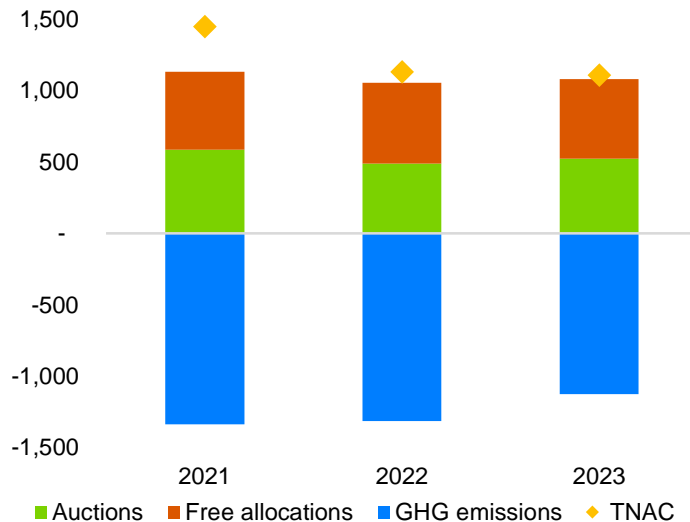
Surrender

Entities within scope
have to '*surrender*'
allowances to cover
GHG emissions

Market volatility and price evolution

Prices and volatility declined

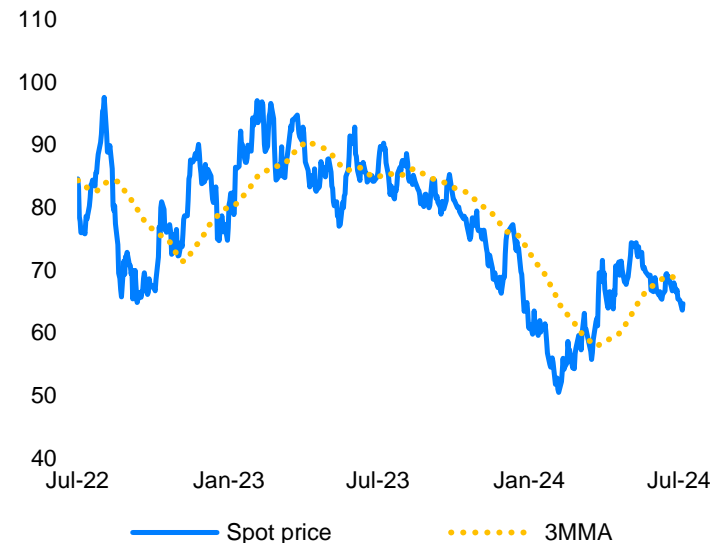
EUA supply and demand



Note: Annual supply (free allocations and auctions) and demand (GHG emissions) of EUAs, in metric tonnes of CO2. TNAC=Total Number of Allowances in Circulation.

Sources: European Commission, ESMA.

EUA spot prices (€/tCO2)



Note: Daily spot price of EU emission allowances. 3MMA= three-month moving average.

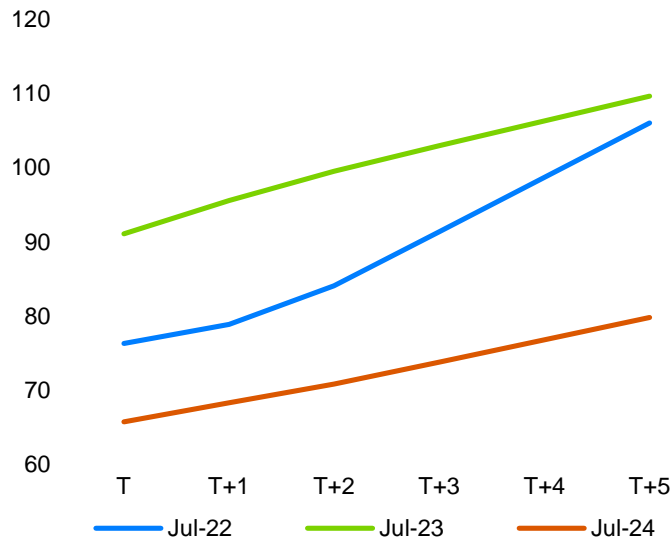
Sources: Refinitiv EIKON, ESMA.

