INDEX GUIDELINE

HSBC US Variance Replication 1 Index
HSBC US Variance Replication 2 Index

Version 1.1

30 September 2025

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INTRODUCTION

This document (the "**GUIDELINE**") is to be used as a guideline with regard to the composition, calculation and maintenance of the following two indices: (i) HSBC US Variance Replication 1 Index, and (ii) HSBC US Variance Replication 2 Index (each such index, the "**INDEX**"). References herein to the "INDEX" shall refer to each INDEX individually and this GUIDELINE shall be construed accordingly. Any amendments to the rules made to the GUIDELINE are approved by the INDEX COMMITTEE specified in Section 5.5. The INDEX is calculated, administered and published by Solactive AG ("**SOLACTIVE**") assuming the role as administrator (the "**INDEX ADMINISTRATOR")** under the Regulation (EU) 2016/1011 (the "**BENCHMARK REGULATION**" or "**BMR**"). The name "Solactive" is trademarked.

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The text uses defined terms which are formatted with "SMALL CAPS". Such Terms shall have the meaning assigned to them as specified in Section 6 (Definitions).

1. INDEX SPECIFICATIONS

1.1. SCOPE OF THE INDEX

Category	Description
Asset Class	Equity
Strategy	The INDEX is a rules-based strategy that aims to capture certain elements of performance associated with over-the-counter variance swaps. The INDEX notionally enters into a short position on a portfolio comprised of five static sets of S&P 500 Index listed options, with each set having different expiration dates (each set, a "**Variance Replication**"). Such options are delta hedged on an hourly basis. The Vega notional traded is equally divided amongst the five Variance Replications[1]. The INDEX is calculated on a notional basis. The investment exposure provided by the INDEX to the options referenced in the INDEX is purely synthetic and an investor in the INDEX will have no rights in respect of any such options. For the avoidance of doubt, any reference herein to options being "entered into" is purely on a notional basis.
Regional Allocation	North America

Table 1 Index Overview

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	Index Currency	Type	BBG ticker	RIC
HSBC US Variance Replication 1 Index	DE000SL0NRR5	USD	Excess Return	HSIESGU1 Index	.HSIESGU1
HSBC US Variance Replication 2 Index	DE000SL0NRS3	USD	Excess Return	HSIESGU2 Index	.HSIESGU2
HSBC US Variance Replication 1 Indicative Index	DE000SL0NRR5	USD	Excess Return	HSIOSGU1 Index	.HSIOSGU1
HSBC US Variance Replication 2 Indicative Index	DE000SL0NRS3	USD	Excess Return	HSIOSGU2 Index	.HSIOSGU2

Each INDEX is published on the website of the INDEX ADMINISTRATOR (www.solactive.com) and is, in addition, available via the price marketing services of Boerse Stuttgart GmbH and may be distributed to all of its affiliated vendors. Each vendor decides on an individual basis as to whether it will distribute or display the INDEX via its information systems.

[1] Prior to the TRANSITION DATE, there were three Variance Replications.

Any publication in relation to the INDEX (e.g. notices, amendments to the GUIDELINE) will be available at the website of the INDEX ADMINISTRATOR: https://www.solactive.com/news/announcements/.

1.3. INITIAL LEVEL OF THE INDEX

The initial level of the INDEX on the START DATE is 100. Historical values from the LIVE DATE will be recorded in accordance with Article 8 of the BMR. Levels of the INDEX published for a period prior to the LIVE DATE have been back-tested using exchange prices. Levels of the INDEX published for the period falling prior to 1st August 2022 have been provided by the INDEX OWNER to the INDEX ADMINISTRATOR. The INDEX OWNER has obtained the listed options available from REFINITIV and calculated the levels of the INDEX for the period of START DATE to LIVE DATE.

1.4. PRICES AND CALCULATION FREQUENCY

The levels of the HSBC US VARIANCE REPLICATION 1 INDEX and HSBC US VARIANCE REPLICATION 2 INDEX are calculated in respect of each CALCULATION DAY t and is published at 09:00 a.m. CET on the CALCULATION DAY immediately following CALCULATION DAY t. The levels of the HSBC US VARIANCE REPLICATION 1 INDICATIVE INDEX and HSBC US VARIANCE REPLICATION 2 INDICATIVE INDEX are calculated in respect of each CALCULATION DAY t and is published at 05:00 p.m. EST on the CALCULATION DAY t.

1.5. LICENSING

Licenses to use the INDEX as the underlying value for financial instruments, investment funds and financial contracts may be issued to stock exchanges, banks, financial services providers and investment houses by the INDEX OWNER.

2. INDEX SELECTION

2.1. SELECTION OF INDEX COMPONENTS

On each CALCULATION DAY t that is an EXPIRATION DATE in respect of a LISTED OPTION but not a HALF TRADING DAY, a synthetic portfolio of several Variance Replications ("VR_t^i") is notionally traded in connection with the INDEX.

The parameters of the INDEX, and the characteristics of the traded OPTIONS in respect of each of the Variance Replications, differ depending upon the CALCULATION DAY t in respect of which notional trading occurs:

(a) Effective up to, but excluding, the TRANSITION DATE, the parameters of the INDEX and the characteristics of traded OPTIONS in respect of each of the Variance Replications, are defined below in: "*Table 2: Old Index Parameters*" and "*Table 4: Old Options' Characteristics*";

(b) Effective from, and including, the TRANSITION DATE, the parameters of the INDEX and the characteristics of traded OPTIONS in respect of each of the Variance Replications, are defined below in: "*Table 3: New Index Parameters*" and "*Table 5: New Options' Characteristics*".

PARAMETER	GUIDELINES NOTATION	HSIESGU1	HSIESGU2
UNDERLYING INDEX		SPX Index	SPX Index
LISTED OPTIONS		S&P 500 Weekly Options	S&P 500 Weekly Options
VEGA SIZING	VS_{VR}	$0.01\% \times \frac{5}{3}$	$0.02\% \times \frac{5}{3}$
STRIKE STEP	$Step_{VR}$	25	25
DELTA HEDGE FEE	dhf	0.01%	0.01%
FRICTION	f	0.15%	0.15%

Table 2: Old Index Parameters

PARAMETER	GUIDELINES NOTATION	HSIESGU1	HSIESGU2
UNDERLYING INDEX		SPX Index	SPX Index
LISTED OPTIONS		S&P 500 Weekly Options	S&P 500 Weekly Options
VEGA SIZING	VS_{VR}	0.01%	0.02%
STRIKE STEP	$Step_{VR}$	25	25
DELTA HEDGE FEE	dhf	0.01%	0.01%

FRICTION	f	0.15%	0.15%

Table 3: New Index Parameters

VARIANCE REPLICATION NAME	**GUIDELINES NOTATION**	$VR1_t$	$VR2_t$	$VR3$
TRADE DATE	TD_{VR}	CALCULATION DAY t		
EXPIRATION DATE	TE_{VR}	$M1_t$	$M2_t$	$M3_t$
UNWIND DATE	TU_{VR}	$M1_t$	$M2_t$	$M3_t$
WEIGHT	w_{VR}	-40%	-40%	-20%
LOWER EXECUTION BOUND	LEB_{VR}	$LEB1_{t-1}$	$LEB2_{t-1}$	$LEB3_{t-1}$
UPPER EXECUTION BOUND	UEB_{VR}	$UEB1_{t-1}$	$UEB2_{t-1}$	$UEB3_{t-1}$
LOWER THEORETICAL BOUND	LTB_{VR}	$LTB1_{t-1}$	$LTB2_{t-1}$	$LTB3_{t-1}$
UPPER THEORETICAL BOUND	UTB_{VR}	$UTB1_{t-1}$	$UTB2_{t-1}$	$UTB3_{t-1}$
VARIANCE STRIKE	$Kvar_{VR}$	$Kvar1_{t-1}$	$Kvar2_{t-1}$	$Kvar3_{t-1}$

Table 4: Old Options' Characteristics

VARIANCE REPLICATION NAME	**GUIDELINES NOTATION**	$VR1_t$	$VR2_t$	$VR3$	$VR4_t$	$VR5_t$
TRADE DATE	TD_{VR}	CALCULATION DAY t				
EXPIRATION DATE	TE_{VR}	$M1_t$	$M2_t$	$M3_t$	$M4_t$	$M5_t$
UNWIND DATE	TU_{VR}	$M1_t$	$M2_t$	$M3_t$	$M4_t$	$M5_t$
WEIGHT	w_{VR}	-20%				
LOWER EXECUTION BOUND	LEB_{VR}	$LEB1_{t-1}$	$LEB2_{t-1}$	$LEB3_{t-1}$	$LEB4_{t-1}$	$LEB5_{t-1}$
UPPER EXECUTION BOUND	UEB_{VR}	$UEB1_{t-1}$	$UEB2_{t-1}$	$UEB3_{t-1}$	$UEB4_{t-1}$	$UEB5_{t-1}$
LOWER THEORETICAL BOUND	LTB_{VR}	$LTB1_{t-1}$	$LTB2_{t-1}$	$LTB3_{t-1}$	$LTB4_{t-1}$	$LTB5_{t-1}$
UPPER THEORETICAL BOUND	UTB_{VR}	$UTB1_{t-1}$	$UTB2_{t-1}$	$UTB3_{t-1}$	$UTB4_{t-1}$	$UTB5_{t-1}$
VARIANCE STRIKE	$Kvar_{VR}$	$Kvar1_{t-1}$	$Kvar2_{t-1}$	$Kvar3_{t-1}$	$Kvar4_{t-1}$	$Kvar5_{t-1}$

Table 5: New Options' Characteristics

With:

Mi_t: for each i from 1 to 5, means the i-th ELIGIBLE LISTED EXPIRATION DATE falling after CALCULATION DAY t, provided that for the purposes of day counting any date that is not a CALCULATION DAY shall be excluded from the counting process.

