

CF Staking Series

Methodology Guide

Version:

1.3

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1 Version History

Version	Date Issued	Summary of Change	Owner
V1.0	22 Oct 2023	Document creation	CF Benchmarks Management
V1.1	21 Nov 2023	Updated logo (AKC v2) & format	CF Benchmarks Marketing
V1.2	06 Feb 2024	<p>Addition of section 6.4 Delayed Calculation & Publication</p> <p>Updates to the Administrator communication procedures for Delayed Calculation & Publication; Calculation Failure; Restatement & Republishing and Market Failure Events</p>	CF Benchmarks Compliance Officer
V1.3	10 Oct 2024	Addition of the CF SOL Staking Indices	CF Benchmarks Management

2 Overview

Staking rewards are an essential aspect of blockchain networks that utilize the Proof of Stake (PoS) consensus algorithm. PoS-based blockchains, as opposed to Proof of Work (PoW) systems like Bitcoin, rely on the concept of staking, wherein network participants lock up or "stake" their native cryptocurrency in order to validate transactions and maintain the security of the network. These participants, also known as validators or delegators, are then rewarded with staking rewards for their contributions. Staking rewards are a crucial incentive mechanism, encouraging users to actively participate in the consensus process, which in turn strengthens the overall stability and reliability of the network.

The importance of staking rewards in PoS blockchains cannot be overstated. These rewards help maintain a decentralized and secure network by providing an economic incentive for validators/delegators to act honestly and follow the rules. Validators who engage in malicious behaviour or attempt to manipulate the network can lose their staked tokens as a penalty, which further deters such actions. Staking rewards also serve to distribute newly minted tokens to participants, thereby maintaining a healthy and balanced ecosystem while controlling inflation.

Beyond the significance of staking rewards for the maintenance and growth of a PoS-based blockchain, they also offer investors and users an opportunity to earn passive income. By staking their tokens, users can generate a consistent return on their investment, which can be an attractive proposition for both long-term holders and new investors alike. This encourages more actors to enter the ecosystem, thus increasing the network's adoption, visibility, and overall value. As a result, staking rewards play a pivotal role in fostering a robust and thriving blockchain community, making them an indispensable component of PoS-based systems.

The CF Staking Series is intended to serve as a transparent and representative indicator of the daily realised reward associated with the staking of digital assets. It serves investors in providing an accurate measure of the economic incentives associated with a specific PoS network, which investors can choose to allocate resources to.

3 Definitions

API: Application programming interface.

Contributing Staking Service Provider: A non-custodial staking service provider to serve as pricing source for the calculation of the staking reward rate.

Contributed Reward Rate: Annualised Staking Reward Rate contributed by a **Contributing Staking Service Provider** for a given **Reward Period**.

Observable Time Window: corresponds to the 24 hours window over which the staking reward rate is observed.

Publication Time: corresponds to the time at which the publication of the index is carried out by the Index Administrator, see values in Appendix 1.

Reward Period: corresponds to the frequency period at which the staking rewards are distributed on the blockchain protocol level.

Finalized Reward Period: corresponds to the **Reward Period** after a fixed number of finished Reward Period has passed. See Section 9 for the asset Finality Time.

Eligible Reward Period: corresponds to a **Finalized Reward Period** that was finalized in the **Observable Time Window**.

Asset Staked: corresponds to the amount of asset locked that is taken into account by the blockchain protocol when calculating the rewards.

Contributor Fee: corresponds to the fees that reflect what can be reasonably expected to be incurred by the **Staking Service Provider** for providing staking services, who meets the **Staking Service Provider's** requirement to be a client, and who engages the Supplier to provide non-custodial staking services of digital assets for specified quantities on their behalf (see section 9). In the case where the fee is defined and subtracted at the protocol level, the fee observed on the protocol is the one considered as the Contributor Fee.

All rewards and fees described in this definition shall reflect what can be reasonably expected to be earned and/or incurred by a holder of specified quantities of digital assets for which the Supplier provides staking services, who meets the Supplier's requirements to be a client, and who engages the Supplier to provide non-custodial staking services of digital assets for such quantities on their behalf.