- In 2023 EUA prices decreased from EUR 100/tCO2 to EUR 80/tCO2 driven by weak demand factors and increase in supply
- Volatility trended down with smaller peaks due to price declines

Market volatility and price evolution

Forward curve shifted and flattened

EUA forward curve



Note: Forward curve of December futures contracts on EU emission allowances traded on ICE Endex.
Sources: Refinitiv EIKON, ESMA.

EUA cost-of-carry (5y basis)



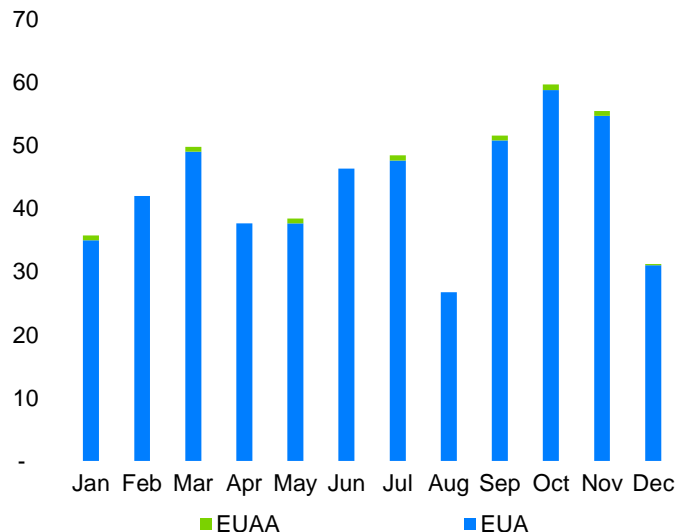
Note: Absolute and relative 5-year forward spread of EU emission allowances, calculated as difference between front year and 5-year futures.
Sources: Refinitiv EIKON, ESMA.

- The EUA forward curve shifted down, in line with spot prices.
- The EUA curve also flattened since 2022, driven by muted demand and higher yields

Operation of auctions

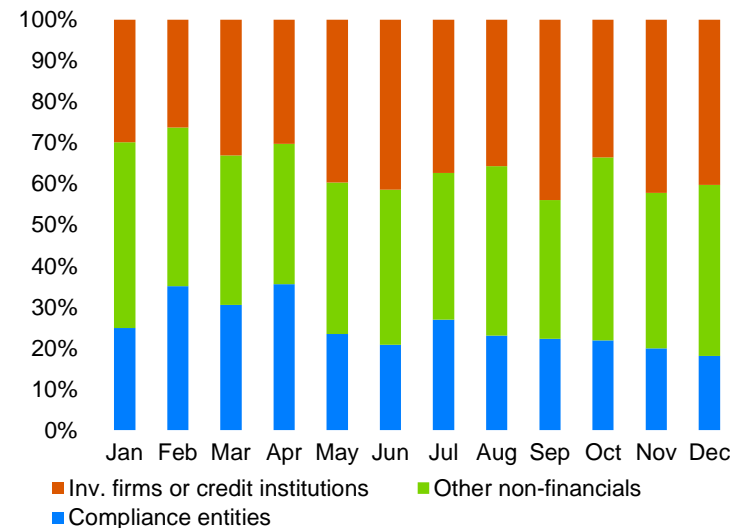
Increase in auctioned volumes

Monthly auctioned volumes



Note: Number of auctioned European emission allowances (EUA) and European aviation allowances (EUAA), in million.
Sources: Bafin, ESMA.

Volumes bought by sector



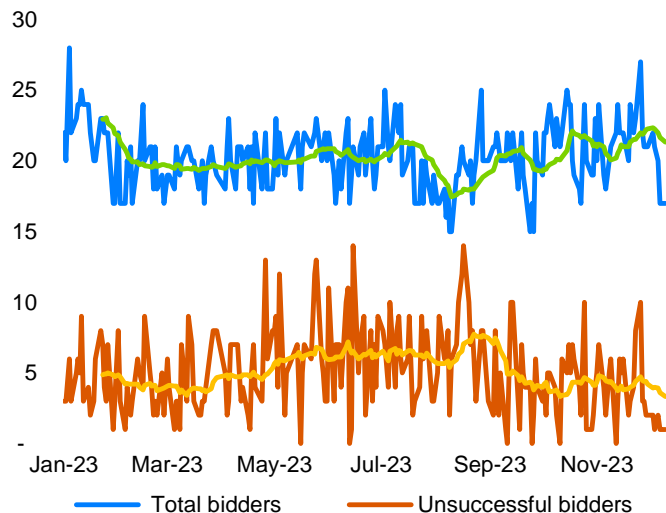
Note: Distribution of auctioned European emission allowances (EUA) by classification of auction participants.
Sources: Bafin, ESMA.