$LEBi_{t-1}$: for each i from 1 to 5, is the Lower Execution Bound for Variance Replication VRi_t, computed on CALCULATION DAY t-1, and equal to the STRIKE PRICE of a PUT OPTION with EXPIRATION DATE Mi_t, such that the DELTA as defined in Section 4.2.4 is equal to -2% (with the following boundaries $70\% \times S_{t-1}$ and S_{t-1}).

$UEBi_{t-1}$: for each i from 1 to 5, is the Upper Execution Bound for Variance Replication VRi_t, computed on CALCULATION DAY t-1, and equal to the STRIKE PRICE of a CALL OPTION with EXPIRATION DATE Mi_t, such that the DELTA as defined in Section 4.2.4 is equal to +2% (with the following boundaries S_{t-1} and $130\% \times S_{t-1}$).

$LTBi_{t-1}$: for each i from 1 to 5, is the Lower Theoretical Bound for Variance Replication VRi_t, computed on CALCULATION DAY t-1, calculated according to the following formula:

$$LTBi_{t-1} = 80\% \times S_{t-1}$$

$UTBi_{t-1}$: for each i from 1 to 5, is the Upper Theoretical Bound for Variance Replication VRi_t, computed on CALCULATION DAY t-1, calculated according to the following formula:

$$UTBi_{t-1} = 110\% \times S_{t-1}$$

S_{t-1}: the closing level of the UNDERLYING INDEX on CALCULATION DAY t-1.

$Kvari_{t-1}$: for each i from 1 to 5, is the VARIANCE STRIKE for Variance Replication VRi_t computed on CALCULATION DAY t-1.

2.1.1. Calculation of VARIANCE STRIKE

On CALCULATION DAY t, for each i from 1 to 5 the VARIANCE STRIKE $Kvari_{t-1}$ for Variance Replication VRi_t is computed according to the following formula:

$$Kvari_{t-1} = \sqrt{\frac{2 \times (PutContrib_{t-1,Mi_t} + CallContrib_{t-1,Mi_t} + StraddleContrib_{t-1,Mi_t})}{DCF(t-1, Mi_t)}}$$

Where:

$$PutContrib_{t-1,Mi_t} = \sum_{\substack{j=1 \\ K_j < K_0 \\ K_j \geq \min(LTBi_{t-1}, LEBi_{t-1})}}^{|ELSP_{t-1}|} \frac{Abs(K_j - K_{j-1})}{{K_j}^2} ListedPut^{Mid}_{t-1,Mi_t,K_j}$$

And

$$CallContrib_{t-1,Mi_t} = \sum_{\substack{j=1 \\ K_j>K_0 \\ K_j \leq \max(UTBi_{t-1}, UEBi_{t-1})}}^{|ELSC_{t-1}|} \frac{Abs(K_j - K_{j-1})}{{K_j}^2} ListedCall^{Mid}_{t-1,Mi_t,K_j}$$

And

$$StraddleContrib_{t-1,Mi_t} = \frac{0.5 \times Step_{VR}}{{K_0}^2} (ListedCall^{Mid}_{t-1,Mi_t,K_0} + ListedPut^{Mid}_{t-1,Mi_t,K_0})$$

With

$$K_0 = CLF(Fwd_{t-1,Mi_t}, Step_{VR})$$

With:

$ELSP_{t-1}$: the Eligible Listed Strikes Put is a subset of the ELIGIBLE LISTED STRIKES on CALCULATION DAY t-1., satisfying the following two conditions: (i) the corresponding OPTION is a PUT OPTION, and (ii) the STRIKE PRICE is a multiple of $Step_{VR}$ away from K_0. The resulting subset is sorted in descending order.

$ELSC_{t-1}$: the Eligible Listed Strikes Call is a subset of the ELIGIBLE LISTED STRIKES on CALCULATION DAY t-1., satisfying the following two conditions: (i) the corresponding OPTION is a CALL OPTION, and (ii) the STRIKE PRICE is a multiple of $Step_{VR}$ away from K_0. The resulting subset is sorted in ascending order.

$|ELSP_{t-1}|$: is the cardinal of the set Eligible Listed Strikes Put $ELSP_{t-1}$ as defined above.

$|ELSC_{t-1}|$: is the cardinal of the set Eligible Listed Strikes Call $ELSC_{t-1}$ as defined above.

Mi_t: for each i from 1 to 5, means the i-th ELIGIBLE LISTED EXPIRATION DATE falling strictly after CALCULATION DAY t.

$ListedCall^{Mid}_{t,M,K}$: means the LISTED MID PRICE, on CALCULATION DAY t, for a CALL OPTION with EXPIRATION DATE M and STRIKE PRICE K, as defined in Section 2.2.2.

$ListedPut^{Mid}_{t,M,K}$: means the LISTED MID PRICE, on CALCULATION DAY t, for a PUT OPTION with EXPIRATION DATE M and STRIKE PRICE K, as defined in Section 2.2.2.

$Fwd_{t,M}$: the FORWARD for EXPIRATION DATE M computed on CALCULATION DAY t according to Section 4.2.9.

$Step_{VR}$: is the STRIKE STEP for Variance Replication VR as defined in "*Table 2: Old Index Parameters*" and "*Table 3: New Index Parameters*".

$DCF(t, Mi_t)$: means DAY COUNT FRACTION, in respect of EXPIRATION DATE Mi_t as of CALCULATION DAY t, computed as (i) the number of CALCULATION DAYS from (and including) CALCULATION DAY t to (but excluding) EXPIRATION DATE Mi_t and (ii) divided by 252.

$CLF(Fwd_{t,M}, step)$: means the Closest Listed Forward and is the listed STRIKE PRICE for the EXPIRATION DATE M available on CALCULATION DAY t, which is the closest to $round\left(\frac{Fwd_{t,M}}{step}\right) \times step$, where $round(x)$ is the closest integer to x

2.1.2. Calculation of Variance Replication

On CALCULATION DAY t, for each i (ranging from 1 to 5) the Variance Replication VRi_t is comprised of the following OPTIONS, grouped into three sets:

(i) Put Option Set,

(ii) Call Option Set, and

(iii) Straddle Option Set,

each set consisting of pairs of UNITS and OPTIONS:

Put Option Set:

$$Put\ Option\ Set = \left\{\left(UnitPut_{j,Mi_t,Kvari_{t-1}}, Put_{Mi_t,K_j,Kvari_{t-1}}\right) \mid j \in [\![1, |ELSP_{t-1}|]\!] \wedge K_j < K_0 \wedge K_j \geq LEBi_{t-1}\right\}$$

Where:

$$UnitPut_{j,Mi_t,Kvari_{t-1}} = Index_{t-1}^{TR} \times \frac{100 \times Abs\left(K_j - K_{j-1}\right) \times VS_{VR} \times w_{VR}}{Kvari_{t-1} \times {K_j}^2 \times DCF(t-1, Mi_t)} + AddonUnitPut \times \mathbb{1}_{\{K_j = LPS\}}$$

Call Option Set:

$$Call\ Option\ Set = \left\{\left(UnitCall_{j,Mi_t,Kvari_{t-1}}, Call_{Mi_t,K_j,Kvari_{t-1}}\right) \mid j \in [\![1, |ELSC_{t-1}|]\!] \wedge K_j > K_0 \wedge K_j \leq UEBi_{t-1}\right\}$$

Where:

$$UnitCall_{j,Mi_t,Kvari_{t-1}} = Index_{t-1}^{TR} \times \frac{100 \times Abs\left(K_j - K_{j-1}\right) \times VS_{VR} \times w_{VR}}{Kvari_{t-1} \times {K_j}^2 \times DCF(t-1, Mi_t)} + AddonUnitCall \times \mathbb{1}_{\{K_j = HCS\}}$$

Straddle Option Set:

$$Straddle\ Option\ Set = \left\{\left(UnitStraddle_{Mi_t,Kvari_{t-1}}, Call_{Mi_t,K_0,Kvari_{t-1}}\right), \left(UnitStraddle_{Mi_t,Kvari_{t-1}}, Put_{Mi_t,K_0,Kvari_{t-1}}\right)\right\}$$

Where:

$$UnitStraddle_{Mi_t,Kvari_{t-1}} = Index_{t-1}^{TR} \times \frac{50 \times Step_{VR} \times VS_{VR} \times w_{VR}}{Kvari_{t-1} \times {K_0}^2 \times DCF(t-1, Mi_t)}$$

And where:

$AddonQtyPut$: is the sum of the quantities of the theoretical PUT OPTIONS that are not executed in the Variance Replication, being a value computed according to the following formula:

$$AddonUnitPut = \sum_{\substack{j=1 \\ K_j < K_0 \\ K_j \geq LTBi_{t-1} \\ K_j < LEBi_{t-1}}}^{|ELSP_{t-1}|} Index_{t-1}^{TR} \times \frac{100 \times Abs\left(K_j - K_{j-1}\right) \times VS_{VR} \times w_{VR}}{Kvari_{t-1} \times {K_j}^2 \times DCF(t-1, Mi_t)}$$

