



EEX, the EU ETS and the maritime sector

20 September 2023 – Christian Fleischer

eex group

In cooperation with

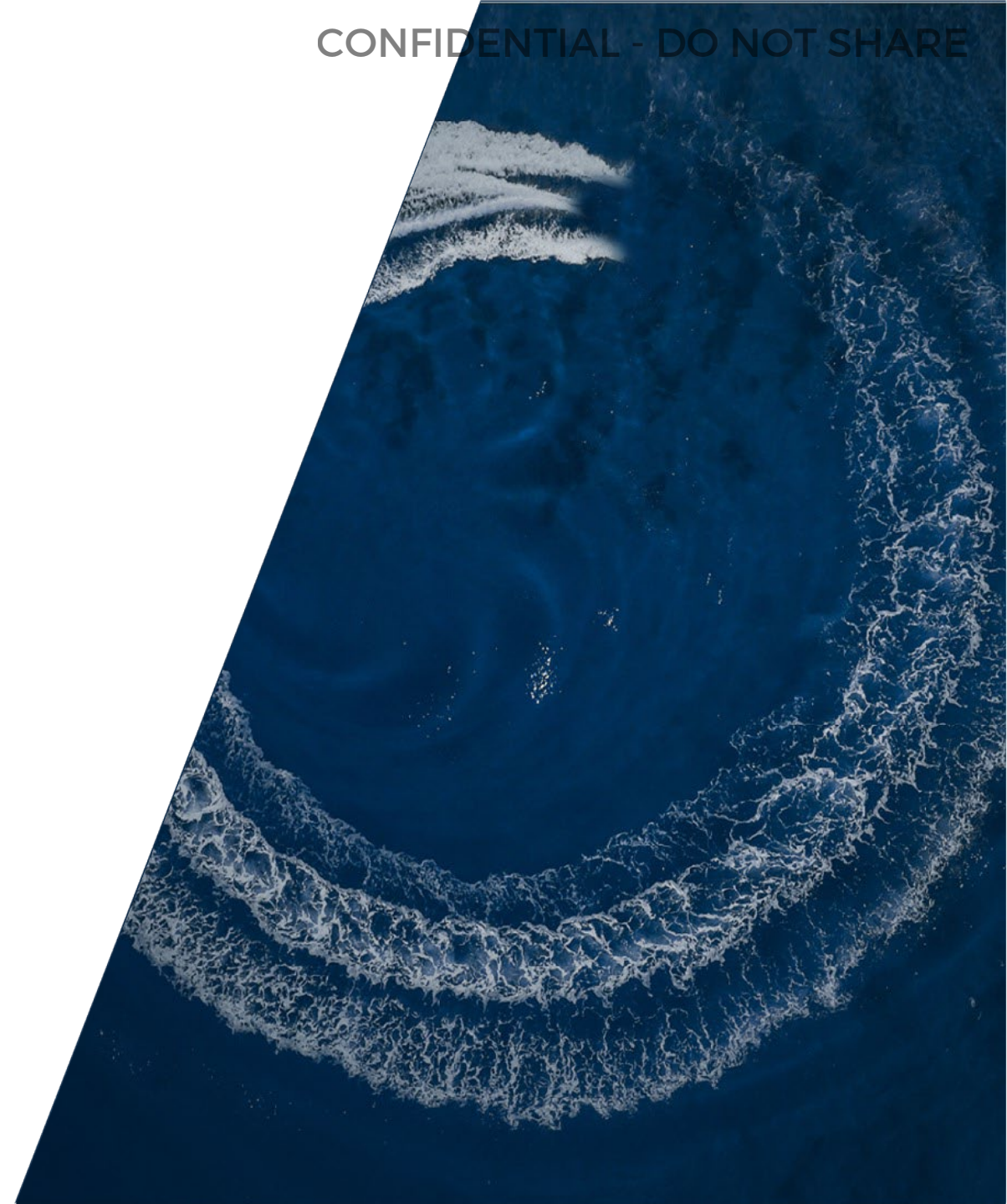


CONFIDENTIAL - DO NOT SHARE

Agenda

Today we will cover the following

- 01** What is EEX
- 02** EU ETS Intro
- 03** EU ETS Maritime Sector extension
- 04** Ways to access the EU ETS
- 05** EEX Emissions markets
- 06** Admission options