- 520 million EUAs and 6mn EUAAs auctioned in 2023 (+7% yoy)
- Compliance entities and other non-financials were the main buyers (combined) in primary markets

Operation of auctions

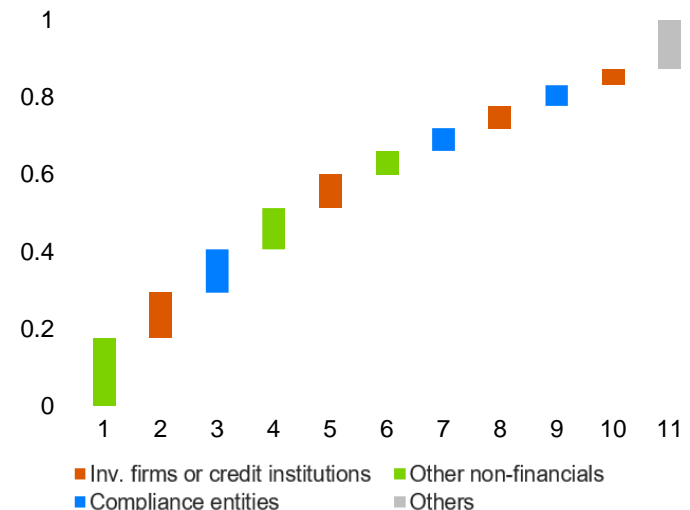
Auction markets remain concentrated

Number of auction participants



Note: Total number of bidders and number of unsuccessful bidders in auctions of European emission allowances (EUA) and 1-month moving averages.
Sources: EEX, ESMA.

