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## Index Description

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## 1. General

This document specifies the indices which are provided by European Energy Exchange AG (“EEX AG”) as well as their methodology. All indices provided by EEX AG are based on market data resulting from exchange trading at EEX or on other market information. In general, indices or individual values thereof are not exchange prices but are the result of mathematical calculations.

This document does not have in scope indices provided by EEX AG that qualify as benchmarks under Regulation (EU) 1011/2016 (“Benchmark Regulation”). Benchmarks are exclusively covered in the Benchmark Statement of EEX AG, which is available on the website of EEX AG ([www.eex.com](http://www.eex.com)).

Further, this document does not have in scope the calculation procedures of Daily Settlement Prices for derivatives or premiums for options that are tradable at EEX or EEX OTF. The methodologies for the determination of Daily Settlement Prices and option premiums are outlined in the Settlement Pricing Procedure, which is also available in its respective valid version on the website of EEX AG ([www.eex.com](http://www.eex.com)).

The final settlement prices of derivatives traded at EEX and EEX OTF are also out of scope of this document. Please refer to the respective Contract Specifications of EEX and EEX OTF.

EEX AG may at any time change the methodologies and parameters related to the calculation of indices. Changes become effective after they have been announced.

All times are Central European (Summer) Time (UTC+01:00 or UTC+02:00).

EEX, ECarbix, EGIX, EGSI, WECl and ZCFI are registered trademarks of EEX AG.

EEX AG provides all indices “as is”. EEX AG and any third party providing input data to the indices (“Data Provider”) make no representation and give no warranty, express or implied, regarding the indices, including (without limitation) in relation to their availability, suitability, quality, accuracy, timeliness, and/or completeness, and EEX AG and the Data Providers assume no liability in this regard. Any use of these indices is at the own risk of the user. Data Providers do not sponsor, endorse or recommend the indices provided by EEX AG.

## 2. Spot Market Indices

### 2.1 EEX NDI – EEX Next Day Index

The EEX Next Day Index for a specific market area is the volume-weighted average price of all trades in the respective EEX Day Spot Contract for a gas delivery day that are executed on the EEX Natural Gas Spot Market between 8.00 and 18.00 on the calendar day before the start of the respective delivery period of the contract (“Calculation Period”).

The following EEX NDI are provided by EEX AG:

- EEX PEG NDI for the market area PEG
- EEX ZTP NDI for the market area ZTP
- EEX ETF NDI for the market area ETF
- EEX CZ VTP NDI for the market area CZ VTP
- EEX PVB NDI for the market area PVB
- EEX TTF NDI for the market area TTF
- EEX CEGH VTP NDI for the market area CEGH VTP
- EEX THE NDI for the market area THE.

If less than four trades have been concluded in the relevant EEX Natural Gas Spot Contracts during the Calculation Period, the value of the respective EEX NDI for this day shall be equal to that of the corresponding EEX Natural Gas Spot EGSi.

### 2.2 EEX EGSi – EEX European Gas Spot Index

#### 2.2.1 EEX Day EGSi

The EEX Day EGSi for a specific market area is the volume-weighted average price of all trades in the respective EEX Day Spot Contract for a gas delivery day that are executed on the EEX Natural Gas Spot Market between 8.00 and 18.00 on the Exchange Day<sup>1</sup> before the start of the respective delivery period of the contract (“Calculation Period”). The values of an EEX Day EGSi for gas delivery days that are also included in an EEX Weekend Spot Contract, correspond to the volume weighted average price of all trades of this Weekend Spot Contract.

#### 2.2.2 EEX Weekend EGSi

The EEX Weekend EGSi for a specific market area is determined as the arithmetic mean of the values of the EEX Day EGSi of the gas delivery days Saturday and Sunday that are comprised by

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<sup>1</sup> The EEX Natural Gas Spot Market follows the official UK Bank Holiday calendar (<https://www.gov.uk/bankholidays>)

the respective calendar weekend.

### 2.2.3 EEX Week EGSi

The EEX Week EGSi for a specific market area is determined as the arithmetic mean of the values of the EEX Day EGSi of the gas delivery days included in the respective calendar week for that market area.

### 2.2.4 EEX Month EGSi

The EEX Month EGSi for a specific market area is determined as the arithmetic mean of the values of the corresponding EEX Day EGSi of the gas delivery days included in the respective calendar month for that market area.

### 2.2.5 Unavailability of Input Data

In the event of an unavailability of input data, the value of the EEX Day EGSi will be equal to the value of the corresponding EEX Natural Gas Spot EOD Index<sup>2</sup>. The same value will be used in the calculation of the Weekend, Week and Month EGSi.

### 2.2.6 Hubs for which EGSi is calculated and published

These EEX Day, Weekend, Week, and Month EGSis are provided by EEX AG:

- EEX PEG EGSi for the market area PEG
- EEX ZTP EGSi for the market area ZTP
- EEX ETF EGSi for the market area ETF
- EEX CZ VTP EGSi for the market area CZ VTP
- EEX PVB EGSi for the market area PVB

EEX AG further provides EGSis in relation to hubs where EEX offers financial futures with EGSi as the underlying (i.e. TTF, THE, and CEGH VTP). These EGSis qualify as benchmarks under the Benchmark Regulation and are described in the Benchmark Statement.

## 2.3 EEX EOD Indices

End of Day Indices (EEX EOD Indices) are primarily based on concluded trades and the EEX order book situation in the respective spot product. Only trades and orders which fulfil product or contract specific parameters within the Calculation Period or in special cases also before that period, are taken into account. These parameters include:

- Minimum quantity of traded contracts
- Minimum quantity of contracts per order
- Minimum duration of the cumulated valid best bid and best ask

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<sup>2</sup> Please note that this fallback procedure differs from the fallback procedure applicable to EGSi Benchmarks under the Benchmark Regulation. Further information in relation to the fallback procedure applicable to EGSi Benchmarks can be found in the Benchmark Statement.

- Maximum Spread per contract

The **Calculation Period** is the period during the trading hours, in which the relevant trades and order book situation are considered for the calculation of EOD Indices.

The **Maximum Spread** per contract is the maximum price range between buy and sell orders, specified for each contract. The spread to be applied depends on the market situation.

Based on trades and orders qualifying for consideration a **Theoretical Price** is calculated.

The Theoretical Prices are determined based on the calculation algorithms defined below. In this context, the underlying method depends on the number of valid trades and orders which fulfil the product-specific parameters. In principle, the prices that are taken into account can result from exchange trades, orders, fair values collected in a price committee (Chief Trader Procedure) and from data provided by other price sources.

Prices of trades that have been cancelled are not considered. EEX AG reserves the right to exclude individual trades, orders or fair values from consideration if those have been reflected the actual market situation at the time.