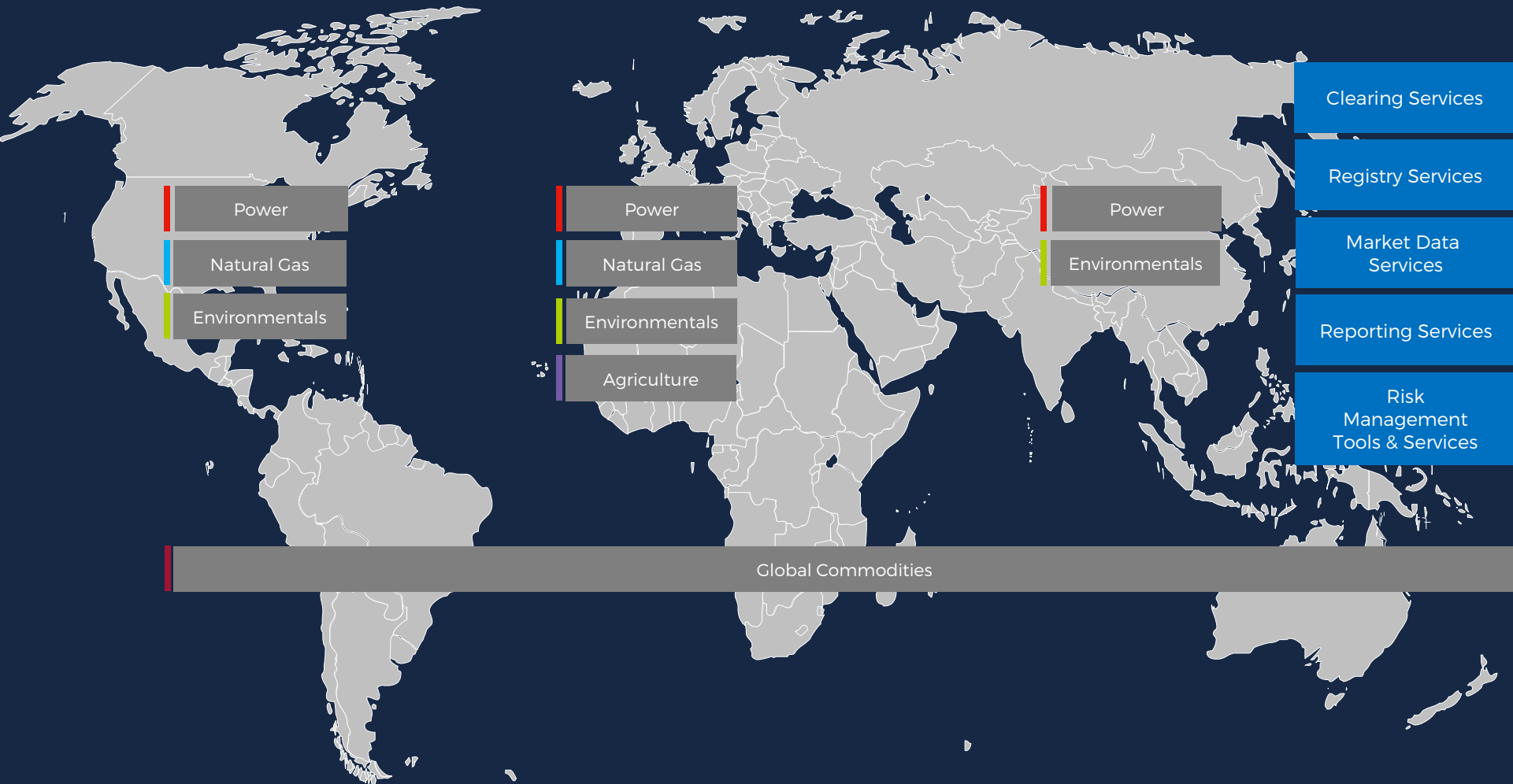


What is EEX



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.



EEX Group products – overview

Power

EEX Group is the #1 power exchange worldwide, operating on the Power Spot and Derivatives Markets.

- > eex
- > nodal
- > eexasia
- > epexspot

Natural Gas

EEX is the leading gas spot exchange and developing its derivatives business.

- > eex
- > nodal

Environmentals

EEX serves global carbon markets such as EU ETS, North America and New Zealand.

- > eex
- > nodal

Global Commodities

Our 2022 trading results confirmed EEX Group's position as a major force in global freight trading.

- > eex
- > eexasia

Agriculture

EEX offers a broad portfolio of dairy futures as well as processing potato futures.

- > eex

EU ETS Intro



EU ETS Intro – A cap and trade system

The EU ETS is a cornerstone of the EU's policy to combat climate change and its key tool for reducing greenhouse gas emissions cost-effectively. It is the world's first major carbon market and remains the biggest one.