Stakeholder: A Stakeholder refers to the owner of the staked assets in a Proof of Stake blockchain network. This entity contributes to the security and consensus of the network by either directly participating as a validator or by delegating their staked assets to a validator. In return, the Stakeholder earns staking rewards, reflecting their contribution to the network's operation.

4 Index Parameters

4.1 Index Denomination

Indices in the CF Staking Reward Rate Series are denominated in the index underlying asset.

Indices in the CF Staked Return Index Series are denominated in U.S. Dollar.

Indices in the CF Staked Return Index Blends Series are denominated in U.S. Dollar.

4.2 Calculation & Publication Frequency

The Index shall be calculated at the frequency stated in the Index Parameter Table – Section 9.

4.3 Constituent Weighting

Constituents of an Index in the CF Staked Return Index Blends Series are fixed weighted. The Constituent weights are defined in the Index Parameter Table - Section 9.

4.4 Index Constituent Pricing Sources (Input Data)

4.4.1 Settlement Price

An Index in the CF Staked Return Index Series or the CF Staked Return Index Blends Series Constituent Pricing Source shall be the CF Settlement Prices and CME CF Reference Rates available at www.cfbenchmarks.com. The respective methodologies for each of these pricing sources are available at www.cfbenchmarks.com.

4.5 Rebalance Price Determination Time

An Index in the CF Staked Return Index Blends Series time of the price determination used in the rebalance weight calculation and specified in the Index Parameter Table – Section 9.

4.6 Rebalance Implementation Point

An Index in the CF Staked Return Index Blends Series Rebalance Implementation Point is at the Calculation & Publication time on the first business day of Rebalance month.

4.7 Rebalance Determination Pricing Sources

An Index in the CF Staked Return Index Blends Series Rebalance Determination Pricing Source shall be the CF Benchmarks Reference Rates, Settlement Prices, or other CF Benchmarks pricing sources. The respective methodologies for each of these pricing sources is available at www.cfbenchmarks.com. Should these sources become permanently unavailable then CF Digital Asset Index Family Ground Rules - Section 6 Input Data Hierarchy shall be applied after review by the CF Cryptocurrency Index Family Oversight Function ("**the Function**" or "**the Oversight Function**").

5 Methodology

5.1 Qualitative Description

The CF Staking Series is composed of three sub-Series:

- CF Staking Reward Rate Series,
- CF Staked Return Index Series,
- CF Staked Return Index Blends Series.

5.1.1 Qualitative Description: CF Staking Reward Rate Series

A staking reward rate in the CF Staking Reward Rate Series is calculated daily and aims to represent the reward rate net of fees obtained when staking the digital asset on its native blockchain and is represented in annualised percentage form. The reward rates will cover all rewards a **Stakeholder** receives for staking its tokens and participating in the core activities of the blockchain. Those rewards tokens have to be in the form of the blockchain native digital asset and be fungible after the blockchain respective un-staking period.

The published reward rate will be the aggregation of the contributions. Contributions that exceed Potential Erroneous Reward Rate parameters are excluded from the calculation (see Section 6.3).

5.1.2 Qualitative Description: CF Staked Return Series

A staked return index in the CF Staked Return Index Series is calculated daily and aims to represent the sum of an asset's daily performance level and its daily staking reward rate. CF Staked Return Index is declined in two variants:

- CF Staked Return Index main variant is calculated using a simple interest mechanism.
- CF Staked Return Index compounded variant is calculated using a compounded interest mechanism.

5.1.3 Qualitative Description: CF Staked Return Index Blends Series

A staked return index in the CF Staked Return Index Series is calculated daily and aims to represent the performance of a portfolio of non-staked assets and staked assets. The portfolio is fixed weighted and rebalances quarterly.

5.2 Mathematical Representation

5.2.1 CF Staking Reward Rate Calculation

The following table shows the symbols used in the mathematical representation of CF Staking Reward Rate Series.