The following overview provides examples of possible scenarios and the corresponding calculation algorithms:

Orderbook situation	Calculation algorithm
There was at least one trade * There were suitable orders	Theoretical price = $0.75 * \text{AverageTradePrice} + 0.25 * \text{AverageMid}$
There was at least one trade * There were no suitable orders	Theoretical price = AverageTradePrice
There was no trade There were suitable orders	Theoretical price = AverageMid
There was no trade There were no suitable orders	The Theoretical Price can be established based on data of other price sources or on the Chief Trader Procedure.

\* EOD Indices based on EEX Natural Gas Spot market data: If there are three or more qualifying trades, only trades are considered.

The **AverageTradePrice** is the mean price of exchange trades during the Calculation Period.

The **AverageMid** is the arithmetic mean of the time weighted average best bid and the time weighted average best ask which fulfil the minimum order quantity. The time weighted average best bid (the average best ask) is the time weighted average from all highest buy orders (lowest sell orders) which lie within the limits of the Maximum Spread during the time window for the individual contract on the market, considering the period of their existence in the orderbook.

If there are no trades and orders fulfilling the product-specific parameters, EEX AG can determine the EOD Index based on data of the Chief Trader Procedure or other prices sources. Every trading participant can take part in the Chief Trader Procedure.



EEX AG provides a standardised form to all trading participants, who agree to provide a market price indication or estimates for the respective spot contracts. If required, EEX AG determines the EOD Index by calculating the arithmetic mean from all such market price indications after exclusion of outlier values (if any).

The result of the Theoretical Price calculation is validated against the actual market situation at the relevant time, if available. For the market plausibility check external price sources will be used, including prices from other trading venues, information from data providers and chief traders or prices from trades concluded via Trade Registration. Furthermore, especially in the case of having insufficient market data within the Calculation Period, trades and orders in direct temporal connection to the Calculation Period can be used for the market plausibility check. Upon validation, the Theoretical Price becomes the EOD Index.

### 2.3.1 EEX EOD Indices on EEX Natural Gas Spot Contracts

The EEX Natural Gas Spot Market EOD Indices are calculated for EEX Natural Gas Day and Weekend Spot Contracts for the market areas listed in the following table.

Parameter	Specification
Calculation period	17:15 – 17:30 on the last trading day of each contract
Minimum number of contracts traded	240 MWh/day
Products listed in MWh/day	10 contracts = 10 MW
Products listed in MW	10 contracts = 10 000 therms/day
Products listed in therms/day	
Minimum number of contracts per order	240 contracts = 240 MWh/day
Products listed in MWh/day	10 contracts = 10 MW
Products listed in MW	10 contracts = 10 000 therms/day
Products listed in therms/day	
Spread for the consideration of best bid and best ask	
EEX PEG	0,60 EUR/MWh
EEX TTF	0,40 EUR/MWh
EEX THE	0,40 EUR/MWh
EEX PVB	1,20 EUR/MWh
EEX ETF	1,20 EUR/MWh
EEX CEGH VTP	0,40 EUR/MWh
EEX ZTP	0,60 EUR/MWh
EEX CZ VTP	1,20 EUR/MWh
EEX NBP	2,50 pence/therm
Minimum duration of the cumulated valid best bid or best ask during the Calculation Period	
Contracts on EEX CZ VTP and EEX NBP	1 minute
All other contracts	3 minutes

Other notes	EEX Natural Gas Spot Market EOD Indices are rounded to three digits.
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### 2.3.2 EEX EOD Indices for EUA and EUAA

Parameter	Specification
Calculation Period	17:05 – 17:15
Minimum number of contracts traded	1 contract = 1,000 t CO <sub>2</sub> equivalent
Minimum number of contracts per order	1 contract = 1,000 t CO <sub>2</sub> equivalent
Spread for the consideration of best bid and best ask	specified on contract level
Minimum duration of the cumulated valid best bid and best ask during the Calculation Period	180 sec.

## 2.4 EEX Natural Gas Spot Within-Day Reference Price

The EEX Natural Gas Spot Within-Day Reference Price (EEX WDRP) for a specific market area is the volume-weighted average price of all trades in the respective EEX Natural Gas Spot Within-Day Contract that are executed on the EEX Natural Gas Spot Market between 8.00 and 18.00 (“Calculation Period”).

The EEX Natural Gas Spot Within-Day Reference Price (WDRP) is calculated every calendar day for that day for the following Within-Day contracts:

- EEX Natural Gas THE
- EEX Natural Gas PEG
- EEX Natural Gas ZTP
- EEX Natural Gas ETF
- EEX Natural Gas CEGH VTP
- EEX Natural Gas TTF
- EEX Natural Gas PVB

If no trade has been concluded in the relevant EEX Natural Gas Spot Contracts during the Calculation Period, the value of the respective EEX Natural Gas Spot WDRP for this day shall be equal to that of the corresponding EEX EGSI for that delivery day.

## 2.5 EEX TTF Neutral Gas Price (TTF NGP)

The EEX TTF Neutral Gas Price Index is the volume-weighted average price of all trades executed in all EEX TTF Natural Gas Hourly, Within-Day, Day and Weekend Spot Contracts for a specific gas delivery day (“D”). The Calculation Period for the EEX Neutral Gas Price Index comprises the second gas delivery day (D-2), the gas delivery day (D-1) before the relevant gas delivery day (D), as well as deals concluded within day on the delivery day (D). The volume of trades in EEX TTF Natural Gas Weekend Spot Contracts will be equally split between the individual delivery days of the EEX TTF Natural Gas Weekend Spot Contracts.

The EEX TTF Neutral Gas Price Index is continuously calculated and refreshed every 15 minutes in the file “NGP current prices” for each D (the current gas delivery day), D+1 (the next gas delivery day) and D+2 (the day after the next gas delivery day). After the end of a gas delivery day D, the final EEX TTF Neutral Gas Price for that gas delivery day D is calculated and published shortly after the end of delivery. The final EEX TTF Neutral Gas Prices are also made available in the file “NGP Price history”.

## 2.6 EEX ETF Neutral Gas Price (ETF NGP)

The EEX ETF Neutral Gas Price Index is the volume-weighted average price of all trades in the EEX ETF Natural Gas Spot Within-Day Contract that are executed on the EEX ETF Natural Gas Spot Market between 02:00 at day D and 02:00 at day D+1 (“Calculation Period”).

The EEX ETF Neutral Gas Price Index is calculated and published every calendar day for D-1, the previous gas delivery day, for all Within-Day contracts involving ETF

If no trade has been concluded in the relevant EEX Natural Gas Spot Contracts during the Calculation Period, the value of the respective EEX ETF Neutral Gas Price for this day shall be equal to that of the corresponding EEX EGSI for that delivery day.