The EU Emissions Trading System

- operates in all EU countries plus Iceland, Liechtenstein and Norway (EEA-EFTA states),
- limits emissions from around 10,000 installations in the energy sector and manufacturing industry, as well as aircraft operators operating between these countries and departing to Switzerland and the United Kingdom,
- covers around 40% of the EU's greenhouse gas emissions,
- will also cover emissions from maritime transport from 2024.

A 'cap and trade' system

- A cap is set on the total amount of certain greenhouse gases that can be emitted by the operators covered by the system.
- The cap is reduced over time so that total emissions fall.
- Within the cap, operators can buy or receive emissions allowances, which they can trade with one another
- The price signal incentivises emission reductions and promotes investment in innovative, low-carbon technologies

EU ETS Intro – Gases and Sectors

The EU ETS covers the following sectors and gases

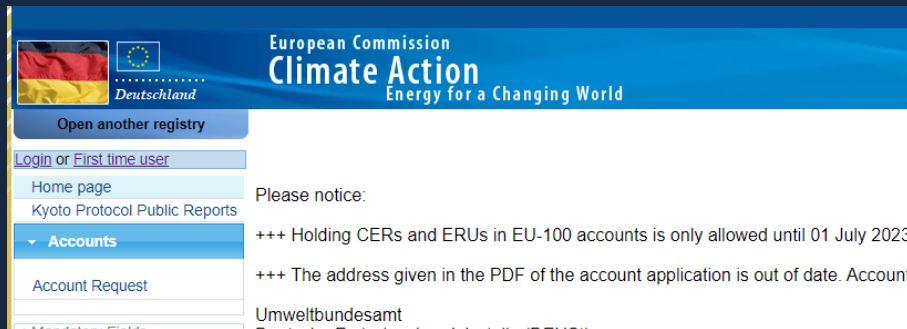
- carbon dioxide (CO₂) from
 - electricity and heat generation,
 - energy-intensive industry sectors (i.a. oil refineries, steel, iron, aluminium, metals, cement, lime, glass, ceramics, pulp and chemicals)
 - aviation within the European Economic Area and departing flights to Switzerland and the United Kingdom;
 - maritime transport
- nitrous oxide (N₂O) from
 - production of nitric, adipic and glyoxylic acids and glyoxal;
- perfluorocarbons (PFCs) from
 - the production of aluminium.

Participation is mandatory for companies in these sectors, but:

- in some sectors, only operators above a certain size are included,
- certain small installations can be excluded if governments put in place equivalent alternative measures,
- in the aviation sector, currently only applying to flights between airports located in the EU

Union Registry

High level information on the physical backbone of the EU ETS



What is the Union Registry?

- Centralized single EU registry operated by the EU Commission
- Covers all countries participating in the EU ETS
- Online database that holds accounts for stationary installations and for aircraft operators and soon also shipping companies.

What does the Registry record?

- National implementation measures
 - a list of installations in each EU country
 - any free allocation to each of those installations (if any)
- Accounts of companies or individuals holding such allowances
- Transfers of allowances ("transactions")
- Annual verified CO2 emissions from compliance entities
- Annual reconciliation of allowances and verified emissions, where each company must have surrendered enough allowances to cover all its verified emissions.

EU ETS Maritime Sector Extension



Political overview

The EU signed off on including maritime emissions in the EU ETS as of January 2024

2021: European Commission proposes the Fit for 55 Package

Accelerating the maritime sector’s decarbonisation by:

- 1. Including its emissions into the EU ETS
- 2. Setting GHG intensity targets and fuel standards
- 3. Eliminating fuel tax exemptions

2023: Council and European Parliament signed off on ETS review

- Changes will start to apply as of 2024.
- Delegated and implementing rules such as the Auctioning or Registry Regulation will be reviewed in the next months.
- Member states will implement the necessary provisions.



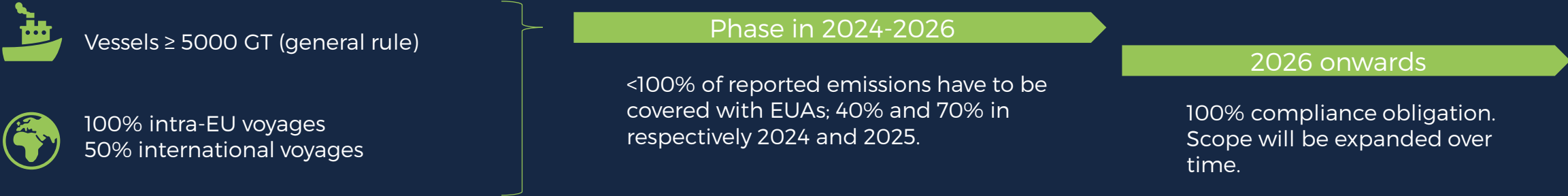
Political overview #2

Summary of decisions under the EU ETS Directive for the maritime sector

European Emissions Trading after the review



What is the scope and how is it introduced?