Symbol	Name	Description	Type
T	Effective time	The time at which the Index is calculated	Parameter, see Section 9
c	Contributor	The Contributing Staking Service Provider	Parameter, see Section 9
RDT_j , $j \in \{1, N\}$	Reward Distribution Time of the Finalized Reward Period j	The time at which the rewards of Finalized Reward Period j within the Observable Time Window are distributed and observable on the public ledger. No staking reward distribution within the Observable Time Window is possible	Input
RDT_0	Last Reward Distribution Time	The time at which the last rewards prior to the Observable Time Window has been distributed and observable on the public ledger	Input
$DAYS(RDT_N - RDT_0)$	Effective Period in Days	The time difference between RDT_N and RDT_0 in days, not rounded.	Input
$R_{c,j,i}$	Total Stakeholder Reward Amount	The sum of all rewards for the Stakeholder i for Contributing Staking Service Provider c at time RDT_j	Input
$R_{c,j}$	Total reward amount	The sum of all rewards across all Stakeholders for Contributing Staking Service Provider c at time RDT_j	Calculated
$Fee_{c,j}$	Contributor fee	Fee paid to the Contributing Staking Service Provider at time RDT_j in percentage	Input
$SA_{c,j}$	Total Stakeholder staked amount	Total Asset Staked amount across of all Stakeholders of Contributing Staking Service Provider c at time RDT_j	Input
$SRR_{c,j}$	Reward Rate	Reward rate of Contributing Staking Service Provider c at time RDT_j	Calculated
SRR_c	Contributed Reward Rate	Annualised reward rate for Contributing Staking Service Provider c	Calculated

SRR_T	CF Staking Reward Rate	CF Staking Reward Rate calculated at time T	Calculated
P_T	Price	Daily price of the asset at time T	Parameter, Section 9
SRI_T	CF Staked Return Index	CF Staked Return Index calculated at time T – Simple Interest	Calculated
SRI_T^c	CF Staked Return Index – Compounded	CF Staked Return Index calculated at time T – Daily Compounded	Calculated
SRI_0	Initial Value	Index Value at inception	Parameter, Section 9
C	Set of Contributors	Number of Contributing Staking Service Provider	Parameter, Section 9
I_c	Set of Stakeholders	Set of Stakeholders for Contributing Staking Service Provider c	Input
N	Number of Reward Period	Number of Finalized Reward Period with Finality in the Observable Time Window.	Input
ACT	Observable Time Window Length	Length in days of the Observable Time Window	Parameter, see Section 9
$PEDP$	Potential Erroneous Data Parameter	Maximum deviation from an aggregated contributing reward rate to the median of all reward rates	Parameter, see Section 9

The sum of all staking rewards across all **Stakeholders** for Contributing Staking Service Provider c at time RDT_j :

$R_{c,j} = \sum_{i=1}^{I_c} R_{c,j,i}$	Eq. 1
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The reward rate of Contributing Staking Service Provider c at time RDT_j :

$SRR_{c,j} = \frac{R_{c,j}}{SA_{c,j}}$	Eq. 2
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Based on the Parameter table defined in Section 9, if the Staking Reward Rate annualization does not use compounded interest the **Contributed Reward Rate of Contributing Staking Service Provider c** is:

$SRR_c = \left(\frac{1}{N} \sum_{j=1}^N SRR_{c,j} \right) * 365 / DAYS(RDT_N - RDT_0)$	Eq. 3.1
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Based on the Parameter table defined in Section 9, if the Staking reward rate annualization uses compounded interest the **Contributed Reward Rate of Contributing Staking Service Provider c** is:

$SRR_c = \left(1 + \frac{1}{N} \sum_{j=1}^N SRR_{c,j} \right)^{\frac{365}{DAYS(RDT_N - RDT_0)}} - 1$	Eq. 3.2
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The above formula is calculated based on the following conventions: simple interest, UK Money Market day count fraction ACT/365 Fixed.

