REQUEST FOR COMMENTS

AMENDMENTS TO THE RULES OF BOURSE DE MONTREAL INC. TO MODIFY THE FINAL SETTLEMENT PRICE OF THE ONE–MONTH CORRA FUTURES (COA)

On September 13, 2022, the Rules and Policies Committee of Bourse de Montréal Inc. (the "**Bourse"**) approved amendments to the Rules of the Bourse in order to adjust the final settlement price calculation of the One-Month CORRA Futures ("COA") from an arithmetic average of the realized CORRA values to a geometric average.

Comments on the proposed amendments must be submitted at the latest on **November 28, 2022**. Please submit your comments to:

Dima Ghozaiel
Legal Counsel
Bourse de Montréal Inc.
1800-1190 av des Canadiens-de-Montréal
P.O. Box 37
Montreal, Quebec H3B 0G7
E-mail: legal@tmx.com

A copy of these comments shall also be forwarded to the *Autorité des marchés financiers* (the "**Autorité**") to:

Me Philippe Lebel
Corporate Secretary and
Executive Director, Legal Affairs
Autorité des marchés financiers
Place de la Cité, tour Cominar
2640 Laurier boulevard, suite 400
Québec (Québec) G1V 5C1
Fax : (514) 864-8381
E-mail: consultation-en-cours@lautorite.qc.ca

Please note that comments received by one of these recipients will be transferred to the other recipient and that the Bourse may publish a summary of such comments as part of the self-certification process concerning this file. Unless specified otherwise, comments will be published anonymously by the Bourse.

Appendices

You will find in the appendices an analysis as well as the text of the proposed amendments. The implementation date of the proposed amendments will be determined by the Bourse, in accordance with the self-certification process as established by the *Derivatives Act* (CQLR, chapter I-14.01).

Process for Changes to the Rules

The Bourse is authorized to carry on business as an exchange and is recognized as a self-regulatory organization ("**SRO**") by the Autorité. The Board of Directors of the Bourse has delegated to the Rules and Policies Committee of the Bourse its powers to approve and amend the Rules, the Policies and the Procedures, which are thereafter submitted to the Autorité in accordance with the self-certification process as determined by the *Derivatives Act* (CQLR, chapter I-14.01).

In its SRO capacity, the Bourse assumes market regulation and supervision responsibilities of its approved participants. The responsibility for regulating the market and the approved participants of the Bourse comes under the Regulatory Division of the Bourse (the "**Division**"). The Division carries on its activities as a distinct business unit separate from the other activities of the Bourse.

The Division is under the authority of a Special Committee (the "**Special Committee**") appointed by the Board of Directors of the Bourse. The Special Committee is empowered to recommend to the Board of Directors the approval or amendment of some aspects of the Rules of the Bourse governing approved participants. The Board of Directors has delegated to the Rules and Policies Committee of the Bourse its powers to approve or amend these Rules upon recommendation from the Special Committee.

Tour Deloitte
1800-1190 avenue des Canadiens-de-Montréal, P.O. Box 37, Montreal, Quebec H3B 0G7
Telephone: 514 871-2424
Toll free within Canada and the U.S.A.: 1 800 361-5353
Website: www.m-x.ca   2

AMENDMENTS TO THE RULES OF BOURSE DE MONTRÉAL INC. TO MODIFY THE FINAL SETTLEMENT PRICE OF THE ONE–MONTH CORRA FUTURES (COA)

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I.   DESCRIPTION

Bourse de Montréal Inc. (the "Bourse") hereby proposes to update its rules to adjust the final settlement price calculation of One-Month CORRA Futures ("COA") from an arithmetic average of the realized CORRA values to a geometric average. Given the importance of the ongoing transition from CDOR to CORRA in the Canadian interest rate market space, the Bourse considers that it is crucial to review and update its CORRA product offering to meet the needs of the industry. Therefore, the Bourse proposes to align the final settlement methodology for COA with the conventions recommended by industry experts from the Canadian Alternative Reference Rate Working Group (CARR).