Annual share of top 10 participants

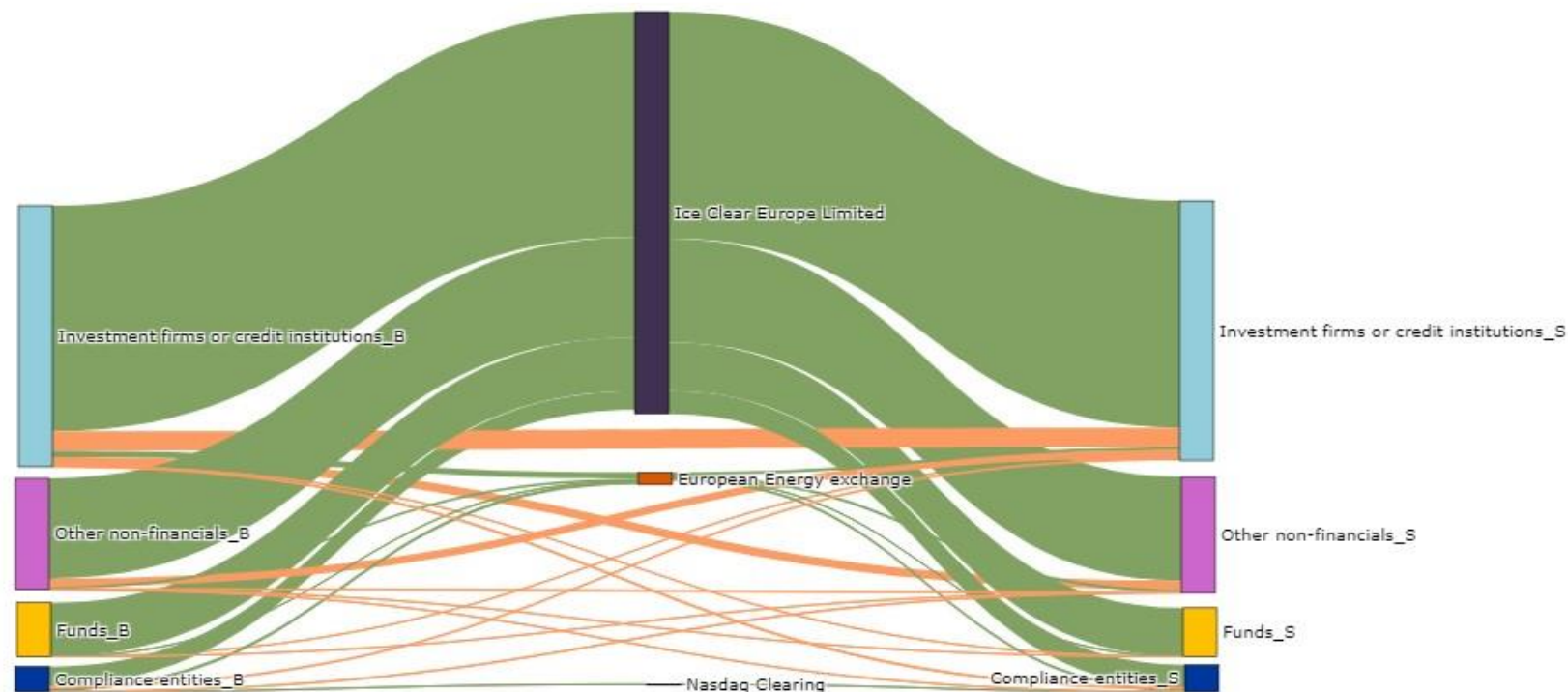


Note: Top-10 auction participants by share of annual auction volume of European emission allowances (EUA).
Sources: Bafin, ESMA.

- Only 44 entities participated in EUA auctions in 2023 (15-25 per auction) as EU ETS operators favour other EUA acquisition strategies
- All EUA auctions were oversubscribed
- Top ten auction participants purchased almost 90% of EUAs

Trading operations

Overview of EUA trade flows



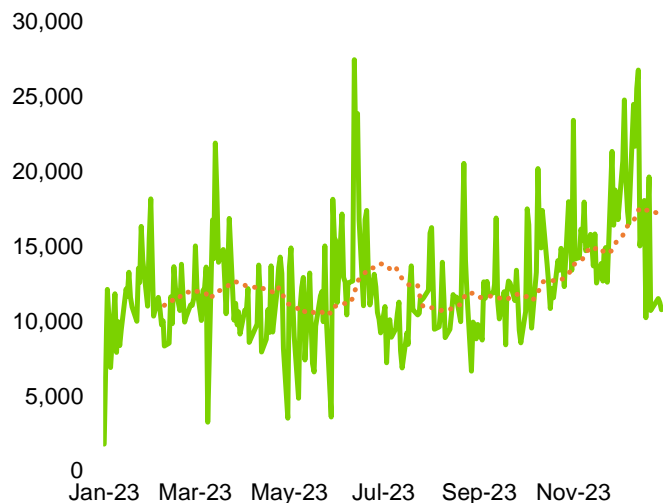
Note: Trading activity by counterparty sector on and off-exchange. Flows are proportional to tonnes of CO2 equivalent emissions exchanged. Orange lines represent off-exchange trading, while green lines are for on-exchange. _B indicates that the counterparty is in the buy leg of the transaction. _S indicates that the counterparty is in the sell leg of the transaction. Sources: MiFIR, ESMA.

- Most EUA transactions executed by investment firms and banks
- ICE captures the vast majority of volumes traded on-exchange
- OTC trading accounts for a limited share of the total

Trading operations

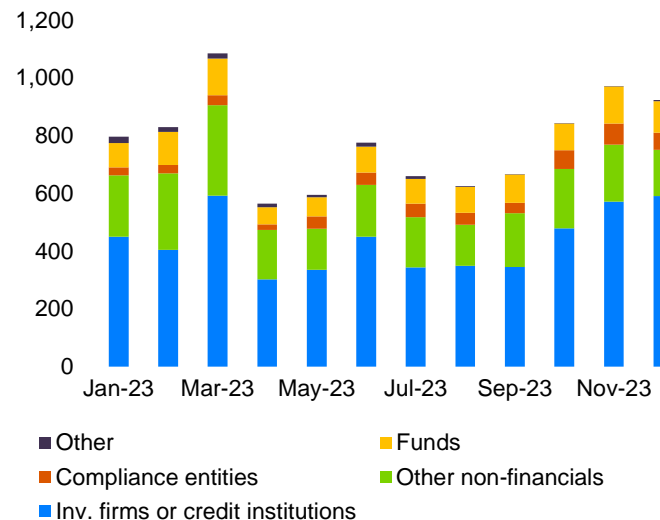
Stable on-exchange volumes

Daily number of transactions



Note: Daily number of on-exchange buy transactions. 30/days moving average in orange.
Sources: MiFIR, ESMA.