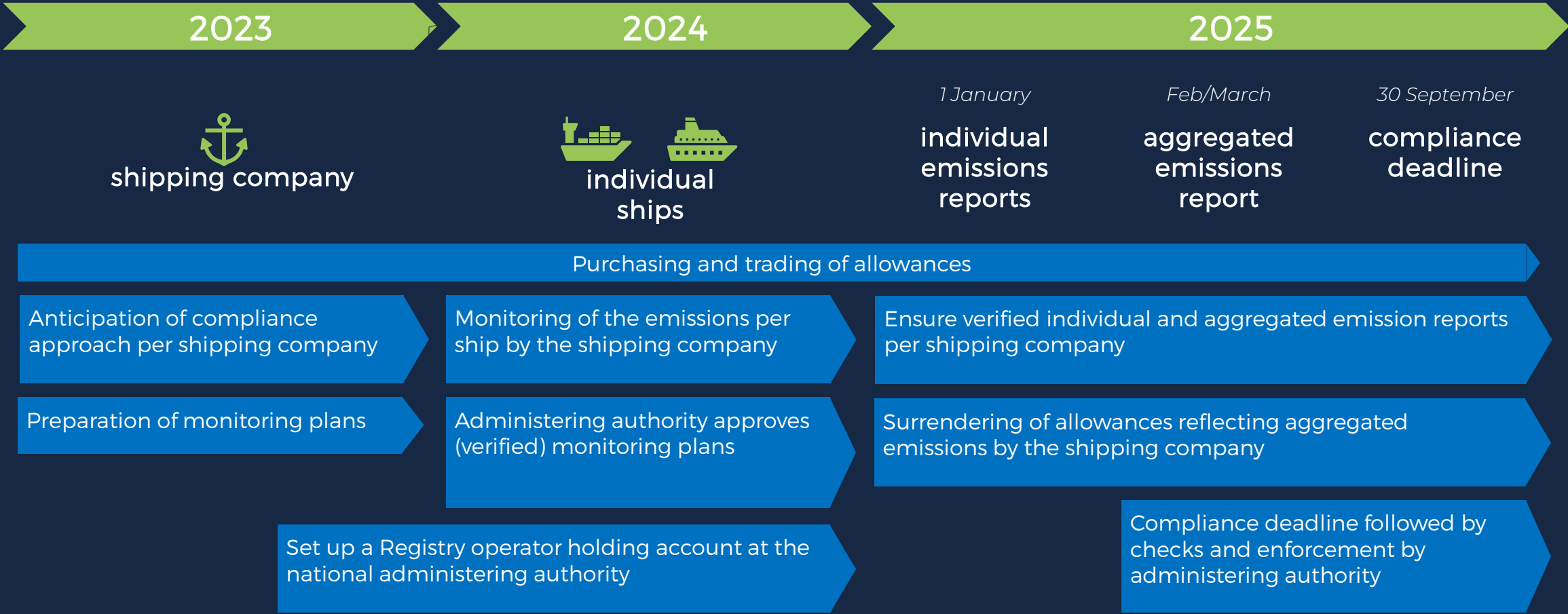
How does it work?

The shipping company is covered by the compliance obligation. This entity must eventually surrender EUAs in their Registry Accounts. They set up this account with their national administering authority.

The shipping company will be entitled to claim reimbursement for the costs of the EUAs from the entity that is responsible for the emissions of the ship.

Political overview #3

High level picture of the first compliance cycle for shipping companies under the EU ETS