## 2.7 EEX ECarbix

The European Carbon Index (EEX ECarbix) is calculated and published as exchange related price representing the actual market value of EU Emission Allowances (EUA).

The EEX ECarbix is calculated as the volume-based average of all trades concluded at EEX in continuous trading via the order book (SEME) and in primary auctions (T3PA) (daily value). If no primary auction took place and less than three trades are concluded in the continuous trading, the EEX EOD Index for EUA applies as daily value. Trades resulting from Spread-Trades will not be considered for all calculations<sup>3</sup>.

## 2.8 EEX Weekly European Cheese Indices (WECI)<sup>4</sup>

The EEX Weekly European Cheese Indices (WECI) are calculated based upon the arithmetic average of prices contributed by physical market participants (“contributors”). Each of the indices are calculated and published on a weekly basis. The EEX Weekly European Cheese Indices (WECI) comprise the following:

- EEX Weekly European Cheddar Curd Index
- EEX Weekly European Mild Cheddar Index
- EEX Weekly European Young Gouda Index
- EEX Weekly Mozzarella Index

<sup>3</sup> As of 1 January 2024.

<sup>4</sup> Go-live expected for 10 November 2021.

### 2.8.1 Eligible contributors

Eligible contributors must be credible companies with an established track record within the relevant product area. Contributors must have the ability to provide relevant data on a regular basis. EEX AG shall routinely review the continued suitability of each contributor.

### 2.8.2 Underlying data types

Confirmed, verifiable transactions for product meeting the specifications of the relevant index

### 2.8.3 Suitability of data

To be eligible for inclusion in an index, underlying data must relate to clear, definable individual transactions and should not: be a leg of another transaction or contingent on another transaction or other condition; and/or significantly exceed typical transaction volumes for the market; and/or include duplicate deals; and/or be subject to disagreement.

### 2.8.4 Data submission requirements

For each index, contributors shall calculate a single price that represents the unweighted arithmetic average price of all transactions which are in accordance with the requirements relating to "underlying data types" and "suitability of data". Data for inclusion in the calculation of the average price shall only include those qualifying transactions that have taken place on the "reporting day" and the previous 4 business days. The average price shall be expressed in Euros per tonne and rounded to the nearest Euro.

### 2.8.5 Reporting day

For each index, contributors shall report their average price between 9.00 to 17.00 each Tuesday.

### 2.8.6 Calculation and publication

For each index, EEX AG shall calculate an initial arithmetic average value based upon prices received from all contributors. Prices submitted by individual contributors that deviate by more than 5% from this initial arithmetic average value shall be eliminated after which a final arithmetic average value shall be calculated. This final average value shall be the index value for the relevant week.

Each Wednesday the indices will be published at around 13.00 by such method as selected by EEX AG

### 2.8.7 Publication exceptions

For December, the final indices of the month shall be published on the 3rd Wednesday. There will be no further publications of the indices for the remainder of the month.

### 2.8.8 Insufficient data

In the event that there is insufficient contributor data submitted to effect the calculation of an index, the value shall be calculated by reference to such alternative market data that EEX AG deems as appropriate. EEX, at its sole discretion, may also choose not to publish the respective index.

## 2.9 EEX HYDRIX

HYDRIX is an index that reflects the price for green hydrogen offered in Germany (the "Product"). The index value is the unweighted arithmetic mean of pricing data ("Underlying Data") provided by companies ("Contributors").

### 2.9.1 Data Sources and Eligibility of Contributors

Credible companies with an established track record within the Product area. Contributors must have the ability to provide Underlying Data on a regular basis. EEX AG routinely reviews the continued suitability of each Contributor.

### 2.9.2 Underlying Data

Confirmed, verifiable prices or price expectations (buy and/or sell side) for the Product meeting the specifications of the index.

### 2.9.3 Suitability of Data

To be eligible for inclusion in the index, underlying data must relate to clear, definable prices or price expectations (buy and/or sell) for Green Hydrogen and should not diverge from the specifications of the index. We define Green Hydrogen as hydrogen produced by electrolysis powered by renewable energies.

### 2.9.4 Data Submission Requirements

Each contributor shall calculate a single buy and/or ask price that represents the average portfolio buy and/or sell price of the contributor in accordance with the requirements relating to Underlying Data and Suitability of Data as detailed in this document. Underlying Data for inclusion in the calculation of the average buy and/or sell price shall only include those qualifying price expectations, which are valid on the Reporting Days for the whole week (Monday to Sunday) around the Reporting Days. The average buy and/or sell price shall be expressed in euro per megawatt hour (€/MWh) and rounded to the third decimal place.

### 2.9.5 Reporting Days

Each Contributor shall report their average buy and/or sell price expectations each week between Tuesday 0.00 CE(S)T and Wednesday 15.00 CE(S)T.

### 2.9.6 Insufficient Data

At least four (4) data points for both buy and sell must be submitted to EEX AG by at least five (5) Contributors. In the event that there is insufficient contributor data submitted, the index value shall be calculated as an average of the index values of the last three (3) weeks. EEX AG, at its sole discretion, may also choose not to publish HYDRIX.

### 2.9.7 Corrections

On occasion, corrections to the index may be made after the time of publication. Such corrections shall only be made in the event of calculation errors. EEX AG will not retroactively calculate the index based upon new information received after the end of the relevant Reporting Day.

## 3. Futures Markets Indices

### 3.1 KWK-Index

According to § 4 (3) of the German Cogeneration Law (KWK-Gesetz), the remuneration of cogeneration plants (KWK-Anlagen) is based on the normal price for electricity. For cogeneration plants up to a maximum power output of two megawatt, the normal price for electricity is defined as the average final settlement price of power day futures for the market area Germany at EEX in Leipzig for the respective preceding quarter.

The KWK-Index is the unweighted arithmetic average of the final settlement prices of the EEX German Power Base Day Futures during one calendar quarter. The KWK-Index is calculated and published shortly after the end of the respective quarter.

### 3.2 EGIX – European Gas Index

The EEX Daily and Monthly European Gas Indices (EEX EGIX) are calculated and published for the following contracts:

- THE Front Month Contract
- PEG Front Month Contract
- PVB Front Month Contract
- TTF Front Month Contract
- PSV Front Month Contract
- ETF Front Month Contract
- CEGH VTP Front Month Contract
- NBP Front Month Contract
- ZEE Front Month Contract
- ZTP Front Month Contract
- CZ VTP Front Month Contract

EEX EGIX are calculated every Exchange Day by EEX AG at 18:00 and published shortly thereafter.