Volumes by counterparty sector



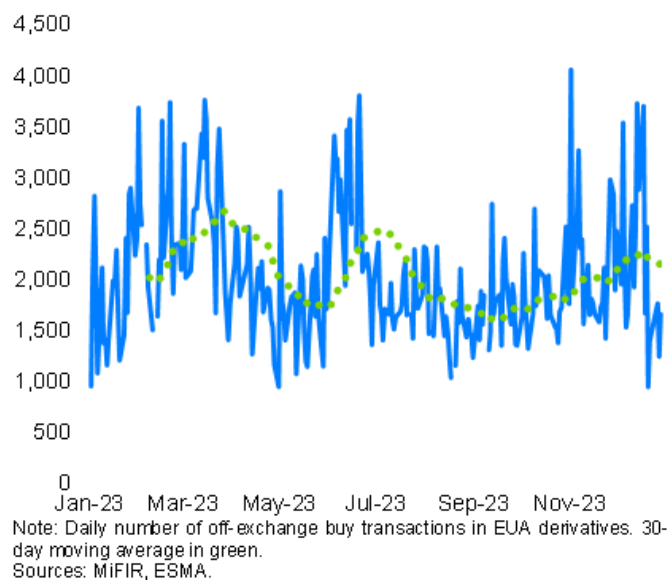
Note: Monthly trading volumes by counterparty country, in million of tonnes of CO2-equivalent emissions
Sources: MiFIR, ESMA.

- Total on-exchange volumes of EUR 648 bn (80% futures) through 3.2mn trades, including 40% from trades on futures spreads (e.g. maturity)
- Increased activity around expiry date of most liquid futures contracts (December and March) and EU sustainable finance package in June 2023
- Investment firms and banks account for 65% of trading volumes

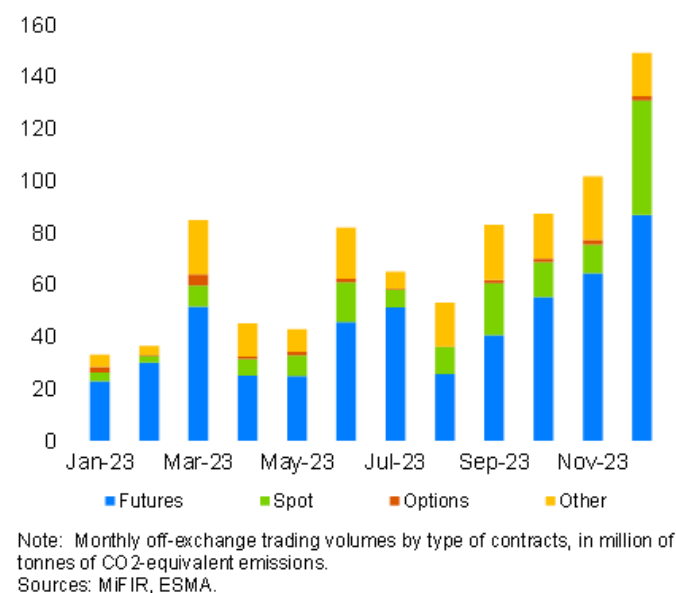
Trading operations

Year-end increase in OTC trading volumes

Daily number of transactions



Volumes by counterparty sector

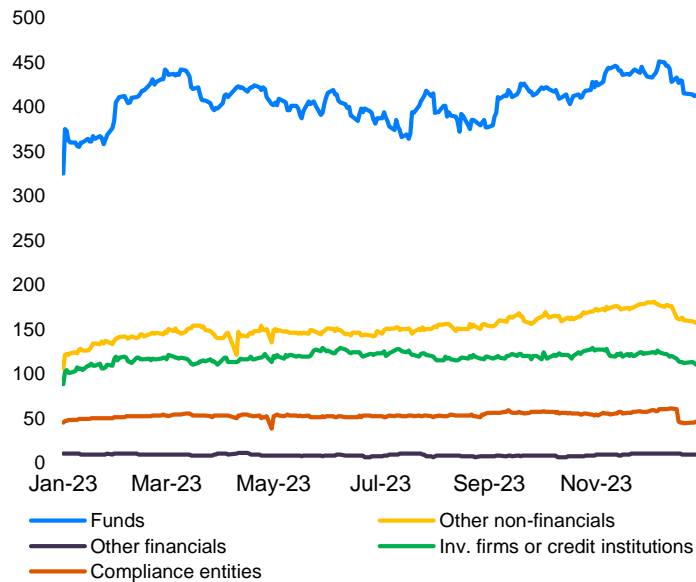


- Total off-exchange volumes of EUR 72.5 bn through 524,000 trades
- Volumes peaked in December, including large increases in spot and options trading
- High correlation (51%) with on-venue trading suggests some interconnection between on and off-exchange markets