$AddonQtyCall$: is the sum of the quantities of the theoretical CALL OPTIONS that are not executed in the Variance Replication, being a value computed according to the following formula:

$$AddonUnitCall = \sum_{\substack{j=1 \\ K_j>K_0 \\ K_j\leq UTBi_{t-1} \\ K_j>UEBi_{t-1}}}^{|ELSC_{t-1}|} Index_{t-1}^{TR} \times \frac{100 \times Abs(K_j - K_{j-1}) \times VS_{VR} \times w_{VR}}{Kvari_{t-1} \times {K_j}^2 \times DCF(t-1, Mi_t)}$$

LPS : means Lowest Put Strike, being the lowest STRIKE PRICE of the PUT OPTIONS that are comprised in the executed Variance Replication, and being a value computed according to the following formula:

$$LPS = \min_{\substack{K\epsilon ELSP_{t-1} \\ K<K_0 \\ K\geq LEBi_{t-1}}} (K)$$

HCS : means Highest Call Strike, being the highest STRIKE PRICE of the CALL OPTIONS that are comprised in the executed Variance Replication, and being a value computed according to the following formula:

$$HCS = \max_{\substack{K\epsilon ELSC_{t-1} \\ K>K_0 \\ K\leq UEBi_{t-1}}} (K)$$

$\mathbb{1}_{\{K_j=LPS\}}$: is equal to 1 if K_j is equal to LPS, 0 otherwise.

$\mathbb{1}_{\{K_j=HCS\}}$: is equal to 1 if K_j is equal to HCS, 0 otherwise.

$Put_{Mi_t,K_j,Kvari_{t-1}}$: means a PUT OPTION with the following attributes: EXPIRATION DATE Mi_t , STRIKE PRICE K_j and VARIANCE STRIKE $Kvari_{t-1}$

$Call_{Mi_t,K_j,Kvari_{t-1}}$: means a CALL OPTION with the following attributes: EXPIRATION DATE Mi_t , STRIKE PRICE K_j and VARIANCE STRIKE $Kvari_{t-1}$

$Index_{t-1}^{TR}$: means the TOTAL RETURN LEVEL of the INDEX on CALCULATION DAY t-1

$ELSP_{t-1}$: the Eligible Listed Strikes Put is a subset of the ELIGIBLE LISTED STRIKES on CALCULATION DAY t-1, satisfying the following two conditions: the corresponding OPTION is a PUT OPTION and the STRIKE PRICE is a multiple of $Step_{VR}$ away from K_0. The resulting subset is sorted in descending order.

$ELSC_{t-1}$: the Eligible Listed Strikes Call is a subset of the ELIGIBLE LISTED STRIKES on CALCULATION DAY t-1, satisfying the following two conditions: the corresponding OPTION is a CALL OPTION and the STRIKE PRICE is a multiple of $Step_{VR}$ away from K_0. The resulting subset is sorted in ascending order.

$|ELSP_{t-1}|$: is the cardinal of the set Eligible Listed Strikes Put $ELSP_{t-1}$ as defined above.

$|ELSC_{t-1}|$: is the cardinal of the set Eligible Listed Strikes Call $ELSC_{t-1}$ as defined above.

Mi_t: for each i from 1 to 5, means the i-th ELIGIBLE LISTED EXPIRATION DATE falling after CALCULATION DAY t.

VS_{VR}: is the VEGA SIZING of Variance Replication VR as defined in "Table 4: Old Options' Characteristics" and "Table *5: New* Options' Characteristics".

w_{VR}: is the WEIGHT of Variance Replication VR as defined in "Table 4: Old Options' Characteristics" and "Table 5: New Options' Characteristics".

2.2. SELECTION OF THE ELIGIBLE LISTED OPTIONS

2.2.1. Filtering of Eligible Listed Options

On any CALCULATION DAY t, a LISTED OPTION is an "**ELIGIBLE LISTED OPTION**" if (i) its STRIKE PRICE is an ELIGIBLE LISTED STRIKE, and (ii) its EXPIRATION DATE is an ELIGIBLE LISTED EXPIRATION DATE, as defined below:

1. A **"ELIGIBLE LISTED EXPIRATION DATE"** means an EXPIRATION DATE in respect of a LISTED OPTION where the following condition is satisfied: There are not less than two corresponding listed STRIKE PRICES with BID PRICES and ASK PRICES for both CALL OPTIONS and PUT OPTIONS, where the BID PRICES are lower than or equal to the corresponding ASK PRICES.
2. An "**ELIGIBLE LISTED STRIKE**" means a STRIKE PRICE in respect of a LISTED OPTION where the following condition is satisfied: The OPTION has a BID PRICE and an ASK PRICE, where the BID PRICE is lower than or equal to the ASK PRICE.

2.2.2. Listed Options Bid/Ask Prices

On any CALCULATION DAY t in respect of the Options TWAP Window:

1. The "**LISTED BID PRICE**" for each available LISTED OPTION is the TWAP Bid[2] in respect of such OPTION, as such term is defined in Section **Error! Reference source not found.**., and
2. The "**LISTED ASK PRICE**" for each available LISTED OPTION is the TWAP Ask[3] in respect of such OPTION, as such term is defined in Section **Error! Reference source not found.**
3. The "**LISTED MID PRICE**" for each available LISTED OPTION is the TWAP Mid[4] in respect of such OPTION, as such term is defined in Section **Error! Reference source not found.**.

This Section 2.2.2 is subject to the proviso that if, on any CALCULATION DAY *t*, the STRIKE PRICE of an OPTION comprised in the portfolio is not an ELIGIBLE LISTED STRIKE, such OPTION'S ASK PRICE, BID PRICE or MID PRICE (as appropriate) is computed according to Section 4.2.2 using (1) an IMPLIED VOLATILITY determined in accordance with Section 4.2.10 using LISTED ASK PRICE, LISTED BID PRICE or LISTED MID PRICE (as appropriate), and (2) a FORWARD and a DISCOUNT FACTOR determined in accordance with Section 4.2.6 and 4.2.8 using LISTED MID PRICES.

2.3. SELECTION OF THE HEDGE INSTRUMENT

On any CALCULATION DAY t, the HEDGE INSTRUMENT is the closest to expire FUTURE CONTRACT of the Futures Chain, unless the EXPIRATION DATE of such closest to expire FUTURE CONTRACT is less than five CALCULATION DAYS after CALCULATION DAY t, in which case the HEDGE INSTRUMENT is the second closest to expire FUTURE CONTRACT.

Futures Chain is the set of FUTURE CONTRACTS that are related to a specific exchange and specific UNDERLYING ASSET.

[2] Provided that prior to the LIVE DATE, the end of day valuation EXCHANGE BID PRICE was used, and not the TWAP Bid.
[3] Provided that prior to the LIVE DATE, the end of day valuation EXCHANGE ASK PRICE was used, and not the TWAP Ask.
[4] Provided that prior to the LIVE DATE, the average of the end of day valuation EXCHANGE BID PRICE and end of day valuation EXCHANGE ASK PRICE was used, and not the TWAP Mid.

The "Futures Chain" is identified in the column entitled "Futures Chain RIC" in the below table:

Futures Chain RIC	Exchange MIC	Future Currency	Price Definition
0#ES:	XCME	USD	TWAP

Table 6: Futures Chain Parameters

2.4. TWAP CALCULATION METHODOLOGY

This Section **Error! Reference source not found.** sets out the calculation methodology for time weighted average prices with respect to OPTIONS and the HEDGE INSTRUMENT, such prices comprising each of the TWAP BID, TWAP ASK and TWAP MID.

The tables below define the "**Start Time**" and "**End Time**" of each of the Observations Periods and Execution Periods that are used to compute the TWAP BID, TWAP ASK and TWAP MID.

All hours follow those of the New York Stock Exchange time zone (EST time).

Observation Period i	Start Time	End Time	Bucket Size
$i = 1$	9:30	9:35	1 second[5]
$i = 2$	10:30	10:35	
$i = 3$	11:30	11:35	
$i = 4$	12:30	12:35	
$i = 5$	13:30	13:35	
$i = 6$	14:30	14:35	
$i = 7$	15:30	15:35	

Table 7: Intraday Hedge Observation Windows

Execution Period i	Start Time	End Time	Bucket Size
$i = 1$	9:50	10:00	1 second[5]
$i = 2$	10:50	11:00	
$i = 3$	11:50	12:00	
$i = 4$	12:50	13:00	
$i = 5$	13:50	14:00	
$i = 6$	14:50	15:00	
$i = 7$	15:50	16:00	

Table 8: Intraday Hedge Execution Windows

Start Time	End Time	Bucket Size
15:50[6]	16:00[7]	1 second

Table 9: Options TWAP Window

TWAP MID, TWAP BID, TWAP ASK

"**TWAP MID**" is defined as the time weighted average mid price on a given second s over a window of n seconds, calculated in accordance with the following formula:

[5] Prior to the LIVE DATE, the Bucket Size was 1 minute.

[6] On a Calculation Day that is a Half Trading Day, the Options TWAP Window Start Time shall be 12:50 EST.