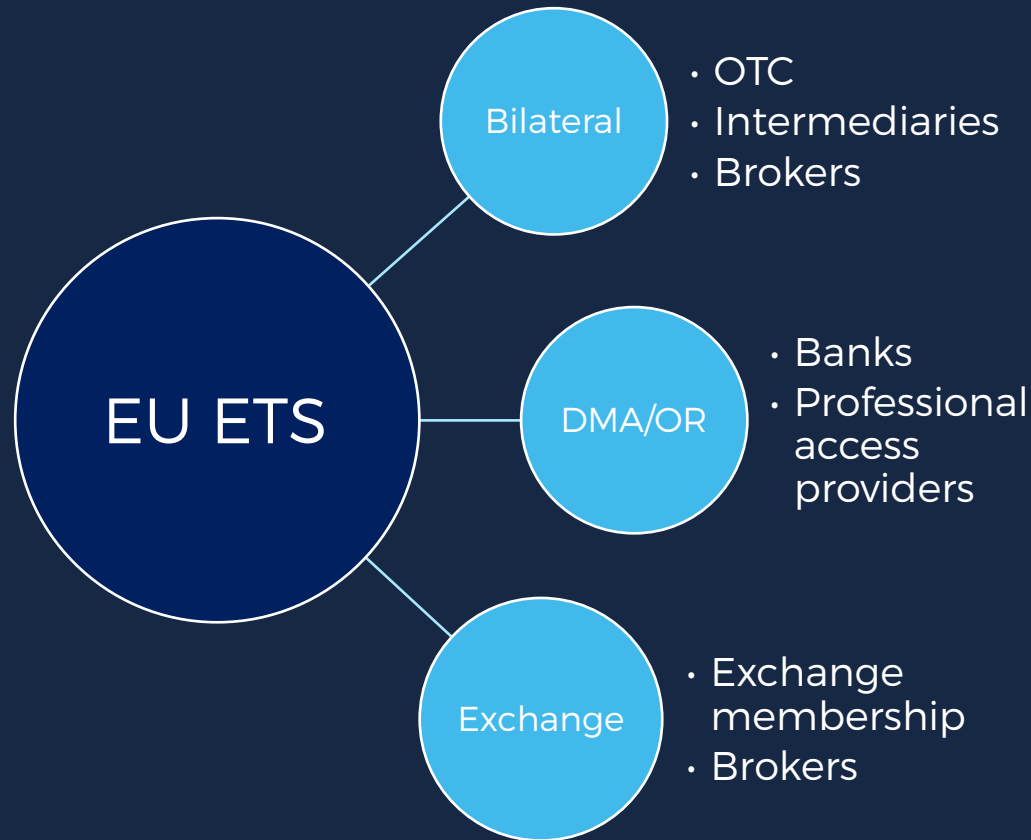


Ways to access the EU ETS



Ways to access the EU ETS

Which options may players from the shipping sector use to access the EU ETS directly or indirectly?



Important aspects

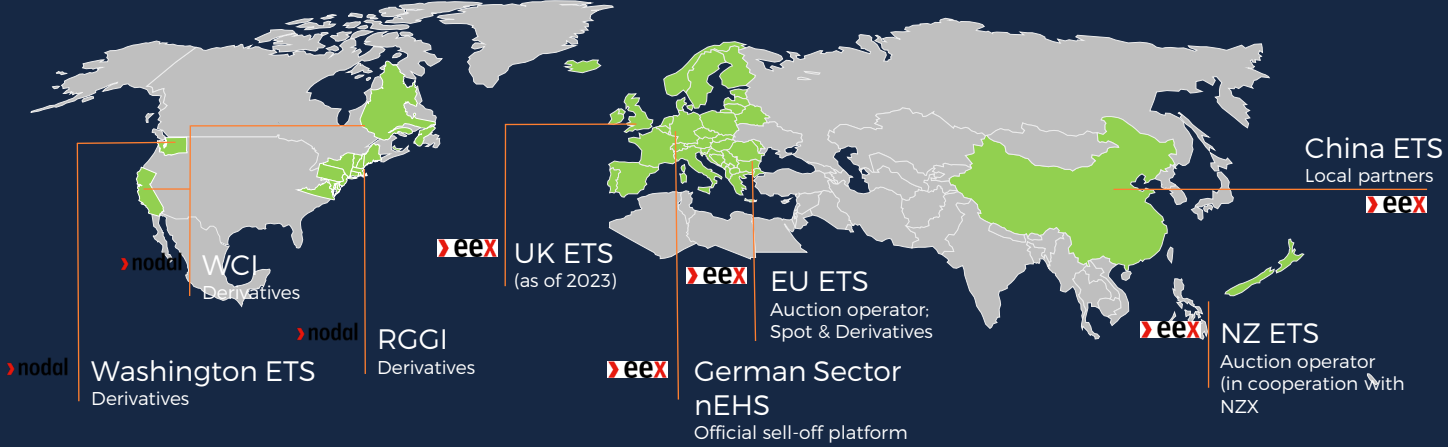
- Distance to the EU ETS
- Extent of compliance obligation
- KYC criteria
- Market access and transaction fees
- Cash sensitivity
- Preference for cleared activity
- Access to union registry
- Market access/onboarding effort

EEX Emissions markets



Carbon Markets at EEX Group

We offer infrastructure, auctions, registry and trading for carbon schemes and look back on a proven track record of successful cooperation's with governments, regulators and traders.