Derivatives Positions

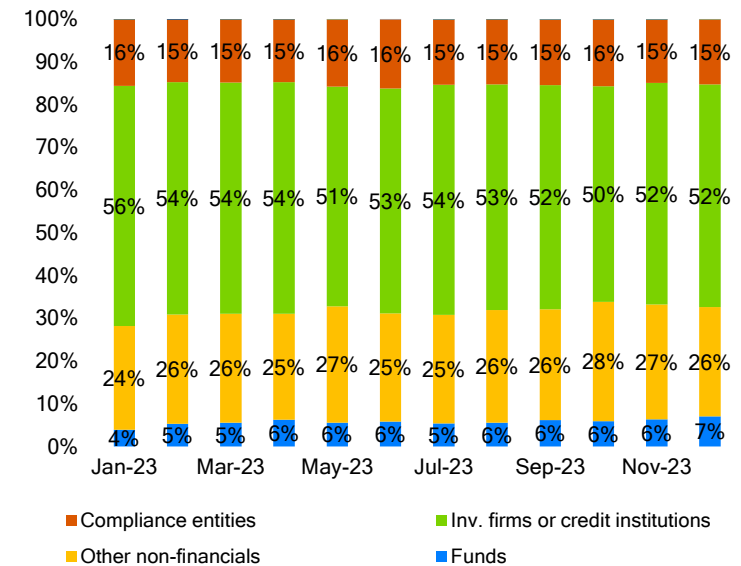
Most positions held by banks and investment firms

Number of position holders by sector



Note: Number of position holders in EUA derivatives, by counterparty sector.
Sources: ICE Endex, EEX, Nasdaq Oslo, ESMA.

Share of positions held by sector



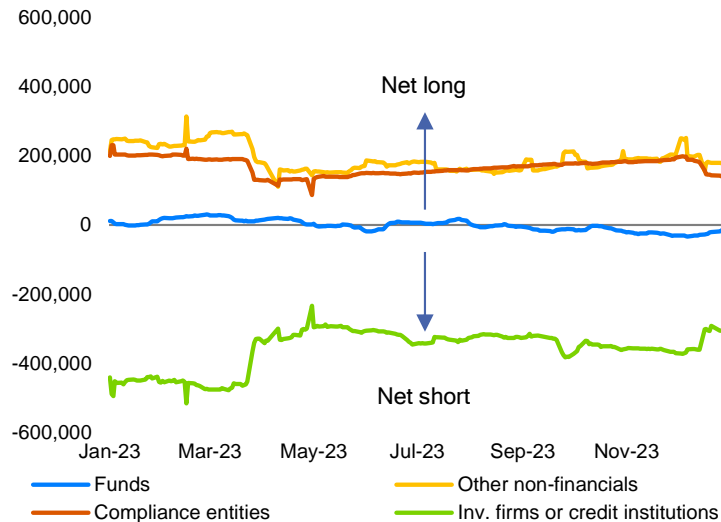
Note: Share of gross positions in EUA derivatives by counterparty sector.
Source: ICE Endex, EEX, Nasdaq Oslo, ESMA.

- On average 783 EUA derivatives position holders per day in 2023
- Around half of these were funds, holding 5-6% of all positions
- Investment firms and credit institutions held 56% of derivatives positions

Derivatives positions

Inv. firms short, compliance firms long

Net positions by sector



Note: Number of net positions in EUA derivatives held by counterparty sector, in lots (1,000 allowances).

Sources: ICE Endex, EEX, Nasdaq Oslo, ESMA.

Net positions held by funds



Note: Number of position in EUA derivatives held by funds, in lots (1,000 allowances).

Sources: ICE Endex, EEX, Nasdaq Oslo, ESMA.

- Market organisation unchanged: compliance entities and other non-financials buy EUAs from investment firms and banks
- Funds turned increasingly net short in 2023 as EUA prices declined

Conclusions

Main findings

- In 2023 EUA price softened and volatility remained contained, driven by weak demand factors and a temporary increase in supply
- EUA auctions were concentrated and oversubscribed as EU ETS operators favour alternative acquisition strategies.
- Futures dominate on-exchange trading, with trades on spread accounting for a large share of trading. OTC trading share remains limited. Activity in both segments increases around expiry date of most liquid futures contracts.
- Net EUA derivatives positions largely unchanged compared with 2022, except investment funds which turned net short in 2023



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