[7] On a Calculation Day that is a Half Trading Day, the Options TWAP Window End Time shall be 13:00 EST.

$$TWAP_s^n(Mid) = \frac{TWAP_s^n(Bid)+TWAP_s^n(Ask)}{2}$$

Where:

$TWAP_s^n(Bid)$ = TWAP BID as defined below

$TWAP_s^n(Ask)$ = TWAP ASK as defined below

"**TWAP BID**" is defined as the time weighted average bid price on a given second s over a window of n seconds, calculated in accordance with the following formula:

$$TWAP_s^n(Bid) = \frac{1}{n'}\sum_{i=0}^{n-1} Bid(s-i)$$

Where:

- $\mathrm{Bid}(t)$ is the prevailing EXCHANGE BID PRICE of a Valid Quote at time t or, if no Valid Quote is observed at this time, zero;
- n': represents the number of Valid Quotes in the interval in which the average is computed.
- "Valid Quote": An EXCHANGE BID PRICE/EXCHANGE ASK PRICE quote is deemed to be a Valid Quote if both EXCHANGE BID PRICE and EXCHANGE ASK PRICE are non-null, with (i) the EXCHANGE ASK PRICE being greater than or equal to the EXCHANGE BID PRICE, and (ii) the EXCHANGE BID PRICE being above zero.

"**TWAP ASK**" is defined as the time weighted average ask price on a given second s over a window of n seconds, calculated in accordance with the following formula:

$$TWAP_s^n(Ask) = \frac{1}{n'}\sum_{i=0}^{n-1} Ask(s-i)$$

Where:

- $\mathrm{Ask}(t)$ is the prevailing EXCHANGE ASK PRICE of the Valid Quote at time t or, if no Valid Quote is observed at this time, zero;
- n': represents the number of Valid Quotes in the interval in which the average is computed.
- "Valid Quote": An EXCHANGE BID PRICE/EXCHANGE ASK PRICE quote is deemed to be a Valid Quote if both EXCHANGE BID PRICE and EXCHANGE ASK PRICE are non-null, with (i) the EXCHANGE ASK PRICE being greater than or equal to the EXCHANGE BID PRICE, and (ii) the EXCHANGE BID PRICE being above zero.

3. REBALANCE

3.1. ORDINARY REBALANCE

No ordinary rebalance takes place.

3.2. EXTRAORDINARY REBALANCE

No extraordinary rebalance takes place.

4. CALCULATION OF THE INDEX

4.1. INDEX FORMULA

The "**EXCESS RETURN LEVEL**" of the INDEX $Index_t^{ER}$ is calculated in accordance with the following formula:

- In relation to START DATE t_0:

$$Index_{t_0}^{ER} = 100$$

- On each following CALCULATION DAY t:

$$Index_t^{ER} = Index_{t-1}^{ER} + Index_t^{TR} - Index_{t-1}^{TR} \times (1 + ON_{t-1} \times \frac{Act(t-1,t)}{360})$$

The "**TOTAL RETURN LEVEL**" of the INDEX $Index_t^{TR}$ is calculated in accordance with the following formula:

- In relation to START DATE t_0:

$$Index_{t_0}^{TR} = 100$$

- On each following CALCULATION DAY t:

$$Index_t^{TR} = PortfolioMtM_t + Cash_t$$

Where:

$Index_t^{TR}$: means the TOTAL RETURN LEVEL of the INDEX on CALCULATION DAY t

$Index_{t-1}^{TR}$: means the TOTAL RETURN LEVEL of the INDEX on CALCULATION DAY t-1

$Index_t^{ER}$: means the EXCESS RETURN LEVEL of the INDEX on CALCULATION DAY t

$Index_{t-1}^{ER}$: means the EXCESS RETURN LEVEL of the INDEX on CALCULATION DAY t-1

ON_{t-1} : Overnight rate (SOFRRATE Index, provided that prior to 2 April 2018 FEDL01 Index is used) level on CALCULATION DAY t-1 (or, if such a rate is not available, the immediately preceding rate)

$Act(t-1,t)$: means the number of calendar days from, and including, CALCULATION DAY t-1 to, but excluding, the CALCULATION DAY t

$PortfolioMtM_t$: means the PORTFOLIO MARK-TO-MARKET in respect of CALCULATION DAY t

$Cash_t$: means the CASH AMOUNT in respect of CALCULATION DAY t

4.1.1. Portfolio Mark-To-Market

In relation to CALCULATION DAY t, the PORTFOLIO MARK-TO-MARKET $PortfolioMtM_t$ is calculated in accordance with the following formula:

$$PortfolioMtM_t = \sum_{\substack{O \in COP_t \\ TU_O > t \text{ AND } TE_O > t}} Units_O \times Mid_{t,O}$$

Where:

COP_t: each OPTION O comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t, as described in Section 4.1.2

$Units_O$: the NUMBER OF UNITS in respect of OPTION O as defined in Section 2.1.2.

$Mid_{t,O}$: the MID PRICE of OPTION O in respect of CALCULATION DAY t

TU_O : the UNWIND DATE of OPTION O as defined in Section 2.1.

TE_O : the EXPIRATION DATE of OPTION O as defined in Section 2.1.

4.1.2. Continuing Option Portfolio

In relation to CALCULATION DAY t, the CONTINUING OPTION PORTFOLIO COP_t is the set comprising of each OPTION O that satisfies the following criteria:

- TRADE DATE (TR_O) in respect of OPTION O falls on or prior to CALCULATION DAY t
- EXPIRATION DATE (TE_O) in respect of OPTION O falls after CALCULATION DAY t
- UNWIND DATE (TU_O) in respect of OPTION O falls after CALCULATION DAY t

4.1.3. Cash Amount

The CASH AMOUNT $Cash_t$ is calculated in accordance with the following formula:

- In relation to START DATE t_0:

$$Cash_{t_0} = 100$$

- On each following CALCULATION DAY t:

$$Cash_t = Cash_{t-1} \times \left(1 + ON_{t-1} \times \frac{ACT_{t-1,t}}{360}\right) - PR_t + EV_t + UV_t + DHV_t - DHF_t$$

Where:

PR_t: the PREMIUM PAID in respect of CALCULATION DAY t

EV_t: the EXERCISE VALUES in respect of CALCULATION DAY t

UV_t: the UNWIND VALUES in respect of CALCULATION DAY t

DHV_t: the DELTA HEDGE VALUES in respect of CALCULATION DAY t

DHF_t: the DELTA HEDGE FEE in respect of CALCULATION DAY t

ON_{t-1}: the Overnight rate (SORFRATE Index) level as of the CALCULATION DAY t-1 (or, if such a rate is not available, the immediately preceding rate)

$ACT_{t-1,t}$: the number of calendar days from, and including, CALCULATION DAY t-1 to, but excluding CALCULATION DAY t

4.1.4. Premium Paid

In relation to CALCULATION DAY t, the PREMIUM PAID PR_t is calculated in accordance with the following formula:

$$PR_t = \sum_{O \in COP_t \; AND \; TR_O = t} P_{O,t}$$

with

$$P_{O,t} = \begin{cases} Units_{TR_O,O} \times Max(0, Ask_{t,O} + f \times vega(t,O)), & if \; Units_{TR_O,O} > 0 \\ Units_{TR_O,O} \times Max(0, Bid_{t,O} - f \times vega(t,O)), & if \; Units_{TR_O,O} < 0 \end{cases}$$

Where:

COP_t : each OPTION O comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t, as described in Section 4.1.2.

$Units_{TR_O,O}$: the NUMBER OF UNITS in respect of OPTION O as defined in Section 2.1.2.

TR_O : the TRADE DATE of OPTION O as defined in Section 2.1.

$Ask_{t,O}$: the ASK PRICE of OPTION O in respect of CALCULATION DAY t

$Bid_{t,O}$: the BID PRICE of OPTION O in respect of CALCULATION DAY t

$sign(x)$: 1 if $x > 0$ otherwise -1

f : the FRICTION as defined in Section 2.1.

$Vega_{t,O}$: the VEGA of OPTION O in respect of CALCULATION DAY t as defined in Section 4.2.4.

4.1.5. Exercise Values

In relation to CALCULATION DAY t, the EXERCISE VALUES EV_t is calculated in accordance with the following formula:

$$EV_t = \sum_{O \in COP_{t-1} \; AND \; TE_O = t} Units_{TR_O,O} \times Payoff_{t,O}$$

Where:

$Units_{TR_O,O}$: the NUMBER OF UNITS in respect of OPTION O traded on TRADE DATE TR_O

$Payoff_{t,O}$: the PAYOUT of OPTION O as of CALCULATION DAY t, as defined in Section 4.2.1.