At time T, the median of all aggregated contributing reward rates is:

$\widehat{SRR} = \text{MEDIAN}(SRR_c)$	Eq. 4
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At time T, the Potential Erroneous Data are removed from the input dataset:

$PED = \left\{ SRR_c \text{ such that } \frac{ SRR_c - \widehat{SRR} }{\widehat{SRR}} > PEDP \text{ for all } c \in C \right\}$	Eq. 5
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At time T, the CF Staking Reward Rate is:

$SRR_T = \frac{1}{N_{eff}} * \sum_{c=1}^{C \setminus PED} SRR_c$	Eq. 6
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with $N_{eff} = |C| - |PED|$, where $|PED|$ is the number of potentially erroneous contributor.

Note: The CF Staking Reward Rate is rounded as per the Table Parameter in section 9.

5.2.2 CF Staked Return Index Calculation

Note: The symbols for this section are the same used in the section above 5.2.1.

At time T, the CF Staked Return Index:

In the case where the Staking Reward Rate has simple interest:

$\begin{cases} SRI_T = SRI_{T-1} * \frac{P_T}{P_{T-1}} + SRI_0 * \frac{P_T}{P_0} * SRR_T * \frac{DAYS(RDT_N - RDT_0)}{365}, & \text{if } T > 0 \\ SRI_T = SRI_0, & \text{if } T = 0 \end{cases}$	Eq. 7.1
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In the case where the Staking Reward Rate has compounded interest:

$\begin{cases} SRI_T = SRI_{T-1} * \frac{P_T}{P_{T-1}} + SRI_0 * \frac{P_T}{P_0} * ((1 + SRR_T)^{\frac{DAYS(RDT_N - RDT_0)}{365}} - 1), & \text{if } T > 0 \\ SRI_T = SRI_0, & \text{if } T = 0 \end{cases}$	Eq. 7.2
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At time T, the CF Staked Return Index – Compounded:

In the case of simple interest Staking Reward Rate:

$\begin{cases} SRI_T^C = SRI_{T-1}^C * \frac{P_T}{P_{T-1}} * (1 + SRR_T * \frac{DAYS(RDT_N - RDT_0)}{365}), & \text{if } T > 0 \\ SRI_T^C = SRI_0^C, & \text{if } T = 0 \end{cases}$	Eq. 8.1
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In the case of compounded interest Staking Reward Rate:

$\begin{cases} SRI_T^C = SRI_{T-1}^C * \frac{P_T}{P_{T-1}} * ((1 + SRR_T)^{\frac{DAYS(RDT_N - RDT_0)}{365}}), & \text{if } T > 0 \\ SRI_T^C = SRI_0^C, & \text{if } T = 0 \end{cases}$	Eq. 8.2
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5.2.3 CF Staked Return Index Blends Calculation

Symbol	Name	Description	Type
T	Effective time	The time at which the Index is calculated	Parameter, see Section 9

k_i	Rebalance Implementation time	The time when the rebalance parameters are implemented at the i^{th} rebalance	Parameter, see Section 9
s_i	Rebalance Price Determination Time	The time of the price determination used at the i^{th} rebalance	Parameter, see Section 9
$c \in C_i$	Index Constituents	The list of constituents that are determined to be index constituents at the i^{th} rebalance	Parameter, see Section 9
w_i^a	Weights	The weight of constituent a effective at the i^{th} rebalance	Parameter, see Section 9
g_i^a	Relative Supply	The relative supply of constituent a at the i^{th} rebalance	Calculated
q_{s_i}	Rebalance Determination Price	The price of constituent c used at the Rebalance Price Determination Time s_i .	Input
P_T^a	Constituent Pricing Source	The price of constituent a at time T	Input
PSB_i	Index Price	Price of the CF Staked Return Index Blends at time T	Calculated
d_i	Divisor	Divisor used for the i^{th} rebalance	Calculated
R_i	Return Factor	Return factor for the i^{th} rebalance	Calculated
A_i	Return amount	Return Amount for the i^{th} rebalance	Input

Usage of Parameters between Variants: Parameters q_i^a , P_T^a , R_i , A_i and PSB_i are different between variants of this index family. Each section shall apply to each variant independently, except for those equations which have parameters marked with the variant label:

Type	Label
Spot Rate	RTI
Settlement Price	RR
Total Return	TR
Price Return	PR

5.2.3.1 Supply Calculation

The relative supplies g_i^a can be inferred from the weights w_i^a using the following relation:

$\begin{cases} g_1^a = \frac{w_1^a PSB_1}{e_1^a}, & \text{for } i = 1 \\ g_i^a = \frac{w_i^a \sum_{a \in C_i} g_{i-1}^a e_i^a}{e_i^a}, & \text{for } i > 1 \end{cases}$	Eq. 9
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The Index inception value PSB_1 is define in the Index Parameter Table – section 9.

5.2.3.2 Index Calculation

The index value at time T where $k_i \leq T < k_{i+1}$ is given by

$PSB_i = \frac{R_i}{d_i} \sum_{a \in C_i} g_i^a P_T^a$	Eq. 10
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About R_i :

At index inception there are no distributions or deductions hence $R_1 = 1$.

Distribution and Deductions refers to **Section 8 Treatment of Distributions** and **Section 9 – Treatment of Deductions** of the **CF Digital Asset Index Family - Multi Asset Series**, which covers how forks, airdrops, rewards not related to staking, and deduction events.

If the application point of distribution and deduction events is at the i^{th} rebalance, let the Return Amount A_i be the sum of all Distribution Proceeds and Deductions Amounts from said events. Then the return factor shall be:

$\begin{cases} R_i^{TR} = R_{i-1}^{TR} \left(1 + \frac{A_i}{\sum_{a \in C_{i-1}} g_{i-1}^a e_i^{a,RR}} \right), & \text{for all } i \geq 2, \\ R_i^{PR} = 1 \end{cases}$	Eq. 11
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About d_i :

The divisor is used to scale the index so that the value of the index is fixed at inception and continuous at each rebalancing. The divisor factor shall be:

$\left\{ \begin{array}{l} d_1 = \frac{1}{PSB_1} \sum_{c \in C_1} g_{k_1}^c p_{k_1}^{c,RR} \\ d_i = d_{i-1} \cdot \frac{\sum_{c \in C_i} g_{k_i}^c \varrho_{k_i}^{c,RR}}{\sum_{c \in C_{i-1}} g_{k_{i-1}}^c \varrho_{k_{i-1}}^{c,RR}} \end{array} \right.$	<p>Eq. 12</p>
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6 Contingency Calculation Rules

6.1 No Expected Data

Expected lack of data is treated according to the following rules:

1. If no staking reward distribution are observed for all **Stakeholders** of all staking service providers on the public blockchain/ledger, the published value shall be 0 and shall be marked by a maker (**).

6.2 Delayed Data and Missing Data

Delayed data is treated according to the following rules:

1. If the Retrieval Time of Reward Period input data of a **Contributing Staking Service Provider** is older than the **Publication Time**, the **Contributing Staking Service Provider** Reward Period input data is excluded from the calculation of the CF Staking Reward Rate during this day.
2. If the Retrieval Times of the contributing reward rates of all or all but one **Contributing Staking Service Providers** are older than the **Publication Time**, a CF Staking Reward Rate Calculation Failure will be deemed to have occurred (see Section 6.5).
3. If no Staked Amount is observed on all or all but one **Contributing Staking Service Providers** on a given Calculation Day, then a CF Staking Reward Rate Market Failure Event will be deemed to have occurred (see Section 8).

6.3 Erroneous Reward Rates

All Relevant Contributed Reward Rates are subject to an automated filtering process according to the following rule.

- If a Relevant **Contributed Reward Rate** contains any entries with a non-numeric or non-positive reward rate, then any such entries are flagged as erroneous.
- If a Relevant Contributed Reward Rate contains less than 50% of Reward Periods in the **Observable Time Window**, then any such entry is flagged as erroneous.

All entries in a **Contributed Reward Rate** which are flagged as erroneous for a given **Observable Time Window** are disregarded in the calculation of the CF Staking Reward Rate for that **Observable Time Window**.