#### 3.2.1 EEX Daily EGIX

The EEX Daily EGIX for a specific market area is the volume-weighted average price of all trades in the respective EEX Natural Gas Month Futures executed on the EEX Natural Gas Futures Market on that day. Trades concluded via Trade Registration are not taken into account in the calculation of the EEX Daily EGIX. If no trades are concluded, the Daily EGIX will be equal to the corresponding daily settlement price for the same month future.

#### 3.2.2 EEX Monthly EGIX

The EEX Monthly EGIX for a specific market area is determined as the arithmetic mean of the values of the corresponding EEX Daily EGIX of the front month contract in question.

### 3.3 EEX Monthly Index

The EEX Monthly Index is calculated and published as an average of all daily settlement prices for Natural Gas Futures in the respective front month. For the following market areas the index is calculated and published monthly on the last trading day of the respective front contract:

- THE Front Month Contract
- PEG Front Month Contract
- TTF Front Month Contract
- PSV Front Month Contract
- PVB Front Month Contract
- ETF Front Month Contract
- CEGH VTP Front Month Contract
- NBP Front Month Contract
- ZEE Front Month Contract
- ZTP Front Month Contract
- CZ VTP Front Month Contract



## 4. EEX Global Carbon Index Family

### 4.1 EEX Global Carbon Index Core

#### 4.1.1 Description

The *EEX Global Carbon Index Core* is designed to track the performance of the most liquid and mature global markets in compliance carbon emissions allowances. It reflects price trends in major emissions trading schemes (ETS).

As outlined in more detail below, the *EEX Global Carbon Index Core* is calculated by weighting prices of carbon contracts with the cap volume<sup>5</sup> of the ETS programs from where the constituent products originate, which represents the actual 'physical size' of the respective ETS in the given year.

The following versions of the *EEX Global Carbon Index Core* are calculated and published by EEX AG:

- *EEX Global Carbon Index Core - Spot (EUR)*
- *EEX Global Carbon Index Core - Spot (USD)*
  
- *EEX Global Carbon Index Core - Total Return (EUR)*
- *EEX Global Carbon Index Core - Total Return (USD)*
  
- *EEX Global Carbon Index Core - Excess Return (EUR)*
- *EEX Global Carbon Index Core - Excess Return (USD)*

All index variants track the price movements of the carbon futures contracts specified as index constituents in section 4.1.2.1 relative to the starting date.

Whereas the *EEX Global Carbon Index Core – Total Return* tracks the performance of a fully collateralized investment in these contracts including interest on collateral, the *EEX Global Carbon Index Core – Excess Return* tracks the price movements of these contracts without taking into account interest earned on collateral.

The *EEX Global Carbon Index Core – Spot* provides a non-investible measure of the price changes of the carbon futures contracts without taking into account interest earned on collateral and the rolling of the futures contracts.

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<sup>5</sup> Within the scope of this document, the term "cap volume" refers to the total amount of carbon emissions allowances issued by the issuing body for the respective ETS program for the current year vintage in tons of CO<sub>2</sub> equivalents (t CO<sub>2</sub>e).

#### 4.1.2 Index constituents and selection criteria

The following section provides an overview of the index constituents and of the selection criteria that define the eligibility of index constituents.

##### 4.1.2.1 Index constituents

The *EEX Global Carbon Index Core* is calculated using daily prices of futures contracts with current or next year December expiry (please see section 4.1.3.4 for further details) in carbon emissions allowances originating from the following programs:

- California Cap and Trade Program
- EU ETS
- Regional Greenhouse Gas Initiative (RGGI)
- UK ETS<sup>6</sup>

Program	Contract	Price
California Cap and Trade Program	California Carbon Allowance (“CCA”) Futures contract listed on Nodal Exchange with current year December expiry and current year vintage or next year December expiry and next year vintage (see section 4.1.3.4)	Daily settlement price published by Nodal Exchange
EU ETS	EU Allowance (“EUA”) Futures contract listed on European Energy Exchange with current or next year December expiry (see section 4.1.3.4)	Daily settlement price published by European Energy Exchange
RGGI	RGGI Futures contract listed on Nodal Exchange with current year December expiry and current year vintage or next year December expiry and next year vintage (see section 4.1.3.4)	Daily settlement price published by Nodal Exchange
UK ETS	UK Allowance (“UKA”) Futures contract with current or next year December expiry (see section 4.1.3.4)	Arithmetic mean of bid and ask closing prices provided by Redshaw Advisors Ltd. <sup>7</sup>

<sup>6</sup> Included from 1 January 2022 onwards.

<sup>7</sup> For business days between 1 January 2022 and 17 February 2023, the daily closing price provided by Redshaw Advisors Ltd. is used. From business day 20 February 2023 onwards, the arithmetic mean of bid and ask closing prices provided by Redshaw Advisors Ltd. is used.

#### 4.1.2.2 Selection criteria

Eligible index constituents are identified based on the following two criteria:

- Liquidity
- Maturity

##### **Liquidity:**

Carbon contracts from ETS programs will only be deemed eligible for the *EEX Global Carbon Index Core* if

- futures contracts exist at least with current and next year expiry and
- contracts are sufficiently liquid, i.e., if average monthly trading volumes aggregated over all futures contracts of the respective program over the past 12 months exceed 10 mln. t CO<sub>2</sub>e.

Any decision to add additional constituents or to exclude existing constituents will be published by EEX AG.

##### **Maturity:**

Carbon contracts will only be deemed eligible for the *EEX Global Carbon Index Core* if the respective ETS program is characterized by sufficient degrees of maturity and stability. This may refer to various dimensions such as years of operation, scope of the ETS program (covered greenhouse gases, sectors) and/or the level of legal foundation and institutional capacity for the effective functioning of the ETS program.

Carbon contracts originating from ETS programs that are perceived as unstable are not eligible for the index.

Any decision to add additional constituents or to exclude existing constituents will be published by EEX AG.

#### 4.1.3 Index calculation

The following sections outline details with respect to the calculation of the *EEX Global Carbon Index Core*.

##### 4.1.3.1 Currency notation

The *EEX Global Carbon Index Core* is calculated in Euro (EUR) and in US dollar (USD) denominations.

Daily Euro foreign exchange reference rates published by the European Central Bank (ECB) are used to convert prices from domestic currency into the respective index denomination if required. If an exchange rate is missing, EEX AG uses the last available exchange rate.

#### 4.1.3.2 Index weights

The index constituents are weighted by the cap volumes of the ETS programs from where the constituent products originate.

#### 4.1.3.3 Rebalancing

Rebalancing takes place once a year on the first business day in January. Each constituent is rebalanced by applying the current cap of the respective ETS program. EEX AG may perform an ad-hoc rebalancing, e.g. if the caps of the respective ETS program significantly change between the regular rebalancing events.