4.1.6. Unwind Values

In relation to CALCULATION DAY t, the UNWIND VALUES UV_t is calculated in accordance with the following formula:

$$UV_t = \sum_{O \in COP_t \ AND \ TU_O = t \ AND \ TE_O > t} UV_{O,t}$$

With

$$UV_{O,t} = \begin{cases} Units_{TR_O,O} \times Max(0, Bid_{t,O} - f \times vega(t,O)), & if \ Units_{TR_O,O} > 0 \\ Units_{TR_O,O} \times Max(0, Ask_{t,O} + f \times vega(t,O)), & if \ Units_{TR_O,O} < 0 \end{cases}$$

Where:

$Units_{TR_O,O}$: the NUMBER OF UNITS in respect of OPTION O traded on TRADE DATE TR_O

$Ask_{t,O}$: the ASK PRICE of OPTION O in respect of CALCULATION DAY t

$Bid_{t,O}$: the BID PRICE of OPTION O in respect of CALCULATION DAY t

f : the FRICTION as defined in Section 2.1

$Vega_{t,O}$: the VEGA of OPTION O in respect of CALCULATION DAY t

4.1.7. Delta Hedge Values

In relation to CALCULATION DAY t, the DELTA HEDGE VALUES DHV_t is calculated in accordance with the following formula:

$$DHV_t = \sum_{O \in COP_{t-1} \ AND \ TE_O \geq t} ODHV_{O,t}$$

Where:

COP_t : each OPTION O comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t as defined in Section 4.1.2

TE_O : the EXPIRATION DATE of OPTION O as defined in Section 2.1.

$ODHV_{O,t}$: the DELTA HEDGE VALUE of OPTION O as of CALCULATION DAY t and is calculated according to the following formula:

$$ODHV_{O,t} = \sum_{i=1}^{M} IDHV_{O,t,i}$$

Where:

M : is the number of Execution Periods as defined in Section 2.4.

$IDHV_{O,t,i}$: the intraday DELTA HEDGE VALUE of OPTION O as of CALCULATION DAY t for the i-th Execution Period such that $1 \leq i \leq M$ and is computed according to the following formula:

$$IDHV_{O,t,i} = -nb_{O,t,i-1} \times (Fut_{t,i}^{exec} - Fut_{t,i-1}^{exec})$$

Where:

$Fut_{t,i}^{exec}$: the TWAP MID of the HEDGE INSTRUMENT (as defined in Section 2.4) as of CALCULATION DAY t for Execution Period i

$Fut_{t,i-1}^{exec}$: the TWAP MID of the HEDGE INSTRUMENT (as defined in Section 2.4) as of CALCULATION DAY t for Execution Period $i-1$ such that $1 < i \leq M$. Otherwise, if $i = 1$, then $Fut_{t,0}^{exec} = Fut_{t-1,M}^{exec}$

$nb_{O,t,i-1}$: the NUMBER OF UNITS] of the HEDGE INSTRUMENT held on CALCULATION DAY t right before the i-th Execution Period and defined as the following:

For $2 \leq i \leq M$:

$$nb_{O,t,i-1} = Units_{TR_O,O} \times delta\left(t-1, O, Kvar_O, Fwd_{t-1,TE_O} \times \frac{Fut_{t,i-1}^{obs}}{Fut_{t-1,M}^{exec}}\right) \times \frac{Fwd_{t-1,TE_O}}{Fut_{t-1,M}^{exec}}$$

For $i = 1$:

$$nb_{O,t,0} = nb_{O,t-1,M} = Units_{TR_O,O} \times delta(t-1, O, Kvar_O, Fwd_{t-2,TE_O} \times \frac{Fut_{t-1,M}^{obs}}{Fut_{t-2,M}^{exec}}) \times \frac{Fwd_{t-2,TE_O}}{Fut_{t-2,M}^{exec}}$$

Where:

Fwd_{t-1,TE_O} : the FORWARD of EXPIRATION DATE TE_O computed on CALCULATION DAY t-1 according to Section 4.2.9.

$Kvar_O$: the VARIANCE STRIKE associated with OPTION O as defined in Section 2.2.

$Fut_{t,i}^{obs}$: the TWAP MID of the HEDGE INSTRUMENT (as defined in Section 2.3) as of CALCULATION DAY t for Observation Period i such that $1 \leq i \leq M$.

K_{var} : the VARIANCE STRIKE associated with OPTION O.

4.1.8. Delta Hedge Fee

In relation to CALCULATION DAY t, the DELTA HEDGE VALUES DHV_t is calculated in accordance with the following formula:

$$DHF_t = IDHF_{t-1,M} + \sum_{i=1}^{M-1} IDHF_{t,i}$$

Where:

M : is the number of Execution Periods as defined in Section 2.4.

$IDHF_{t,i}$: the intraday DELTA HEDGE FEE as of CALCULATION DAY t for the i-th Execution Period and is computed according to the following formula:

For $1 \leq i \leq M-1$:

$$DHF_{t,i} = Fut_{t,i}^{exec} \times dhf \times abs\left(\sum_{O \in COP_{t-1}} nb_{O,t,i} - nb_{O,t,i-1}\right)$$

$$DHF_{t,1} = Fut_{t,1}^{exec} \times dhf \times abs\left(\sum_{O \in COP_{t-1}} nb_{O,t,1}\right) + Fut_{t,1}^{exec,Front\ month} \times dhf \times abs\left(\sum_{O \in COP_{t-1}} -nb_{O,t,0}\right) \text{ when } t = Rolling\ Future\ Date$$

For $i = M$:

$$DHF_{t,M} = Fut_{t,M}^{exec} \times dhf \times abs\left(\sum_{\substack{O \in COP_{t-1} \\ AND\ TE_O > t \\ AND\ TU_O > t}} (nb_{O,t,M} - nb_{O,t,M-1}) + \sum_{\substack{O \in COP_{t-1} \\ AND\ (TE_O = t\ OR\ TU_O = t)}} -nb_{O,t,M-1} + \sum_{\substack{O \in COP_t \\ AND\ TR_O = t}} nb_{O,t,M} \right)$$

Where:

dhf : is the DELTA HEDGE FEE as defined in Section 2.1.

$Fut_{t,i}^{exec}$: the TWAP MID of the HEDGE INSTRUMENT (as defined in Section 2.4) as of CALCULATION DAY t on the i-th Execution Period

$nb_{O,t,i-1}$: the NUMBER OF UNITS of the HEDGE INSTRUMENT held on CALCULATION DAY t right before the i-th Execution Period as defined in Section 4.1.8.

COP_t : each OPTION O comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t as defined in Section 4.1.2.

TE_O : the EXPIRATION DATE of OPTION O as defined in Section 2.1.

TR_O : the TRADE DATE of OPTION O as defined in Section 2.1.

TU_O : the UNWIND DATE of OPTION O as defined in Section 2.1.

$Rolling\ Future\ Date$: as defined in Section 2.1.

$Fut_{t,i}^{exec,Front\ month}$: the TWAP MID of the closest to expire FUTURE CONTRACT of the *Futures Chain* (as defined in Section 2.3) as of CALCULATION DAY t on the i-th Execution Period

4.2. OPTION PRICING METHODOLOGY

4.2.1. Payoff

In relation to OPTION O, the PAYOUT $Payoff_{t,O}$ is calculated in accordance with the following formula:

$$Payoff_{O,t} = max(0, CP \times (USI_t - K_O))$$

Where:

CP : whether the OPTION O is OPTION TYPE Call ($CP = 1$) or OPTION TYPE Put ($CP = -1$)

Max: means the MAXIMUM FUNCTION

USI_t: the UNDERLYING CLOSING INDEX LEVEL as of CALCULATION DAY t

K_O : the STRIKE PRICE of OPTION O

4.2.2. Premium

In relation to OPTION O, the PREMIUM $PX_{t,O}$ as of CALCULATION DAY t is calculated in accordance with the following formula:

$$PX_{t,O} = PX\left(t, CP, Fwd_{t,TE_O}, DF_{t,TE_O}, TE_O, K_O, \sigma_{t,K_O,TE_O}\right)$$
$$= DF_{t,TE_O} \times CP$$
$$\times \left(Fwd_{t,TE_O} \times N\left(CP \times d_{1,K_O,TE_O,t}\left(\sigma_{t,K_O,TE_O}\right)\right) - K_O \times N\left(CP \times d_{2,K_O,TE_O,t}\left(\sigma_{t,K_O,TE_O}\right)\right)\right)$$

- Where:

$$d_{1,K,TE,t}(\sigma) = \frac{\log\left(\frac{Fwd_{t,TE}}{K}\right) + \frac{\sigma^2}{2} \times DCF_{t,TE}}{\sigma \times \sqrt{DCF_{t,TE}}}$$

and

$$d_{2,K,TE,t}(\sigma) = d_{1,K,TE,t}(\sigma) - \sigma \times \sqrt{DCF_{t,TE}}$$

With:

Fwd_{t,TE_O}: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE TE_O as calculated in accordance with Section 4.2.8.

DF_{t,TE_O}: the DISCOUNT FACTOR in relation to CALCULATION DAY t and EXPIRATION DATE TE_O as calculated in accordance with Section 4.2.66.

σ_{t,K_O,TE_O}: the IMPLIED VOLATILITY σ as of CALCULATION DAY t in relation to STRIKE PRICE K_O of OPTION O and EXPIRATION DATE TE_O as calculated in accordance with Section 4.2.810.

$DCF_{t,TE}$: the DAY COUNT FRACTION in respect to EXPIRATION DATE TE as of CALCULATION DAY t as defined in Section 4.2.6.