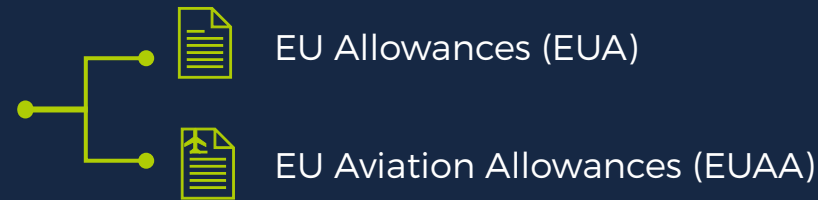


compliance markets	 EU ETS	<ul style="list-style-type: none"> - Exclusive auction hosts for all EU governments, operating auctions on almost daily basis - Secondary Market (Spot, Futures, Options)
	 German nEHS	- Official sell-off platform for German Fuel ETS (transport, heat sectors)
	 UK ETS	- Secondary Market in preparation
	 Western Climate Initiative (WCI)	- Futures & Options, as well as other Environmental Markets (RECs, RINs, SO2/NOx)
	 RGGI	- Futures & Options for the Regional Greenhouse Gas Initiative
	 Washington ETS	- Futures & Options, launched in December 2022
	 NZ ETS	- Auction operator in partnership with New Zealand Exchange (NZX)
	 China ETS	- Cooperation with partners (CBEEEX Beijing, CNEEEX Shanghai, CEEX, GFEX Guangzhou)
 Voluntary Carbon Market	<ul style="list-style-type: none"> - Dedicated VCM product suite (CORSlA-eligible, Nature-based, Removal, GER basket contract) - listed at Nodal (since June 2022) and EEX (in the future) 	

EU ETS – Product Overview

Transact on the leading exchange for European power in carbon emission allowances under the EU Emissions Trading Scheme (ETS), the largest environmental market in the world.

Primary & Secondary Market



Products

- Comprehensive product suite along the curve
- Auctions and continuous market (spot, futures and options), incl. relevant spread trading

Service

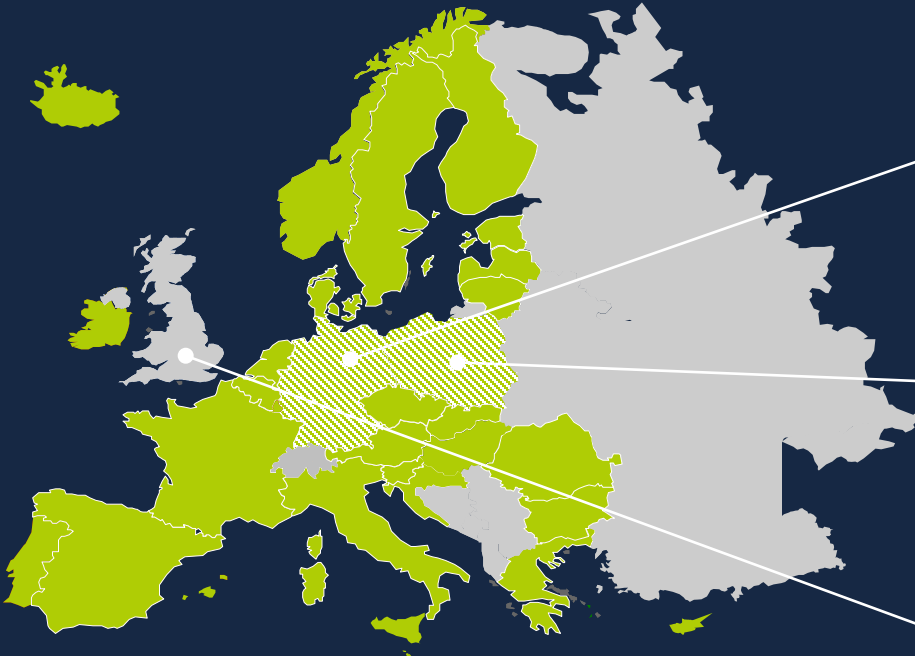
- Efficient and free delivery process
- Global trading audience
- All major brokers connected
- Multiple connectivity solutions
- Competitive transaction fees and schemes

EU ETS – Primary Market

EEX is the central auction platform under the EU Emissions Trading Scheme (ETS)

EU auctions

- Auctions for 25 EU Member States plus 3 EEA/EFTA countries (Norway, Iceland, Liechtenstein) plus Innovation Fund and Modernisation Fund
- **~361 million allowances in 2023**



DE auctions

- Auctions on behalf of Germany
- **~91 million allowances in 2023**

PL auctions

- Auctions on behalf of Poland (currently using the EU common auction platform)
- **~65 million allowances in 2023**

UK auctions

- For generation of electricity in Northern Ireland
- **~1 million allowances in 2023**

 EU common auction platform

 Opt-out

EU ETS – Primary Market

Auction participation and eligibility

Why primary auctions?