#### 4.1.3.4 Calculus

##### **Definition of $Price_{i,j,t}$ :**

$Price_{i,j,t}$  represents the settlement price of contract  $i$  in currency  $j$  on trading day  $t$ , if not specified otherwise in section 4.1.2.1.

##### **Contract rolling:**

The futures contracts considered to calculate the index are rolled over into the contract with expiry in December of the next year on the first business day in December.

For trading days between 01.01. and 30.11.,  $Price_{i,j,t}$  refers to the price of the futures contract with expiry in December of the current year. As rolling of these contracts takes place on the first business day in December of each year, between this day and 31.12.,  $Price_{i,j,t}$  refers to the price of the futures contract with expiry in December of the next year.

On rolling days  $t$ , the futures contract with expiry in December of the next year is considered the roll-in contract whereas the futures contract with expiry in December of the current year is considered the roll-out contract.

##### **Calculation of $Total\ value_{j,t}$ :**

$Total\ value_{j,t}$  is the cap-weighted average price of the constituent contracts. More specifically, prices of the respective contracts named above are aggregated using the constituents' weights  $w_{i,p(t)}$  to obtain  $Total\ value_{t,j}$ .<sup>8</sup>  $p(t)$  refers to the respective period between two rebalancing events that

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<sup>8</sup> If required, contract prices are converted into EUR (USD) per metric ton CO<sub>2</sub>e. For example, prices of RGGI contracts are denoted in USD per short ton CO<sub>2</sub> and consequently converted into EUR (USD) per metric ton of CO<sub>2</sub>e.

usually take place on the first business day in January. The constituents' weights  $w_{i,p(t)}$  are derived by dividing the individual weighting factor  $x_{i,p(t)}$  by the sum of the weighting factors for all constituents of the respective index:

$$w_{i,p(t)} = \frac{x_{i,p(t)}}{\sum_{i=1}^N x_{i,p(t)}} \quad (1)$$

$x_{i,p(t)}$  refers to the cap volume of scheme  $i$  during period  $p(t)$  to which day  $t$  belongs. Please note that  $x_{i,p(t)}$  and consequently  $w_{i,p(t)}$  are constant for all trading days between two rebalancing events.

*Total value* $_{j,t}$  is defined as follows:

$$Total\ value_{j,t} = \sum_{i=1}^N Price_{i,j,t} * w_{i,p(t)} \quad (2)$$

### Spot Index:

The *EEX Global Carbon Index Core – Spot* a non-investible measure of the price movements of the carbon futures contracts specified as index constituents in section 4.1.2.1 without taking into account potential interest earned on collateral and the rolling of the futures contracts.

On trading day  $t$ , the *Spot Index* $_{j,t}$  is calculated by dividing *Total value* $_{j,t}$  with the normalizing constant  $NC_{j,p(t)}$ . The normalizing constant is defined further in (4) and (6):

$$Spot\ Index_{j,t} = \frac{Total\ value_{j,t}}{NC_{j,p(t)}} \quad (3)$$

The normalizing constant in  $t_0$  is initially defined in (4). The normalizing constant remains constant over one period and changes only on rebalancing events:

$$NC_{j,p(t_0)} = \frac{Total\ value_{j,t_0}}{100} \quad (4)$$

so that

$$Spot\ Index_{j,t_0} = 100. \quad (5)$$

### Return calculation on rebalancing days:

Rebalancing takes place on the first business day in January every year.

$t^*$  denotes the last day prior to a rebalancing day. On rebalancing day  $t^* + 1$ , the normalizing constant for the new period  $NC_{p(t^*+1)}$  is calculated as follows:

$$NC_{j,p(t^*+1)} = NC_{j,p(t^*)} \frac{\sum_{i=1}^N Price_{i,j,t^*+1} * W_{i,p(t^*+1)}}{\sum_{i=1}^N Price_{i,j,t^*+1} * W_{i,p(t^*)}} \quad (6)$$

Daily returns on all trading days except for rebalancing days are calculated as expressed in (7):

$$Price\ return_{j,t} = \frac{Total\ value_{j,t}}{Total\ value_{j,t-1}} - 1 = \frac{\sum_{i=1}^N Price_{i,j,t} * W_{i,p(t)}}{\sum_{i=1}^N Price_{i,j,t-1} * W_{i,p(t-1)}} - 1 \quad (7)$$

Daily returns on rebalancing days are calculated as expressed in (8). In contrast to the calculation routine on all other days, on rebalancing days the weights of the previous day are applied:

$$Price\ return_{j,t} = \frac{\sum_{i=1}^N Price_{i,j,t} * W_{i,p(t-1)}}{\sum_{i=1}^N Price_{i,j,t-1} * W_{i,p(t-1)}} - 1 \quad (8)$$

#### Total Return Index:

The *EEX Global Carbon Index Core – Total Return* tracks the performance of a fully collateralized investment in the carbon futures contracts specified as index constituents in 4.1.2.1 including interest on collateral.

$$Total\ return_{USD,t} = Price\ return_{USD,t} + collateral\ yield_{USD,t} \quad (9)$$

$$Total\ return_{EUR,t} = Price\ return_{EUR,t} + collateral\ yield_{EUR,t} \quad (10)$$

$$\text{whereas } collateral\ yield_{j,t} = \frac{Number\ of\ days_{t,t-1}}{360} * overnight\ rate_{j,t-1} \quad (11)$$

*Number of days<sub>t,t-1</sub>* refers to the number of days (including non-business days) between the current business day and the previous business day for which an index value was calculated.

For the calculation of the USD-denominated indices, the Federal Reserve Overnight Bank Funding Rate (OBFR) and for calculation of the EUR indices, the Euro short-term rate (€STR) is being used as *overnight rate<sub>j,t</sub>*.<sup>9</sup>

$$Total\ return\ index_{USD,t} = Total\ return\ index_{USD,t-1} * (1 + total\ return_{USD,t}) \quad (12)$$

$$Total\ return\ index_{EUR,t} = Total\ return\ index_{EUR,t-1} * (1 + total\ return_{EUR,t}) \quad (13)$$

$$\text{whereas } Total\ return\ index_{j,t_0} = 100 \quad (14)$$

<sup>9</sup> Prior to business day 2 October 2019, the EONIA published by ECB was used as *overnight rate<sub>j,t</sub>* for the calculation of the EUR indices.