Additionally, the Bourse proposes to add language under the settlement procedure for COA to modify the treatment of start/end of month that falls either on a weekend or on a holiday, in conformity with the standards in the Canadian overnight index swap ("OIS") market. The Bourse believes that the change will not only better serve the needs of market participants but also enhance market efficiency in the context of global interest rate benchmark reform.

II.   PROPOSED AMENDMENTS

The Bourse proposes to modify articles 12.1800, 12.1802, 12.1804 and 12.1812 of its rules to adapt the underlying interest, trading unit, price quotation and final settlement price of the COA contract to the proposed change of calculation methodology. This calculation methodology, initially designed to be based on an arithmetic average, would now be determined from a geometric average of the realized CORRA values in the contract month.

Additionally, the Bourse proposes a minor adjustment to the accrual period for months where the start and/or end date falls on a weekend or on a holiday, following feedback from key participants, advisory groups, and considering industry standards. Finally, another minor modification to article 12.1801 is also proposed as the Bourse may not start by listing all of the seven contract months initially contemplated.

The Bourse believes that the new proposed specifications are more suitable for market participants in the context of the transition to CORRA. The feedback the Bourse has received from the industry is that a final settlement price's calculation methodology that is aligned across tenors (1-Month and 3-Month CORRA Futures) would improve product perception, standardize convention for CORRA in the Canadian market and make the process for Term CORRA determination easier. These modifications aim to respond to Canadian industry requirements, as expressed by the CARR regarding the design of COA, which is expected to serve as an input for the projected Term CORRA Reference Rates.

Table 1: Settlement price specification (main proposed modification)

Current Final Settlement Price	**Proposed** Final Settlement Price
The final settlement price shall be 100 minus the <u>average</u> daily overnight repo rate over the Contract Month.	The final settlement price shall be 100 minus the **compounded** daily overnight repo rate over the Contract Month.
Calculation period for the Contract Month: From the first calendar day of the Contract Month up to the last calendar day of the Contract Month inclusively. Weekend and holiday rates are considered to be the rate applicable on the previous business day for which a rate was reported.	Calculation period for the Contract Month: From (**and including) the first Business Day in the Contract Month up to (and excluding) the first Business Day in the next calendar month.** Weekend and holiday rates are considered to be the rate applicable on the previous business day for which a rate was reported.

The new specification would be presented as such:

The final settlement price shall be 100 minus the compounded daily CORRA rate over the Contract Month. It is calculated in accordance with the following formula:

$$R = \left[\prod_{i=1}^{d} \left(1 + \frac{CORRA_i \times n_i}{365} \right) - 1 \right] \times \frac{365}{D} \times 100$$

Where:
"d", the number of Business Days in the Contract Month;
"i" is a series of whole numbers from one to d, each representing the relevant Business Day in chronological order from, and including, the first Business Day in the relevant Contract Month;
$CORRA_i$ = Canadian Overnight Repo Rate Average ("CORRA") value calculated and representative of the ith day of the Contract Month;
"n_i" is the number of days in the relevant Contract Month on which the rate is $CORRA_i$;
"D" is the number of days from, and including, the first Business Day in the relevant Contract Month up to, and excluding, the first Business Day in the next calendar month

The modifications to the underlying interest, trading unit and price quotation definition mentioned previously are all linked to the calculation methodology change presented above and are presented in the attached documents.

The proposed rule amendments are attached.

### III.	ANALYSIS

#### a.	Background

The Bourse self-certified[1] the product specifications for both COA and Three-Month CORRA Futures ("CRA") in June 2020. Following the self-certification approval, the Bourse started by concentrating its efforts on the development of the CRA product, considered a more direct alternative to the Three-Month Canadian Bankers' Acceptance ("BAX") and, by prospect, the potentially most successful contract as evidenced by international comparison (e.g. : 3M SOFR Futures at CME Futures at CME). Liquidity development in the 3-Month product took longer than expected but the recent announcement by Refinitiv to cease CDOR at the end of June 2024,[2] combined with the implementation of a new market making program in May 2022[3] led to significant improvement in market conditions. These developments support the Bourse's belief that the product will continue to grow in the forthcoming future.