K_O : the STRIKE PRICE of OPTION O

TE_O: the EXPIRATION DATE of OPTION O

$N(x)$: CUMULATIVE DISTRIBUTION FUNCTION of the Standard Normal Distribution, being a value computed according to the following formula:

$$N(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x} e^{-\frac{u^2}{2}} du$$

$\log(.)$: The NATURAL LOGARITHM FUNCTION

4.2.3. Eligible Listed Option Implied Volatility

The ELIGIBLE LISTED OPTION IMPLIED VOLATILITY in relation to an ELIGIBLE LISTED OPTION O with STRIKE PRICE K and EXPIRATION DATE TE on any CALCULATION DAY t is calculated as the IMPLIED VOLATILITY σ for which the PREMIUM for such OPTION matches the price of the ELIGIBLE LISTED OPTION (LISTED BID PRICE, LISTED ASK PRICE, or LISTED MID PRICE):

$$Price_{t,O}^{TE,K} = PX_{t,O} = PX\left(CP, Fwd_{t,TE}, DF_{t,TE}, K, t, TE, \sigma\right)$$

With:

$Price_{t,O}^{TE,K}$: is either the LISTED BID PRICE, LISTED ASK PRICE or LISTED MID PRICE in respect of CALCULATION DAY t of the ELIGIBLE LISTED OPTION O expiring on EXPIRATION DATE TE with a STRIKE PRICE K

$PX_{t,O}$: The PREMIUM of OPTION O as of CALCULATION DAY t as determined in accordance with Section 4.2.2.

CP: The OPTION TYPE of ELIGIBLE LISTED OPTION O expiring on EXPIRATION DATE TE with a STRIKE PRICE K

$Fwd_{t,TE}$: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE TE

$DF_{t,TE}$: the DISCOUNT FACTOR in relation to CALCULATION DAY t and EXPIRATION DATE TE

4.2.4. Option Greeks Calculation

The DELTA, VEGA, GAMMA, and THETA of any OPTION O are computed in accordance with the following formulas:

The DELTA $Delta_{t,O}$ of OPTION O as of CALCULATION DAY t is calculated as follows:

$$\begin{aligned} Delta_{t,O} &= Delta\left(t, CP, Fwd_{t,TE_O}, DF_{t,TE_O}, TE_O, K_O, \sigma_{t,K_O,TE_O}\right) \\ &= DF_{t,TE_O} \times CP \times N\left(CP \times d_{1,O,t}\left(\sigma_{t,K,TE_O}\right)\right) \end{aligned}$$

The VEGA $Vega_{t,O}$ of OPTION O as of CALCULATION DAY t is calculated as follows:

$$\begin{aligned} Vega_{t,O} &= Vega\left(t, CP, Fwd_{t,TE_O}, DF_{t,TE_O}, TE_O, K_O, \sigma_{t,K_O,TE_O}\right) \\ &= DF_{t,TE_O} \times Fwd_{t,TE_O} \times N'(d_{1,O,t}\left(\sigma_{t,K_O,TE_O}\right)) \times \sqrt{DCF_{t,TE_O}} \end{aligned}$$

The GAMMA $Gamma_{t,O}$ of OPTION O as of CALCULATION DAY t is calculated as follows:

$$\begin{aligned} Gamma_{t,O} &= Gamma\left(t, CP, Fwd_{t,TE_O}, DF_{t,TE_O}, TE_O, K_O, \sigma_{t,K_O,TE_O}\right) \\ &= \frac{N'(d_{1,O,t}\left(\sigma_{t,K_O,TE_O}\right)) \times DF_{t,TE_O}}{Fwd_{t,TE_O} \times \sigma_{t,K_O,TE_O} \times \sqrt{DCF_{t,TE_O}}} \end{aligned}$$

The THETA $Theta_{t,O}$ of OPTION O as of CALCULATION DAY t is calculated as follows:

$$\begin{aligned} Theta_{t,O} &= Theta\left(t, CP, Fwd_{t,TE_O}, DF_{t,TE_O}, TE_O, K_O, \sigma_{t,K_O,TE_O}\right) \\ &= -\frac{N'\left(d_{1,O,t}\left(\sigma_{t,K_O,TE_O}\right)\right) \times DF_{t,TE_O} \times Fwd_{t,TE_O} \times \sigma_{t,K_O,TE_O}}{2 \times \sqrt{DCF_{t,TE_O}}} \\ &+ \frac{\ln\left(DF_{t,TE_O}\right) \times CP}{DCF_{t,TE_O}} \\ &\times \left[K_O \times DF_{t,TE_O} \times N\left(CP \times d_{2,K_O,TE_O,t}\left(\sigma_{t,K_O,TE_O}\right)\right)\right. \\ &\left. - Fwd_{t,TE_O} \times DF_{t,TE_O} \times N\left(CP \times d_{1,K_O,TE_O,t}\left(\sigma_{t,K_O,TE_O}\right)\right)\right] \end{aligned}$$

Where:

$$d_{1,O,t}(K) = \frac{\log\left(\frac{Fwd_{t,TE_O}}{K}\right) + \frac{{\sigma_{t,K,TE_O}}^2}{2} \times DCF_{t,TE_O}}{\sigma_{t,K,TE_O} \times \sqrt{DCF_{t,TE_O}}}$$

With:

CP : whether the OPTION O is OPTION TYPE Call ($CP = 1$) or OPTION TYPE Put ($CP = -1$)

DF_{t,TE_O}: the DISCOUNT FACTOR in respect to EXPIRATION DATE TE_O of OPTION O as of CALCULATION DAY t

Fwd_{t,TE_O}: FORWARD in respect to EXPIRATION DATE TE_O of OPTION O as of CALCULATION DAY t

K: The STRIKE PRICE of OPTION O

DCF_{t,TE_O}: The DAY COUNT FRACTION in respect to EXPIRATION DATE TE_O of OPTION O as of CALCULATION DAY t as defined in Section 4.2.6.

$N(x)$: CUMULATIVE DISTRIBUTION FUNCTION of the Standard Normal Distribution, being a value computed according to the following formula:

$$N(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x} e^{-\frac{u^2}{2}} du$$

$\log(.)$: The NATURAL LOGARITHM FUNCTION

σ_{t,K,TE_O}: the IMPLIED VOLATILITY as of CALCULATION DAY t in relation to STRIKE PRICE K as of EXPIRATION DATE TE_O of OPTION O

$\mathrm{N}'(x)$: the density function of the Standard Normal Distribution, being a value computed according to the following formula:

$$N'(x) = \frac{e^{-\frac{x^2}{2}}}{\sqrt{2\pi}}$$

$\exp(.)$: EXPONENTIAL FUNCTION to the Basis of Euler's number e.

4.2.5. Day Count Fraction

The DAY COUNT FRACTION in respect of EXPIRATION DATE TE as of CALCULATION DAY t is (i) the number of CALCULATION DAYS from (and including) CALCULATION DAY t to (but excluding) EXPIRATION DATE TE *divided by* (ii) 252.

4.2.6. Discount Factor

In relation to CALCULATION DAY t and EXPIRATION DATE TE, the DISCOUNT FACTOR $DF_{t,TE}$ is calculated as follows:

$$DF_{t,TE} = \exp\left(\log\left(DF_{t,T_1}\right) + \frac{DC_{T_1,TE} \times \left(\log\left(DF_{t,T_2}\right) - \log\left(DF_{t,T_1}\right)\right)}{DC_{T_1,T_2}}\right)$$

With:

T_1: means the ELIGIBLE LISTED EXPIRATION DATE T_1 selected in accordance with Section 4.2.7.

T_2: means the ELIGIBLE LISTED EXPIRATION DATE T_2 selected in accordance with Section 4.2.7.

DF_{t,T_1}: the DISCOUNT FACTOR in relation to CALCULATION DAY t and ELIGIBLE LISTED EXPIRATION DATE T_1 calculated in accordance with Section 4.2.9. If $T_1 = t$, then the DISCOUNT FACTOR in relation to CALCULATION DAY t and ELIGIBLE LISTED EXPIRATION DATE T_1 is 1.

DF_{t,T_2}: the DISCOUNT FACTOR in relation to CALCULATION DAY t and ELIGIBLE LISTED EXPIRATION DATE T_2 calculated in accordance with Section 4.2.99.

$DC_{T_1,TE}$: means the NUMBER OF CALENDAR DAYS in the period commencing on (and including) ELIGIBLE LISTED EXPIRATION DATE T_1 and ending on (but excluding) EXPIRATION DATE TE.

DC_{T_1,T_2}: means the NUMBER OF CALENDAR DAYS in the period commencing on (and including) ELIGIBLE LISTED EXPIRATION DATE T_1 and ending on (but excluding) ELIGIBLE LISTED EXPIRATION DATE T_2.

$\log(.)$: The NATURAL LOGARITHM FUNCTION.

$\exp(.)$: EXPONENTIAL FUNCTION to the Basis of Euler's number e.

4.2.7. Maturity Selection

In relation to CALCULATION DAY t and EXPIRATION DATE TE, two EXPIRATION DATES T_1, T_2 are selected with regards to TE following the below methodology:

- Where EXPIRATION DATE TE is lower than any EXPIRATION DATE within the set of ELIGIBLE LISTED EXPIRATION DATES, $T_1 = t$ and T_2 is the shortest ELIGIBLE LISTED EXPIRATION DATE in respect of CALCULATION DAY t.
- Where EXPIRATION DATE TE is strictly greater than any EXPIRATION DATE within the set of ELIGIBLE LISTED EXPIRATION DATES, $T_1 = T_2 = TE$.
- Otherwise, (i) T_1 is the furthest ELIGIBLE LISTED EXPIRATION DATE in respect of CALCULATION DAY t that is less than or equal to TE, and (ii) T_2 is the shortest ELIGIBLE LISTED EXPIRATION DATE in respect of CALCULATION DAY t that is greater than or equal to TE.
-

4.2.8. Forward

In relation to CALCULATION DAY t and EXPIRATION DATE TE, the FORWARD $Fwd_{t,TE}$ is calculated as follows:

$$Fwd_{t,TE} = \exp\left(\log\left(Fwd_{t,T_1}\right) + \frac{DC_{T_1,TE} \times \left(\log\left(Fwd_{t,T_2}\right) - \log\left(Fwd_{t,T_1}\right)\right)}{DC_{T_1,T_2}}\right)$$

With:

T_1: means the ELIGIBLE LISTED EXPIRATION DATE T_1 selected in accordance with Section 4.2.7.