- Default method of allocating allowances
- Open, transparent, harmonized and non-discriminatory
- Mostly 5 days/week (100% of EU auction volume)
- Also, secondary market available on one single exchange
- EEX advantages:
 - Direct and indirect access options
 - Strong customers focus and personal assistance
 - Fair and transparent price formation

Who is eligible to participate?

- EU Auctioning Regulation specifies:
 - Compliance buyers (operators of stationary installations, aircraft operators and soon shipping companies)
 - Investment firms and credit institutions
 - Business groupings of compliance buyers
 - Other intermediaries specifically authorised by the home Member State
- These participants must fulfil admission requirements according to EU and EEX rules, i.a.:
 - Establishment in the EU (except for compliance buyers!)
 - Hold a nominated holding account in the Union registry
 - Hold a nominated bank account

EU ETS – Primary Market

Auction process and clearing price - Example: Auction for 1 million EUAs

Order book

after close of bidding window phase

Bidder	Price	Volume
A	82.00 €	500,000
B	86.00 €	600,000
C	84.00 €	300,000
D	85.00 €	800,000
E	85.00 €	500,000
F	95.00 €	10,000
Total		2,710,000



Order book

sorted by price

Bidder	Price	Volume
F	95.00 €	10,000
B	86.00 €	600,000
D	85.00 €	800,000
E	85.00 €	500,000
C	84.00 €	300,000
A	82.00 €	500,000
Total		2,710,000

Allocation
10,000
600,000
*390,000
0
0
0
1,000,000

- Bids are sorted in descending order of the price bid
- Tied bids are sorted through random selection according to an algorithm
- Bid volumes are added, starting with the highest bid
- The price at which the summed-up bid volumes match or exceed the volume of allowances auctioned sets the auction clearing price for all successful bidders
- In the example the volume is allocated at an auction clearing price of 85.00 € per allowance
- Bidder “D” sets the price for all bidders, being the last successful buyer
- More than one bidder on clearing price: *random distribution of rest volume to one bidder

EU ETS – Secondary Market

EEX offers all major trading instruments in the EU Emissions Trading Scheme (ETS)

Since 2005 EEX is operating trading in Emissions secondary markets. By that, it provides all necessary tools for market players to maintain their trading and hedging needs.

Spot - trading with T+1 delivery

EU Allowances (EUA)
EU Aviation Allowances (EUAA)

Futures - trading with T+2 delivery after expiry (+ spreads)

EU Allowances (EUA)
EU Aviation Allowances (EUAA)

Options - trading on EUA Futures

EU Allowances (EUA)

 TRADING TECHNOLOGIES



- State-of-the-art trading infrastructure
- Covers all EEX Futures plus Emissions spot
- Fully browser-based, platform independent
- Automatic and Algo trading, individual spreads

(all other major ISVs supported)

EU ETS – Secondary Market

EUA Front Dec Price Development



Admission options



Ways to access EEX – EEX membership options

EEX offers three different direct membership types that provide access to EU ETS products

Full Membership

- All EEX products, excl. CEGH VTP
- € 37,000 p.a.

Environmental & Emerging Markets

- Inter alia, all Envi products (auction, spot and derivatives)
- € 5,000 p.a. (€ 2,500 p.a. w/o derivatives)

Auction-only

- Only EU ETS primary auction
- Procurement/buying only
- Free access

Ways to access EEX – Admission requirements

There are various conditions to be met on the way to trading on the exchange



- 24 Banks currently recognised by ECC as GCM
- Not in scope of EEX admission but a requirement for ECC
- Individual membership requirements
- Bespoke commercial framework
- Contact details on ECC website

- NCM agreement (trilateral) with a Clearing Bank and ECC
- KYC process
- CM accepting the clearing of Emissions market

- Personal reliability
- Professional qualifications of the management
- Liable equity of at least € 50.000
- At least one examined trader
- Technical connection
- ECC membership



Thank you



Christian Fleischer
Head of Sales Environmental Markets
christian.fleischer@eex.com

veson.com

Internal

CO₂ Cost Example



Richards Bay to Rotterdam

- Voyage assumptions:**
- 16,484 nautical miles (roundtrip)
 - 14 knots laden / 15 knots ballast
 - 150kt thermal coal CFR ARA
 - 60mt/day HFO at sea
 - Emissions factor 3.114 (HFO)