Since the beginning of the interest rate benchmark transition efforts in Canada, the Bourse and the CARR have worked together on a few key initiatives to promote the viability and usage of CORRA as key reference rate in Canada. As part of these efforts, the product specifications of COA and CRA products were designed in 2019 drawing upon market participant feedback. At that time, it was agreed that the final settlement price of the COA would be based on an arithmetic average while that of the CRA would be based on a geometric average, similar to comparable products in other jurisdictions.

In 2022, the various stakeholders in the Canadian lending and derivatives market expressed the need to have an active COA product as part of the development for a Term CORRA structure that would be used in the bank loan market. Such Term CORRA would be calculated relying on market information and COA product would be considered a key input in the proposed Term CORRA determination methodology[4]. In order to standardize market convention across CORRA-based product in Canada[5], the industry proposed that the final settlement price of the COA contract be changed to a daily compounded methodology. Additionally, the calculation period was proposed to be modified so that it covers the period from the first business day of the contract month to the first business day of the next contract month. This amendment would align the calculation schedule with that of the CORRA Index publication and would be closer to conventions in the CAD OIS market.

#### b.	Objectives

The objective of the proposed amendments is to update the 1-Month CORRA product offering of the Bourse in order to make it relevant and attractive for market participants. The Bourse believes that the proposed modifications will increase the utility and the effectiveness of its derivatives

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[1] https://m-x.ca/f_circulaires_en/102-20_en.pdf

[2] Refinitiv issues CDOR Cessation notice

[3] https://www.m-x.ca/en/resources/notices/advisory-notices?id=10

[4] https://www.bankofcanada.ca/wp-content/uploads/2022/05/consultation-document.pdf

[5] https://www.bankofcanada.ca/markets/canadian-alternative-reference-rate-working-group/#conventions

market for hedgers and speculators involved in the short-term interest rate markets. By improving the design of its 1-month CORRA offering, MX would enhance the listing of its short-end of the listed yield curve, responding to the needs of the Canadian industry.

The Bourse's new product proposal should attract additional trading volume by offering market participants a convenient way to hedge their exposure on the CORRA benchmark rate. A contract that is better tailored to participants' needs and market requirements is expected to enhance liquidity, price transparency and make markets more efficient.

The Bourse believes this amendment remains consistent with its objective to:
1) Better serve the interests of market participants.
2) Support the vision of the CARR and its ability to ensure Canada's interest rate benchmarks are sufficiently robust, relevant and effective.
3) Strengthen the functioning of the Canadian derivatives market and support the short-end of MX's listed yield curve.

c. Comparative Analysis

Global derivative exchanges throughout the world are supporting the interest rate benchmark transition efforts, as it creates opportunities to enhance the array of risk management product offering. As a result, global derivatives exchanges have positioned themselves to benefit from the emergence of new benchmark rates, by launching futures contracts on these new risk-free rates in the past few years. Some of them have even dedicated web pages providing general information about the state of the transition in their respective jurisdictions.[6]

Thus far, CME products have been the most successful. Both the 1-Month and 3-Month SOFR futures have seen a quick uptake in volume and open interest over the last few months. The average daily volume of one-month SOFR futures reached over 80k in July 2022, with an open interest of more than 600k contracts (as of 19 July 2022). Contrary to CORRA, SOFR is a new benchmark rate built expressly to respond to the benchmark reform need. It was first published in April 2018 by the Federal Reserve of New York. The recent volume trends on one-month SOFR futures illustrates the success and potential of futures contracts based on recommended risk-free rates. More up-to-date volume and open interest of CME's One-month SOFR Futures are accessible on CME's website[7]. Furthermore, CME announced their intention to extend their offering by adding more contract expiries and also options on SOFR futures.[8]