**Excess Return Index:**

The *EEX Global Carbon Index Core – Excess Return* tracks the performance of the carbon futures contracts specified as index constituents in 4.1.2.1 excluding interest on collateral.

$$\text{Excess return index}_{USD,t} = \text{Excess return index}_{USD,t-1} * (1 + \text{price return}_{USD,t}) \quad (15)$$

$$\text{Excess return index}_{EUR,t} = \text{Excess return index}_{EUR,t-1} * (1 + \text{price return}_{EUR,t}) \quad (16)$$

$$\text{whereas } \text{Excess return index}_{j,t_0} = 100 \quad (17)$$

**4.1.4 Publication of index values**

Index values are published on the EEX Transparency website daily from Monday till Friday except for holidays as defined in the EEX Group holiday calendar published on the EEX AG website. For information purposes, also the cap-weighted average price of the constituent contracts is published in EUR/t CO2e and USD/t CO2e.

Index values are published after the last price of a constituent contract of the respective index has been published. In case a price is not available for any constituent contract (e.g., due to a holiday in the respective home market of the constituent contract), the latest available price of the constituent contract is considered.

Index values are published with two decimals.

If price input data of an index constituent was revised after the index value was already published or an error occurred in the calculation of an index value, it will be decided on a case-by-case basis whether the index value will be revised.

**4.1.5 Governance**

The index constituents of the *EEX Global Carbon Index Core* must meet all the criteria defined in section 4.1.2.2, and the relevant input price data must be accessible and verifiable at EEX AG's sole discretion.

Prior to any rebalancing, EEX AG may consult with the EEX Global Carbon Index Advisory Committee (in the following referred to as "the Committee") which is put in place to ensure the independence and objectivity of the *EEX Global Carbon Index Core*.

**4.1.5.1 EEX Global Carbon Index Advisory Committee**

EEX AG may introduce an EEX Global Carbon Index Advisory Committee ("Committee"). Role, purpose and composition of such a Committee are described in the following.

**Role and purpose of the Committee:**

The main purpose of the Committee shall be to provide guidance with respect to the identification of eligible constituents of the index to be in line with the selection criteria.

EEX AG may consult with the EEX Global Carbon Index Advisory Committee to assess the eligibility of potential future index constituents as well as potential future ineligibility of existing index constituents based on liquidity and maturity of the respective ETS.

The Committee may also provide advice on market developments as well as recommendations on potential changes to the rules or the inclusion of additional indices.

The Committee may use all reasonable efforts to ensure that the main objective for the *EEX Global Carbon Index Core* is met: provision of a clear and comprehensive picture of price developments in major carbon markets.

**Composition:**

The Committee shall be composed of representatives from a broad range of market stakeholders (practitioners, experts, professionals and/or NGOs).

**4.2 EEX Global Carbon Index Extended****4.2.1 Description**

The *EEX Global Carbon Index Extended (EEX GCI Extended)* is designed to provide a truly comprehensive picture of global compliance carbon markets.

It includes all emissions trading schemes (ETS) worldwide, which are deemed reasonably mature in terms of ETS design and sufficiently relevant in size in terms of the total amount of emissions covered under the ETS.

As outlined in more detail below, the *EEX Global Carbon Index Extended* is calculated by weighting prices of carbon contracts with the cap volume<sup>10</sup> of the ETS programs from where the constituent products originate, which represents the actual 'physical size' of the respective ETS in the given year.

The following versions of the *EEX Global Carbon Index Extended* are calculated and published by EEX AG:

- *EEX Global Carbon Index Extended - Spot (EUR)*
- *EEX Global Carbon Index Extended - Spot (USD)*

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<sup>10</sup> Within the scope of this document, the term "cap volume" refers to the total amount of carbon emissions allowances issued by the issuing body for the respective ETS program for the current year vintage in tons of CO<sub>2</sub> equivalents (t CO<sub>2</sub>e).



- *EEX Global Carbon Index Extended - Total Return (EUR)*
- *EEX Global Carbon Index Extended - Total Return (USD)*
  
- *EEX Global Carbon Index Extended - Excess Return (EUR)*
- *EEX Global Carbon Index Extended - Excess Return (USD)*

All index variants track the price movements of the carbon futures contracts specified as index constituents in section 4.2.2.1 relative to the starting date.

Whereas the *EEX Global Carbon Index Extended – Total Return* tracks the performance of a fully collateralized investment in these contracts including interest on collateral, the *EEX Global Carbon Index Extended – Excess Return* tracks the price movements of these contracts without taking into account interest earned on collateral.

The *EEX Global Carbon Index Extended – Spot* provides a non-investible measure of the price changes of the carbon futures contracts without taking into account interest earned on collateral and the rolling of the futures contracts.

#### 4.2.2 Index constituents and selection criteria

The following section provides an overview of the index constituents and of the selection criteria that define the eligibility of index constituents.

##### 4.2.2.1 Index constituents

The *EEX Global Carbon Index Extended* is calculated using daily prices of spot<sup>11</sup> contracts of carbon emissions allowances from the following programs:

- California Cap and Trade Program
- China National ETS<sup>12</sup>
- EU ETS
- Korea ETS
- New Zealand ETS
- Regional Greenhouse Gas Initiative (RGGI)
- UK ETS<sup>13</sup>

Program	Contract	Price
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<sup>11</sup> Please note that for the California Cap and Trade Program and RGGI, front-month futures contracts will be used instead of spot products. For UK ETS, daily futures will be used.

<sup>12</sup> Included from 1 January 2022 onwards.

<sup>13</sup> Included from 1 January 2022 onwards.

China National ETS	Carbon Emission Allowance (“CEA”) current vintage spot contract listed on Shanghai Environment and Energy Exchange	Daily closing price published by Shanghai Environment and Energy Exchange
California Cap and Trade Program	California Carbon Allowance (“CCA”) Futures contract listed on Nodal Exchange with current month expiry and current year vintage	Daily settlement price published by Nodal Exchange
EU ETS	EU Allowance (“EUA”) Secondary Market spot (SEME) listed on European Energy Exchange	Daily settlement price published by European Energy Exchange
Korea ETS	Korean Allowance Unit (“KAU”) current vintage spot contract	Daily closing price published by Ecoeye Co., Ltd.
New Zealand ETS	New Zealand Unit (“NZU”) current vintage spot contract	Daily closing price provided by Jarden Securities Ltd.
RGGI	RGGI Futures contract listed on Nodal Exchange with current month expiry and current year vintage <sup>14</sup>	Daily settlement price published by Nodal Exchange
UK ETS	UK Allowance (“UKA”) Daily Futures contract	Arithmetic mean of bid and ask closing prices provided by Redshaw Advisors Ltd. <sup>15</sup>

#### 4.2.2.2 Selection criteria

Eligible index constituents are identified based on the following two criteria:

- Maturity
- Relevance

#### **Maturity:**

Carbon contracts will only be deemed eligible for the *EEX Global Carbon Index Extended* if the respective ETS program is characterized by sufficient degrees of maturity and stability. This may refer to various dimensions such as years of operation, scope of the ETS program (covered greenhouse gases, sectors) and/or the level of legal foundation and institutional capacity for the effective functioning of the ETS program.