Estimations (round trip):

Laden: 24.5 days x 60mt HFO x 3.114	≈ 4,578 mt CO ₂
Ballast: 23 days x 60mt HFO x 3.114	≈ 4,297 mt CO ₂
50% of inbound and outbound CO ₂	≈ 4,437* mt CO ₂
EUA price (DEC 2024): 89.10** EUR/tCO ₂	≈ 98.22 USD/tCO ₂
Round trip CO ₂ cost in 2024 (40% obligation)	≈ USD 174,320

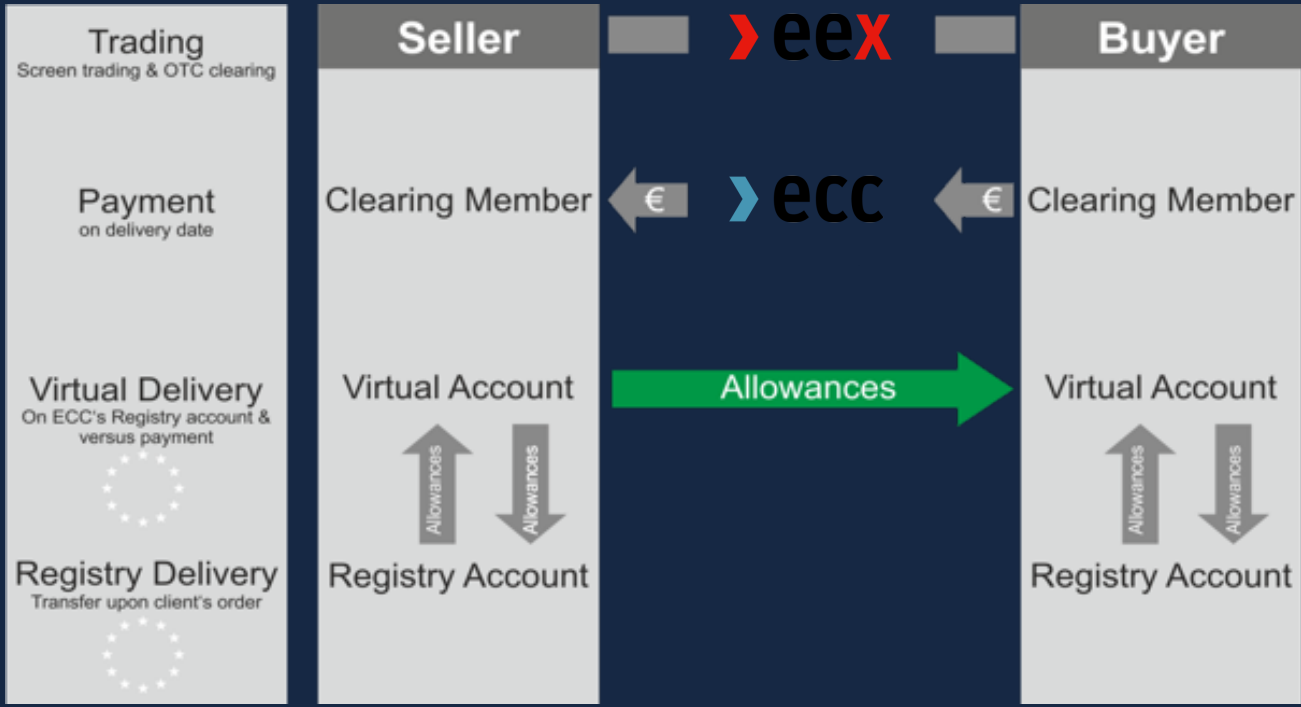
*Fuel consumption at load/discharge port excluded
 **EEX EUA Futures daily settlement price for Dec 24 04/05/23

	2024	2025	2026
CO ₂ volume within scope	3,550mt	6,212 mt	8,875mt
EEX EUA Futures Price* Converted to USD @ 1.10	98.01 USD/tCO ₂	102.48 USD/tCO ₂	106.73 USD/tCO ₂
Round Trip Cost	347,935 USD	636,605 USD	947,228 USD

*EEX EUA Futures daily settlement prices for Dec 24, Dec 25 & Dec 26 on 04/05/23

Seamless Trading & Settlement

Elimination of counterparty risk through clearing and settlement of transactions.



The setup of EEX's Emissions market ensures seamless trading for clients at all times – even at downtimes of the Union Registry clients can actively trade.