6.4 Potential Erroneous Reward Rates

All retrieved **Contributor Reward Rate** by the Calculation Agent for a given Calculation Day are subject to an automated screening for potentially erroneous data according to the following rules:

1. For each **Contributor Reward Rate**, the absolute percentage deviation from the median of the **Contributor Reward Rates** of all **Contributing Staking Service Providers** is calculated.
2. If for any **Contributing Staking Service Provider** the absolute percentage deviation, as calculated in the previous step, exceeds the Potentially Erroneous Data Parameter (see section 9) then the **Contributor Reward Rate** for that **Contributing Staking Service Provider** is flagged as potentially erroneous.

Contributor Reward Rates flagged as potentially erroneous for a given Calculation Day are disregarded in the calculation of the CF Staking Reward Rate for that Calculation Day. The occurrence of any such flag is reported to the Oversight Function. If all **Contributor Reward Rates** of all **Contributing Staking Service Providers** are flagged as potentially erroneous for a given Calculation Day, a calculation failure occurs for that Calculation Day (see Section 6.5).

6.5 Delayed Calculation & Publication

Where for any reason the Administrator is not able to calculate and publish either Prices for the CF Staking Reward Rate Series, CF Staked Return Index Series or CF Staked Return Index Blends Series (“CF Staking Series Prices”) within the Dissemination Time on any given Calculation Day then the Administrator shall clearly communicate to all licensees via Status page that calculation and publication has been delayed. The Administrator will seek to publish the CF Staking Series Prices for that Calculation Day as soon as it is able to. Should the Administrator not be able to calculate and publish any of the CF Staking Series Prices by 23:59:59 London time then the provisions of Rule 6.6 shall come into effect.

6.6 Expert Judgement

The Administrator does not utilise expert judgement in the day-to-day calculation of the CF Staking Reward Rate. In extraordinary circumstances Expert Judgement may be exercised by the Administrator in accordance with its codified policies and processes which are available upon request.

6.7 Calculation Failure

If a CF Staking Reward Rate cannot be calculated for a given **Observable Time Window**, for instance because:

- the retrieval times of the **Contributor Network Reward Rates** of all **Contributing Staking Service Providers** are each older than the end of the **Calculation Time**, or

- all Relevant **Contributor Reward Rates** are flagged as erroneous or potentially erroneous (see Sections 6.2 and 6.3); or
- any other reason or circumstance that prevents the orderly calculation of a CF Staking Reward Rate,

then the CF Staking Reward Rate for that Calculation Day is given by the CF Staking Reward Rate published on the previous Calculation Day and this Reward Rate value shall be published and an indication will be given that the clause has been applied.

The occurrence of any CF Staking Reward Rate calculation failure is reported to the Oversight Function. Any Calculation Failure events will be clearly communicated to all licensees via Statuspage.

7 Restatement & Republishing

CF Staking Series Indices are subject to restatement and republishing before 23:59:59 London time of any given Calculation Day due to errors made by the Calculation Agent or its systems. CF Staking Series Indices will not be subject to republishing after this time.

7.1 Restatement of a CF Staking Series Index Value with a Replacement CF Staking Series Index Value

The Administrator shall only Restate and Republish CF Staking Series Index if both the below conditions are met:

1. **Timeliness** – where the Administrator can **RESTATE** and **REPUBLISH** a CF Staking Series Index value before 23:59:59 of the given Calculation Day
2. **Materiality** – where the **RESTATED** CF Staking Series Index has an absolute variance greater than 0.20% for the respective CF Staking Series Index for the given Calculation Day

Example:

- A CF Staking Series Index on a given Calculation Day is published as 0.0550
- A CF Staking Series Index will only be RESTATED if it is:
 - o Greater than 0.0551 OR
 - o Less than 0.0549

Where the above conditions are met the Administrator shall clearly communicate to all licensees via Statuspage that a restatement and republishing of the CF Staking Series Index will take place for that Calculation Day. The Administrator shall restate the impacted CF Staking Series Index as soon as possible and shall do so by overwriting the previously published CF Staking Series Index. This restated CF Staking Series Index will carry no mark when published and will be final and not subject to any further change or republication.