With regards to the proposed specifications of COA Futures, MX settlement methodology remains in line with international standards, by taking into consideration the observed values during the contract month. We note however that the proposed geometric average settlement methodology for COA would differ from the arithmetic average used for 1M SOFR. This can in part be explained by the different industry expectations between Canada and the United States along with Canada's

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[6] https://www.cmegroup.com/trading/interest-rates/sofr-sonia-and-other-alternative-reference-rates.html
https://www.eurexclearing.com/clearing-en/markets-services/ibor

[7] https://www.cmegroup.com/markets/interest-rates/stirs/one-month-sofr.volume.html

[8] https://www.cmegroup.com/media-room/press-releases/2019/9/04/cme_group_to_launchsofroptionsonjanuary62020.html

ability to improve acceptance early on during the launch process. Table 2 below presents the key similarities and differences between the proposed COA contract versus the 1M SOFR (CME) and the 1M SONIA (ICE).

Table 2: CORRA based futures contracts compared to 1M and SONIA based futures contracts

Product specification	COA (MX) - Proposed	1M SOFR (CME)	1M SONIA (ICE)
Trading Unit	~~Average~~ Compounded daily Canadian Overnight Repo Rate Average ("CORRA") interest during the Contract Month, such that each basis point per annum of interest = $25 per contract. Contract size is C$2500 x Rate Index.	Average daily Secured Overnight Financing Rate ("SOFR") interest during the futures contract Delivery Month, such that each basis point per annum of interest is worth $41.67 per futures contract.	£2,500 * Rate Index
Expiry Cycle	Up to the nearest 7 calendar months	Nearest 7 calendar months	Up to 24 contracts
Price Quotation (and final settlement price determination)	Index: 100 – R R = ~~the average daily overnight repo rate for the contract month~~ the compounded daily CORRA for the contract month.	Index: 100 – R R = the average daily overnight repo rate for the contract month	
Minimum Price Fluctuation	Nearest contract month: 0.0025 = C$6.25 All other contract months: 0.005 = C$12.50	First contract month: 0.0025 = US$ 10.4175 All other contracts: 0.005 = US$20.835	First contract month: 0.0025 = £6.25 All other contracts: 0.005 = £12.50
Contract Type	Cash-settled		
Last Trading Day	Last business day preceding the end of the contract month		

Source: Montreal Exchange, CME and ICE Exchange websites

Based on this international benchmarking, the Bourse considers that the proposed futures contracts are justified as their launch represents an opportunity to better serve the needs of market participants, by offering products based on the recognized Canadian risk-free rate benchmark going forward while streamlining its methodology for both term structures

d. Analysis of Impacts

i. Impacts on Market

The Bourse believes the impact on market participants will be minimal as COA is not yet available for trading and the adjusted methodology is expected to kick-start the product. The proposed modification aims to develop an attractive COA contract and support the Bourse's efforts to develop a complete listed yield curve offering, bringing market transparency and trading efficiency benefits to domestic and global market participants. Finally, the proposed settlement methodology is the same as what is currently in effect for the 3-Month CORRA Futures (CRA), suggesting that participants trading the product are already accustomed to this pricing structure.

Table 3 below compares COA's product specifications to CRA's.

Table 3: Proposed key COA and CRA product specifications

Specification	1M CORRA Futures (COA)	3M CORRA Futures (CRA)

Trading Unit	~~Average~~ Compounded daily Canadian Overnight Repo Rate Average ("CORRA") interest during the contract month, such that each basis point per annum of interest = $25 per contract. Contract size is C$2500 x Rate Index	Compounded daily Canadian Overnight Repo Rate Average ("CORRA")interest during the Reference Quarter, such that each basis point per annum of interest = $25 per contract. Contract size is C$2500 x Rate Index
Expiry cycle	Up to the 7 nearest calendar months	12 quarterly contracts *Reference Quarter based on "IMM" dates (3rd wed of Mar/Jun/Sep/Dec)* *Contract Reference Month:* The month in which Reference Quarter begins. *Ex: For a September contract, Reference Quarter starts in September and ends in December*
Last Trading Day	Last business day of the contract month	First business day preceding the end of the Reference Quarter
Price quotation	100 - R (~~average~~ compounded daily CORRA for the contract month)	100 - R (compounded daily CORRA for the Reference Quarter)
Minimum fluctuation price	Nearest contract month: 0.0025 = C$6.25 All other contract months: 0.005 = C$12.50	Nearest quarterly contract: 0.0025 = C$6.25 All other quarterly contracts: 0.005 = C$12.50