<sup>14</sup> For the months January and February, RGGI contracts with current month expiry and previous year vintage are used.

<sup>15</sup> For business days between 1 January 2022 and 17 February 2023, the daily closing price provided by Redshaw Advisors Ltd. is used. From business day 20 February 2023 onwards, the arithmetic mean of bid and ask closing prices provided by Redshaw Advisors Ltd. is used.

Carbon contracts originating from ETS programs that are perceived as unstable are not eligible for the index.

Any decision to add additional constituents or to exclude existing constituents will be published by EEX AG.

**Relevance:**

Carbon contracts will only be deemed eligible for the *EEX Global Carbon Index Extended* if the respective ETS program is considered sufficiently relevant in size in terms of the total amount of emissions covered under the ETS.

Carbon contracts originating from ETS programs that are not considered sufficiently relevant in terms of total emissions covered are not eligible for the index.

Any decision to add additional constituents or to exclude existing constituents will be published by EEX AG.

#### 4.2.3 Index calculation

The following sections outline details with respect to the calculation of the *EEX Global Carbon Index Extended*.

##### 4.2.3.1 Currency notation

The *EEX Global Carbon Index Extended* is calculated in Euro (EUR) and in US dollar (USD) denominations.

Daily Euro foreign exchange reference rates published by the European Central Bank (ECB) are used to convert prices from domestic currency into the respective index denomination if required. If an exchange rate is missing, EEX AG uses the last available exchange rate.

##### 4.2.3.2 Index weights

The index constituents are weighted by the cap volumes of the ETS programs from where the constituent products originate.<sup>16</sup>

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<sup>16</sup> Please note that the China National ETS is an intensity-based system with ex-post adjustments to the cap based on actual power production levels. For China, we use the latest information on the cap which was officially published. Due to the absence of an official cap in the New Zealand ETS, for New Zealand, the weighting factor for the years 2018 – 2022 is based on the “The numbers of units surrendered” in the New Zealand ETS in 2018.

### 4.2.3.3 Rebalancing

Rebalancing takes place once a year on the first business day in January.

Each constituent is rebalanced by applying the current cap of the respective ETS program.<sup>17</sup>

EEX AG may perform an ad-hoc rebalancing, e.g., if the caps of the respective ETS program significantly change between the regular rebalancing events.

### 4.2.3.4 Calculus

#### Definition of $Price_{i,j,t}$ :

$Price_{i,j,t}$  represents the price of contract  $i$  in currency  $j$  on trading day  $t$  as specified in section 4.2.2.1.

#### Contract rolling:

Rolling days refer to the first business days in any given month.

For RGGI and the California Cap and Trade Program, prices of monthly futures are considered. Accordingly, for these two regimes,  $price_{i,j,t}$  refers to the settlement price of the front-month futures contract of the respective scheme.

On rolling days  $t$ , the futures contract with expiry at the current month is considered the roll-in contract.

#### Calculation of $Total\ value_{j,t}$ :

$Total\ value_{j,t}$  is the cap-weighted average price of the constituent contracts. More specifically, prices of the respective contracts named above are aggregated using the constituents' weights  $w_{i,p(t)}$  to obtain  $Total\ value_{t,j}$ .<sup>18</sup>  $p(t)$  refers to the respective period between two rebalancing events that usually take place on the first business day in January. The constituents' weights  $w_{i,p(t)}$  are derived by dividing the individual weighting factor  $x_{i,p(t)}$  by the sum of the weighting factors for all constituents of the respective index:

$$w_{i,p(t)} = \frac{x_{i,p(t)}}{\sum_{i=1}^N x_{i,p(t)}} \quad (1)$$

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<sup>18</sup> If required, contract prices are converted into EUR (USD) per metric ton CO<sub>2</sub>e. For example, prices of RGGI contracts are denoted in USD per short ton CO<sub>2</sub> and consequently converted into EUR (USD) per metric ton of CO<sub>2</sub>e.

$x_{i,p(t)}$  refers to the cap volume of scheme  $i$  during period  $p(t)$  to which day  $t$  belongs. Please note that  $x_{i,p(t)}$  and consequently  $w_{i,p(t)}$  are constant for all trading days between two rebalancing events.

*Total value* $_{j,t}$  is defined as follows:

$$Total\ value_{j,t} = \sum_{i=1}^N Price_{i,j,t} * w_{i,p(t)} \quad (2)$$

### Spot Index:

The *EEX Global Carbon Index Extended – Spot* a non-investible measure of the price movements of the carbon futures contracts specified as index constituents in section 4.2.2.1 without taking into account potential interest earned on collateral and the rolling of the futures contracts.

On trading day  $t$ , the *Spot Index* $_{j,t}$  is calculated by dividing *Total value* $_{j,t}$  with the normalizing constant  $NC_{j,p(t)}$ . The normalizing constant is defined further in (4) and (6):

$$Spot\ Index_{j,t} = \frac{Total\ value_{j,t}}{NC_{j,p(t)}} \quad (3)$$

The normalizing constant in  $t_0$  is initially defined in (4). The normalizing constant remains constant over one period and changes only on rebalancing events:

$$NC_{j,p(t_0)} = \frac{Total\ value_{j,t_0}}{100} \quad (4)$$

so that

$$Spot\ Index_{j,t_0} = 100. \quad (5)$$

### Return calculation on rebalancing days:

Rebalancing takes place on the first business day in January every year.

$t^*$  denotes the last day prior to a rebalancing day. On rebalancing day  $t^* + 1$ , the normalizing constant for the new period  $NC_{p(t^*+1)}$  is calculated as follows:

$$NC_{j,p(t^*+1)} = NC_{j,p(t^*)} \frac{\sum_{i=1}^N Price_{i,j,t^*+1} * w_{i,p(t^*+1)}}{\sum_{i=1}^N Price_{i,j,t^*+1} * w_{i,p(t^*)}} \quad (6)$$

Daily returns on all trading days except for rebalancing days are calculated as expressed in (7):

$$Price\ return_{j,t} = \frac{Total\ value_{j,t}}{Total\ value_{j,t-1}} - 1 = \frac{\sum_{i=1}^N Price_{i,j,t} * w_{i,p(t)}}{\sum_{i=1}^N Price_{i,j,t-1} * w_{i,p(t-1)}} - 1 \quad (7)$$

Daily returns on rebalancing days are calculated as expressed in (8). In contrast to the calculation routine on all other days, on rebalancing days the weights of the previous day are applied:

$$Price\ return_{j,t} = \frac{\sum_{i=1}^N Price_{i,j,t} * w_{i,p(t-1)}}{\sum_{i=1}^N Price_{i,j,t-1} * w_{i,p(t-1)}} - 1 \quad (8)$$

### Total Return Index:

The *EEX Global Carbon Index Extended – Total Return* tracks the performance of a fully collateralized investment in the carbon futures contracts specified as index constituents in section 4.2.2.1 including interest on collateral.

$$Total\ return_{USD,t} = Price\ return_{USD,t} + collateral\ yield_{USD,t} \quad (9)$$

$$Total\ return_{EUR,t} = Price\ return_{EUR,t} + collateral\ yield_{EUR,t} \quad (10)$$

$$whereas\ collateral\ yield_{j,t} = \frac{Number\ of\ days_{t,t-1}}{360} * overnight\ rate_{j,t-1} \quad (11)$$

*Number of days<sub>t,t-1</sub>* refers to the number of days (including non-business days) between the current business day and the previous business day for which an index value was calculated.