T_2: means the ELIGIBLE LISTED EXPIRATION DATE T_2 selected in accordance with Section 4.2.7.

Fwd_{t,T_1}: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE T_1 calculated in accordance with Section 4.2.9. If $T_1 = t$, then the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE T_1 is the UNDERLYING CLOSING INDEX LEVEL as of CALCULATION DAY t

Fwd_{t,T_2}: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE T_2 calculated in accordance with Section 4.2.9.

DC_{T_1,T_2}: means the NUMBER OF CALENDAR DAYS in the period commencing on (and including) ELIGIBLE LISTED EXPIRATION DATE T_1 and ending on (but excluding) ELIGIBLE LISTED EXPIRATION DATE T_2

$\log(.)$: The NATURAL LOGARITHM FUNCTION

4.2.9. Discount Factor and Forward for an Eligible Listed Expiration Date

In relation to CALCULATION DAY t, for an EXPIRATION DATE of an ELIGIBLE LISTED OPTION, the DISCOUNT FACTOR and FORWARD for that EXPIRATION DATE shall be calculated in accordance with the following methodology:

Two STRIKE PRICES are selected, $K_{i,a}$ and $K_{i,b}$ with the closest CALL OPTION and PUT OPTION prices:

$$K_{i,a}{}^{8} = K_{i,j} \;/\; j = argmin_{j=1,\dots,n_i}(|call_{i,j} - put_{i,j}|)$$

$$K_{i,b}{}^{9} = K_{i,j} \;/\; j = argmin_{j=1,\dots,n_i;j\neq a}(|call_{i,j} - put_{i,j}|)$$

By fitting the Call-Put parity for those two STRIKE PRICES, the following applies:

$$DF_i = \frac{(call_{i,a} - put_{i,a}) - (call_{i,b} - put_{i,b})}{K_{i,b} - K_{i,a}}$$

$$F_i = \frac{call_{i,a} - put_{i,a}}{DF_i} + K_{i,a}$$

4.2.10. Implied Volatility

In relation to CALCULATION DAY t, STRIKE PRICE K and EXPIRATION DATE TE, the IMPLIED VOLATILITY $\sigma_{t,K,TE}$ is calculated based on the following methodology:

In order to calculate the IMPLIED VOLATILITY, up to four LISTED OPTIONS are required.

In relation to CALCULATION DAY t and EXPIRATION DATE TE, two EXPIRATION DATES T_1, T_2 are selected in accordance with Section 4.2.7.

The DISCOUNT FACTOR and FORWARD for the two selected EXPIRATION DATES are calculated in accordance with Section 4.2.9.

With respect to each selected ELIGIBLE LISTED EXPIRATION DATE T_i, two STRIKE PRICES K_1, and K_2 are selected using the following criteria:

[8] When several STRIKE PRICES satisfy the condition, the lowest STRIKE PRICE is chosen.
[9] When several STRIKE PRICES satisfy the condition, the lowest STRIKE PRICE is chosen.

- Where STRIKE PRICE K is strictly lower than the lowest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i , $K_2 = K_1$, where K_1 is lowest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i
- Where STRIKE PRICE K is strictly higher than the highest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i , $K_1 = K_2$, where K_2 is the highest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i
- Otherwise, (i) K_1 is the highest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE $T_i$that is less than or equal to STRIKE PRICE K, and (ii) K_2 is the lowest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i that is higher than or equal to STRIKE PRICE K

The four selected ELIGIBLE LISTED OPTIONS are set to be of OPTION TYPE Put.

Once the DISCOUNT FACTOR, FORWARD, EXPIRATION DATE and STRIKE PRICE are determined for the four selected ELIGIBLE LISTED OPTIONS, the IMPLIED VOLATILITY of each such OPTION is determined in accordance with Section 4.2.3, namely:

σ_{t,K_1,T_1} , σ_{t,K_2,T_1} , σ_{t,K_1,T_2} , σ_{t,K_2,T_2}.

The IMPLIED VOLATILITY for the ELIGIBLE LISTED OPTION with STRIKE PRICE K and for the two selected ELIGIBLE LISTED EXPIRATION DATE T_1, T_2 is thus interpolated as follows:

$$\sigma_{t,K,T_1} = \begin{cases} \sigma_{t,K_1,T_1} + \dfrac{(K-K_1)\times\left(\sigma_{t,K_2,T_1}-\sigma_{t,K_1,T_1}\right)}{(K_2-K_1)} & if\ K_1 \neq K_2 \\ \sigma_{t,K_1,T_1} & otherwise \end{cases}$$

$$\sigma_{t,K,T_2} = \begin{cases} \sigma_{t,K_1,T_2} + \dfrac{(K-K_1)\times\left(\sigma_{t,K_2,T_2}-\sigma_{t,K_1,T_2}\right)}{(K_2-K_1)} & if\ K_1 \neq K_2 \\ \sigma_{t,K_1,T_2} & otherwise \end{cases}$$

Finally, the IMPLIED VOLATILITY $\sigma_{t,K,TE}$ in relation to CALCULATION DAY t, STRIKE PRICE K and EXPIRATION DATE TE is calculated as follows:

$$\sigma_{t,K,TE} = \begin{cases} \sqrt{\dfrac{1}{DC_{t,TE}} \times Max\left(0, \left(\sigma_{t,K,T_1}\right)^2 \times DC_{t,T_1} + \dfrac{DC_{T_1,TE} \times \left[\left(\sigma_{t,K,T_2}\right)^2 \times DC_{t,T_2} - \left(\sigma_{t,K,T_1}\right)^2 \times DC_{t,T_1}\right]}{DC_{T_1,T_2}}\right)} & if\ T_1 \neq T_2 \\ \sigma_{t,K,T_1} & otherwise \end{cases}$$

With:

σ_{t,K,T_1}: means the IMPLIED VOLATILITY in respect of Calculation Day t with EXPIRATION DATE T_1 being an ELIGIBLE LISTED EXPIRATION DATE

σ_{t,K,T_2}: means the IMPLIED VOLATILITY in respect of CALCULATION DAY t with EXPIRATION DATE T_2 being an ELIGIBLE LISTED EXPIRATION DATE

DC_{t,T_1}: means the number of CALCULATION DAYS in the period commencing on (and including) CALCULATION DAY t and ending on (but excluding) ELIGIBLE LISTED EXPIRATION DATE T_1

DC_{t,T_2}: means the number of CALCULATION DAYS in the period commencing on (and including) CALCULATION DAY t and ending on (but excluding) ELIGIBLE LISTED EXPIRATION DATE T_2

$DC_{T_1,TE}$: means the number of CALCULATION DAYS in the period commencing on (and including) ELIGIBLE LISTED EXPIRATION DATE T_1 and ending on (but excluding) EXPIRATION DATE TE

$DC_{T_2,TE}$: means the number of CALCULATION DAYS in the period commencing on (and including) ELIGIBLE LISTED EXPIRATION DATE T_2 and ending on (but excluding) EXPIRATION DATE TE

4.3. ACCURACY

The level of the INDEX will be rounded to 4 decimal places.

4.4. RECALCULATION

The INDEX ADMINISTRATOR makes the greatest possible efforts to accurately calculate and maintain the INDEX. However, errors in the determination process may occur from time to time for a variety of reasons (internal or external) and therefore cannot be completely ruled out in respect of any INDEX. The INDEX ADMINISTRATOR endeavors to correct all errors that have been identified within a reasonable period of time. The understanding of "a reasonable period of time" as well as the general measures to be taken generally depend on the underlying and is specified in the SOLACTIVE Correction Policy, which is incorporated by reference and available on the SOLACTIVE website: https://www.solactive.com/documents/correction-policy/.

4.5. MARKET DISRUPTION

In periods of market stress the INDEX ADMINISTRATOR shall calculate the INDEX following predefined and exhaustive arrangements as described in the SOLACTIVE Disruption Policy, which is incorporated by reference and available on the SOLACTIVE website: https://www.solactive.com/documents/disruption-policy/. Such market stress can arise due to a variety of reasons, but generally results in inaccurate or delayed prices for one or more INDEX COMPONENTS. The determination of the INDEX may be limited or impaired at times of illiquid or fragmented markets and market stress.

5. MISCELLANEOUS

5.1. DISCRETION

Any discretion which may need to be exercised in relation to the determination of the INDEX (for example the determination of the Index Universe (if applicable), the selection of the INDEX COMPONENTS (if applicable) or any other relevant decisions in relation to the INDEX) shall be made in accordance with strict rules regarding the exercise of discretion or expert judgement by the INDEX ADMINISTRATOR.