8 Market Failure Event

Where a Market Failure Event has occurred, this shall be clearly communicated to all licensees via Status page. The CF Staking Reward Rate, CF Staked Return Index or CF Staked Return Index Blends on a day where a Market Failure Event has occurred shall be given by the CF Staking Reward Rate; CF Staked Return Index or CF Staked Return Index Blends published for the previous Calculation Day. Any CF Staking Reward Rate, CF Staked Return Index or CF Staked Return Index Blends published on a day when a Market Failure Event has occurred shall be marked by a maker (*).

The occurrence of a Market Failure Event is reported to the Oversight Function.

9 Staking Reward Rate Parameters

9.1 Parameters

9.1.1 CF Staking Reward Rate Series

Name	CF ETH Staking Reward Rate Index
Ticker	ETH_SRR
PEDP	50%
Observable Time Window	00:00 am UTC included until 00:00 am UTC excluded
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Reward Period	Each Epoch
Finality Time	Two epochs
Stakeholder	Validator
Interest Calculation Method	Simple Interest
Maximum number of Staking Service Providers	5
Digital Asset Amount associated with the Staking Service Provider Fee	320 ETH
Decimals Precision	6

Name	CF SOL Staking Reward Rate Index
Ticker	SOL_SRR
PEDP	20%
Observable Time Window	00:00 am UTC included until 00:00 am UTC excluded

Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Reward Period	Each Epoch
Finality Time	Ten slots
Stakeholder	Delegators of the Staking Service Providers validators
Interest Calculation Method	Compounded Interest
Maximum number of Staking Service Providers	5
Digital Asset Amount associated with the Staking Service Provider Fee	N/A – Staking Service Provider Fee is defined on the protocol level
Decimals Precision	6

9.1.2 CF Staked Return Index Series

Name	CF ETH Staked Return Index
Ticker	ETHUSD_SRI
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Price Source	CME CF Ether-Dollar Reference Rate
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Interest Calculation Method	Simple Interest
Decimals Precision	4

Name	CF ETH Staked Return Index - Compounded
Ticker	ETHUSD_SRIC
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Price Source	CME CF Ether-Dollar Reference Rate
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Interest Calculation Method	Compounded Interest
Decimals precision	4

Name	CF SOL Staked Return Index
Ticker	SOLUSD_SRIC
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Price Source	CME CF Solana Dollar Reference Rate
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)
Interest Calculation Method	Compounded Interest
Decimals precision	4

9.1.3 CF Staked Return Index Blends Series

Name	CF ETH Staked Return Index Blends (90/10)
Ticker	ESRIB90LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 90% - CME CF Ether-Dollar Reference Rate: 10%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF ETH Staked Return Index Blends (80/20)
Ticker	ESRIB80LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 80% - CME CF Ether-Dollar Reference Rate: 20%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return

Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF ETH Staked Return Index Blends (70/30)
Ticker	ESRIB70LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 70% - CME CF Ether-Dollar Reference Rate: 30%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF ETH Staked Return Index Blends (60/40)
Ticker	ESRIB60LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 60% - CME CF Ether-Dollar Reference Rate: 40%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec

Return Types	Total Return
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF ETH Staked Return Index Blends (50/50)
Ticker	ESRIB50LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 50% - CME CF Ether-Dollar Reference Rate: 50%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF ETH Staked Return Index Blends (40/60)
Ticker	ESRIB40LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 40% - CME CF Ether-Dollar Reference Rate: 60%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time

Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF ETH Staked Return Index Blends (30/70)
Ticker	ESRIB30LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 30% - CME CF Ether-Dollar Reference Rate: 70%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF ETH Staked Return Index Blends (20/80)
Ticker	ESRIB20LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 20% - CME CF Ether-Dollar Reference Rate: 80%
Calculation & Publication Frequency	Once per day, 365 days a year

Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF ETH Staked Return Index Blends (10/90)
Ticker	ESRIB10LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF ETH Staked Return Index - Compounded: 10% - CME CF Ether-Dollar Reference Rate: 90%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	20 th November 2023
Inception Value	2040.79 (CME CF Ether Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF SOL Staked Return Index Blends (90/10)
Ticker	SSRIB90LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 90% - CME CF Solana-Dollar Reference Rate: 10%

Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF SOL Staked Return Index Blends (80/20)
Ticker	SSRIB80LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 80% - CME CF Solana-Dollar Reference Rate: 20%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF SOL Staked Return Index Blends (70/30)
Ticker	SSRIB70LDN_RR_TR

Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 70% - CME CF Solana-Dollar Reference Rate: 30%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)
Decimals precision	4

Name	CF SOL Staked Return Index Blends (60/40)
Ticker	SSRIB60LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 60% - CME CF Solana-Dollar Reference Rate: 40%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)

Name	CF SOL Staked Return Index Blends (50/50)
Ticker	SSRIB50LDN_RR_TR

Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 50% - CME CF Solana-Dollar Reference Rate: 50%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)

Name	CF SOL Staked Return Index Blends (40/60)
Ticker	SSRIB40LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 40% - CME CF Solana-Dollar Reference Rate: 60%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)

Name	CF SOL Staked Return Index Blends (30/70)
Ticker	SSRIB30LDN_RR_TR

Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 30% - CME CF Solana-Dollar Reference Rate: 70%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)

Name	CF SOL Staked Return Index Blends (20/80)
Ticker	SSRIB20LDN_RR_TR
Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 20% - CME CF Solana-Dollar Reference Rate: 80%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)

Name	CF SOL Staked Return Index Blends (10/90)
Ticker	SSRIB10LDN_RR_TR

Constituent Weights	<ul style="list-style-type: none"> - CF SOL Staked Return Index - Compounded: 10% - CME CF Solana-Dollar Reference Rate: 90%
Calculation & Publication Frequency	Once per day, 365 days a year
Publication Time	Between 16:05 and 16:30 London time
Rebalance Frequency	Quarterly – 1 st business day of March, June, Sept, Dec
Return Types	Total Return
Inception Date	1 st March 2024
Inception Value	132.15 (CME CF Solana Dollar Reference Rate on Inception Date)

9.2 Staking Service Providers Details

CF ETH Staking Reward Rate

- Blockdaemon, <https://www.blockdaemon.com/>
- Figment, <https://figment.io/>
- Kiln, <https://www.kiln.fi/>
- Staked, <https://staked.us/>¹

CF SOL Staking Reward Rate

- Blockdaemon, <https://www.blockdaemon.com/>
 - o Validator ID: CAo1dCGYrB6NhHh5xb1cGjUiu86iyCfMTENxgHumSve4
- Kiln, <https://www.kiln.fi/>
 - o Validator ID: 5pPRHniefFjkiArbGX3Y8NUysJmQ9tMZg3FrFGwHzSm

¹ Payward, Inc. is the owner and operator of Staked, a provider of block production and validation nodes for decentralized PoS protocols on behalf of institutional investors. Staked.us is a source of input data for certain CF Benchmarks indices.

- Staked, <https://staked.us/>²
 - o Validator ID: 7cVfgArCheMR6Cs4t6vz5rfnqd56vZq4ndaBrY5xkxXy

² Payward, Inc. is the owner and operator of Staked, a provider of block production and validation nodes for decentralized PoS protocols on behalf of institutional investors. Staked.us is a source of input data for certain CF Benchmarks indices.

10 Methodology and Review Changes

This methodology is subject to internal review by the Administrator and the Oversight Function at least annually.

Any changes to this methodology are overseen by the Oversight Function, and in accordance with UK BMR Article 13.

All *material* changes to the methodology shall only be implemented after a consultation process with users and relevant stakeholders that shall be conducted according to the Administrator's policies and overseen by the Oversight Function.

Should the Administrator deem it necessary to cease providing any of the Reward Rates it shall only do so after a consultation process with users and relevant stakeholders that shall be conducted according to the Administrator's policies and overseen by the Oversight Function.

Contact Information

CF Benchmarks Ltd

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