For the calculation of the USD-denominated indices, the Federal Reserve Overnight Bank Funding Rate (OBFR) and for calculation of the EUR indices, the Euro short-term rate (€STR) is being used as *overnight rate<sub>j,t</sub>*.<sup>19</sup>

$$Total\ return\ index_{USD,t} = Total\ return\ index_{USD,t-1} * (1 + total\ return_{USD,t}) \quad (12)$$

$$Total\ return\ index_{EUR,t} = Total\ return\ index_{EUR,t-1} * (1 + total\ return_{EUR,t}) \quad (13)$$

$$whereas\ Total\ return\ index_{j,t_0} = 100 \quad (14)$$

### Excess Return Index:

The *EEX Global Carbon Index Extended – Excess Return* tracks the performance of the carbon futures contracts specified as index constituents in section 4.2.2.1 excluding interest on collateral.

$$Excess\ return\ index_{USD,t} = Excess\ return\ index_{USD,t-1} * (1 + price\ return_{USD,t}) \quad (15)$$

$$Excess\ return\ index_{EUR,t} = Excess\ return\ index_{EUR,t-1} * (1 + price\ return_{EUR,t}) \quad (16)$$

$$whereas\ Excess\ return\ index_{j,t_0} = 100 \quad (17)$$

<sup>19</sup> Prior to business day 2 October 2019, the EONIA published by ECB was used as *overnight rate<sub>j,t</sub>* for the calculation of the EUR indices.

#### 4.2.4 Publication of index values

Index values are published on the EEX Transparency website daily from Monday till Friday except for holidays as defined in the EEX Group holiday calendar published on the EEX AG website. For information purposes, also the cap-weighted average price of the constituent contracts is published in EUR/t CO<sub>2</sub>e and USD/t CO<sub>2</sub>e.

Index values are published after the last price of a constituent contract of the respective index has been published. In case a price is not available for any constituent contract (e.g., due to a holiday in the respective home market of the constituent contract), the latest available price of the constituent contract is considered.

Index values are published with two decimals.

If price input data of an index constituent was revised after the index value was already published or an error occurred in the calculation of an index value, it will be decided on a case-by-case basis whether the index value will be revised.

#### 4.2.5 Gouvernance

The index constituents of the *EEX Global Carbon Index Extended* must meet all the criteria defined in section 4.2.2.2, and the relevant input price data must be accessible and verifiable at EEX's sole discretion.

Prior to any rebalancing, EEX AG may consult with the EEX Global Carbon Index Advisory Committee (in the following referred to as "the Committee") which is put in place to ensure the independence and objectivity of the *EEX Global Carbon Index Extended*.

##### 4.2.5.1 EEX Global Carbon Index Advisory Committee

EEX AG may introduce an EEX Global Carbon Index Advisory Committee ("Committee"). Role, purpose and composition of such a committee are described in the following.

##### **Role and purpose of the Committee:**

The main purpose of the Committee shall be to provide guidance with respect to the identification of eligible constituents of the index to be in line with the selection criteria.

EEX AG may consult with the EEX Global Carbon Index Advisory Committee to assess the eligibility of potential future index constituents as well as potential future ineligibility of existing index constituents based on maturity and relevance of the respective ETS.

The Committee may also provide advice on market developments as well as recommendations on potential changes to the rules or the inclusion of additional indices.

The Committee may use all reasonable efforts to ensure that the main objective for the *EEX Global Carbon Index Extended* is met: provision of a clear and comprehensive picture of price developments in carbon markets that are deemed eligible.

**Composition:**

The Committee shall be composed of representatives from a broad range of market stakeholders (practitioners, experts, professionals and/or NGOs).

**4.3 EEX Zero Carbon Freight Index (ZCFI)**

4.3.1 Overview

The EEX Zero Carbon Freight Index (ZCFI) is an information only product designed to help freight market participants understand the potential cost to shipping of its incorporation into the EU Emissions Trading Scheme.

The index calculates a synthetic FFA time-charter rate for Capesize and Panamax vessels, adjusted for the theoretical cost of carbon. Price information is taken from the EEX Dry Freight FFA market and the EEX EUA Futures market to create a daily “Zero Carbon FFA” rate.

4.3.2 Methodology

Freight rates are calculated as the volume-weighted average prices for the front month FFA market, based on transactions cleared at EEX during the previous trading session (T-1). The EUA price is the last available daily settlement price (DSP) for EUA front December futures, traded on EEX in the previous trading session.

4.3.2.1 Index calculation

$$ZCFI = \frac{\sum FFA\_Price \times FFA\_Volume}{\sum FFA\_Volume} + [(FC \times CCF) \times (EUA^{Dec} \times EURUSD)]$$

4.3.2.2 Legend

	Description	Unit	Capesize	Panamax
FFA_	Front Month EEX FFA	USD / DAY	VWAP	VWAP
FC	Fuel Consumption	Metric Tonnes (MT) / day	60	30
CCF	Carbon Conversion Factor	MT CO <sub>2</sub> / MT Heavy Fuel Oil (HFO)	3.114	3.114
EUA <sup>Dec</sup>	Front December EEX EUA Futures	EUR / MT	Market price	Market Price
EURUSD	Currency conversion	1 EUR / USD	Market price	Market price



#### 4.3.2.3 Source data

- FFA and EUA data are provided by EEX.
- Fuel consumption and carbon conversion factors are based on data from the International Maritime Organization (IMO) Ship Fuel Consumption Database (MEPC 76/6/1).
- Currency conversions are performed by using the reference rates from the European Central Bank ([https://www.ecb.europa.eu/stats/policy\\_and\\_exchange\\_rates](https://www.ecb.europa.eu/stats/policy_and_exchange_rates)).

#### 4.3.3 Publication

The index is published daily except for UK and EU public holidays.

#### 4.3.4 Insufficient Data

If there is no available data for either the FFA price or the EUA Futures price then the last available price from a previous day is used to calculate the index.