5.2. METHODOLOGY REVIEW

The methodology of the INDEX is subject to regular review, at least annually. If a change of the methodology has been identified within such review (e.g. if the underlying market or economic reality has changed since the launch of the INDEX or if the present methodology is based on obsolete assumptions and factors and no longer reflects the reality as accurately, reliably and appropriately

as before), such change will be made in accordance with the SOLACTIVE Methodology Policy, which is incorporated by reference and available on the SOLACTIVE website: https://www.solactive.com/documents/methodology-policy/.

Such change in the methodology will be announced on the SOLACTIVE website under the Section "Announcements", which is available at https://www.solactive.com/news/announcements/. The date of the last amendment of this INDEX is contained in this GUIDELINE.

5.3. CHANGES IN CALCULATION METHOD

The application by the INDEX ADMINISTRATOR of the method described in this document is final and binding. The INDEX ADMINISTRATOR shall apply the method described above for the composition and calculation of the INDEX. However, it cannot be excluded that the market environment, supervisory, legal and financial or tax reasons may require changes to be made to this method. The INDEX ADMINISTRATOR may also make changes to the terms and conditions of the INDEX and the method applied to calculate the INDEX that it deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. The INDEX ADMINISTRATOR is not obliged to provide information on any such modifications or changes. Despite the modifications and changes, the INDEX ADMINISTRATOR will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.

5.4. TERMINATION

The INDEX ADMINISTRATOR makes the greatest possible efforts to ensure the resilience and continued integrity of its indices over time. Where necessary, the INDEX ADMINISTRATOR shall follow a clearly defined and transparent procedure to adapt INDEX methodologies to account for changing underlying markets (see Section 5.2 "Methodology Review") in order to maintain continued reliability and comparability of the indices. Nevertheless, if no other options are available the orderly cessation of the INDEX may be indicated. This is usually the case when the underlying market or economic reality, which an index is set to measure or to reflect, changes substantially and in a way not foreseeable at the time of inception of the INDEX, the index rules, and particularly the selection criteria, can no longer be applied coherently or the INDEX is no longer used as the underlying value for financial instruments, investment funds and financial contracts.

The INDEX ADMINISTRATOR has established and maintains clear guidelines on how to identify situations in which the cessation of an index is unavoidable, how stakeholders are to be informed and consulted and the procedures to be followed for a termination or the transition to an alternative index. Details are specified in the SOLACTIVE Termination Policy, which is incorporated by reference and available on the SOLACTIVE website: https://www.solactive.com/documents/termination-policy/.

5.5. INDEX COMMITTEE

An index committee composed of staff from the INDEX ADMINISTRATOR and its subsidiaries (the "**INDEX COMMITTEE**") is responsible for decisions regarding any amendments to the rules of the INDEX. Any

such amendment, which may result in an amendment of the GUIDELINE, must be submitted to the INDEX COMMITTEE for prior approval and will be made in compliance with the Methodology Policy, which is available on the SOLACTIVE website: https://www.solactive.com/documents/methodology-policy/.

6. DEFINITIONS

"**ASK PRICE**" in relation to a CALCULATION DAY t and OPTION O, shall mean (i) the LISTED ASK PRICE , if the OPTION O is an ELIGIBLE LISTED OPTION calculated in accordance with Section 2.2.2; or (ii) otherwise, the price estimated in accordance with Section 4.2.2

"**BENCHMARK REGULATION**" shall have the meaning as defined in Section "Introduction".

"**BID PRICE**" in relation to a CALCULATION DAY t and OPTION O, shall mean (i) the LISTED BID PRICE, if the OPTION O is an ELIGIBLE LISTED OPTION calculated in accordance with Section 2.2.2; or (ii) otherwise, the price estimated in accordance with Section 4.2.2.

"**BMR**" shall have the meaning as defined in Section "Introduction".

"CALCULATION DAY" means a weekday on which each of NYSE and CBOE are open for business.

"CASH AMOUNT" shall have the meaning as defined in Section 4.1.3.

"CUMULATIVE DISTRIBUTION FUNCTION" defines the standard normal distribution.

"CONTINUING OPTION PORTFOLIO" has the meaning given to it in Section 4.1.2.

"DAY COUNT FRACTION" has the meaning given to it in Section 4.2.5

"DELTA" shall have the meaning given to it in Section 4.2.4

"DISCOUNT FACTOR" has the meaning given to it in Section 4.2.6

"ELIGIBLE LISTED EXPIRATION DATE" shall have the meaning given to it in Section 2.2.1

"ELIGIBLE LISTED OPTION" has the meaning given to it in Section 2.2.1

"ELIGIBLE LISTED STRIKE" has the meaning given to it in Section 2.2.1

"EXCHANGE" means any of the New York Stock Exchange ("**NYSE**") or the Chicago Board Options Exchange ("**CBOE**").

"EXCHANGE ASK PRICE" of an OPTION or HEDGE INSTRUMENT means the ask price sourced from the relevant exchange.

"EXCHANGE BID PRICE" of an OPTION or HEDGE INSTRUMENT means the bid price sourced from the relevant exchange.

"EXPIRATION DATE" is defined in relation to an OPTION, FUTURE CONTRACT or FORWARD and is the date on which such instrument expires.

"EXPONENTIAL FUNCTION" means the exponential function to the basis of Euler's Number e.

"FORWARD" has the meaning given to it in Section 4.2.8

"FRICTION" is defined in relation to an OPTION and has the meaning given to it in Section2.1.

"FUTURE CONTRACT" means a listed futures contract in respect of the UNDERLYING ASSET.

"**GUIDELINE**" shall have the meaning as defined in Section "Introduction".

"HALF TRADING DAY" means a CALCULATION DAY on which an early market close is announced by the relevant Exchange.

"HEDGE INSTRUMENT" has the meaning given to it in Section 2.3

"**INDEX**" shall have the meaning as defined in Section "Introduction".

"**INDEX ADMINISTRATOR**" shall have the meaning as defined in Section "Introduction".

"**INDEX COMMITTEE**" shall have the meaning as defined in Section 5.5

"**INDEX COMPONENTS**" means, with respect to the INDEX and a Calculation Day, all the OPTIONS in the CONTINUING OPTION PORTFOLIO on such day.

"**INDEX OWNER**" shall have the meaning as defined in Section "Introduction".

"IMPLIED VOLATILITY" has the meaning given to it in Section 4.2.10

"**LISTED OPTION**" means an OPTION that is listed on an EXCHANGE.

"**LIVE DATE**" means 13th March 2024.

"MAXIMUM FUNCTION" means, when followed by a series of amounts inside brackets, whichever is the larger of the amounts separated by a comma inside those brackets.

"MID PRICE" in relation to a CALCULATION DAY t and OPTION O, shall mean (i) the LISTED MID PRICE, if the OPTION O is an ELIGIBLE LISTED OPTION calculated in accordance with Section 2.2.2; or (ii) otherwise, the price estimated in accordance with Section 4.2.2

"NATURAL LOGARITHM FUNCTION" is the inverse of the EXPONENTIAL FUNCTION.

"NUMBER OF UNITS" is defined in relation to an OPTION and is the quantity or number of OPTIONS.

"OPTION" means a derivative that securitizes the right but not the obligation to buy (being OPTION TYPE Call or a "**CALL OPTION**") or sell (being OPTION TYPE Put or a "**PUT OPTION**") a pre-defined reference instrument relating to a position in respect of the UNDERLYING ASSET, on a pre-defined day (being EXPIRATION DATE TE), for a pre-defined price (being STRIKE PRICE K).

"**OPTION TYPE**" shall mean the type of OPTION O, which can be either "Call" or "Put".

"PAYOUT" has the meaning given to it in Section 4.2.1.

"PORTFOLIO MARK-TO-MARKET" has the meaning given to it in Section 4.1.1.

"PREMIUM" has the meaning given to it in Section 4.2.2.

"PREMIUM PAID" has the meaning given to it in Section 4.1.4.

"**REFINITIV**" is a data provider being a subsidiary of London Stock Exchange.

"**ROLLING FUTURE DATE**" is a Calculation Day that is five Calculation Days prior to the EXPIRATION DATE of the closest FUTURE CONTRACT to expire.

"**SOLACTIVE**" shall have the meaning as defined in Section "Introduction".

"START DATE" means 3rd January 2017.

"STRIKE PRICE" is defined in relation to an OPTION and is the strike price specified in respect of such OPTION.

"TRADE DATE" means, in relation to an OPTION O, the CALCULATION DAY t on which the position in respect of such OPTION is notionally traded.

"TRANSITION DATE" means 12th May 2022.

"**UNDERLYING ASSET"** or **"SPX INDEX""** means the S&P 500 Index.

"UNDERLYING INDEX CLOSING LEVEL" in relation to a CALCULATION DAY t means the official close of the **UNDERLYING ASSET** on that day, identified by its RIC .SPX.

"UNWIND DATE" is defined in relation to an OPTION and is the date on which such OPTION unwinds.

"UNWIND VALUES" has the meaning given to it in Section 4.1.6.

"USD" means United States Dollars.

"**VARIANCE STRIKE**" has the meaning given to it in Section 2.1.1

"VEGA" has the meaning given to it in Section 4.2.4

7. VERSIONING

VERSION	DATE	DESCRIPTION
1.0	December 17th, 2024	Initial Guideline creation (*initial version*)
1.1	September 30th, 2025	Add Indicative Index.

Table 6 Versioning

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