Following this adjustment, both COA and CRA futures would have the same final settlement price methodology, based on the geometric average of the realized CORRA values during the reference period contract. The main difference would lie in the period, COA's reference period being a calendar month and not a quarter.

The proposed contract specifications are based on consultations with market participants and end-user clients, in order to increase the effectiveness of CORRA-based products as trading and hedging instruments. The feedback the Bourse has received from the industry is that a better alignment between the contracts specifications and international standards will help grow the acceptance of the futures contract. The Bourse believes that this new product offering will be beneficial for market participants desiring to hedge not only overnight index swap transactions, but also any new floating rate exposure that will be based on CORRA going forward.

ii. Impacts on Technology

Some development in the Bourse's systems was already undertaken during the 2020 launch of the 1-Month and 3-Month CORRA futures contracts. The Bourse was required to make some enhancements to its internal systems and protocols. As such, the exchange has not identified any impediments, whether technical, operational or other, to the implementation of the proposed amendments. It is worth highlighting that the settlement configuration (which is currently supported for the 3M CORRA futures) will need to be adjusted on 1M CORRA futures to switch from an arithmetic to a geometric average.

The product specifications and requirements were already shared with approved participants and independent software vendors in 2019 when the COA was developed in order to ensure a smooth product rollout. To make sure this is still relevant today, proper verifications with participants will be ensured before effectively launching the product.

iii. Impacts on regulatory functions

The proposal has no impact on the supervision, surveillance nor the reporting requirements of the Bourse.

iv. Impacts on clearing functions

The proposed changes should have impact on the clearing functions of CDCC. CDCC's Rules will also need to be updated in order to reflect the proposed changes by the Bourse. No impact is expected on CDCC's Clearing Members, or other Industry participants dealing with CDCC. During the 2020 launch, CDCC had updated its margin methodology to accommodate the launch of both the 1M and 3M CORRA futures. Only a minor adjustment will be required in order to align the tiering of the 1M CORRA futures with the new expiry cycle proposed by the Bourse.

v. Public Interest

The Bourse considers these amendments to be in the interest of the public as the CORRA rate has been identified as the primary interest rate benchmark to be used in financial contracts going forward. The Bank of Canada (through the CARR working group) is leading the benchmark transition efforts in Canada and the Bourse wants to support and facilitate that transition by offering products whose designs are appealing to market participants. The new market environment is favorable to the development of these new products, which should benefit the entire marketplace.

IV.   PROCESS

These amendments are prompted by the desire of the Bourse to offer CORRA-based products that meet participant needs and to align its product offering with international standards. Given recent development regarding the benchmark reforms in multiple jurisdictions, the Bourse believes that having an updated 1M CORRA Futures product suite is essential to develop Term CORRA and should help generate further interest and activity in its listed market.

The proposed amendments, including this analysis, must be approved by the Bourse's Rules and Policies Committee and submitted to the Autorité des marchés financiers, in accordance with the self-certification process, and to the Ontario Securities Commission for information purposes.

V.   ATTACHED DOCUMENTS

Proposed amendments to the Rules of the Bourse.

Article 12.1800 Underlying Interest

The Underlying Interest is the ~~average~~ compounded daily Canadian Overnight Repo Rate Average (CORRA) during the contract month.

Article 12.1801 Expiry Cycle

Unless otherwise determined by the Bourse, the expiry months for trading in One-Month CORRA Futures are up to the seven (7) nearest calendar months. For each contract, the contract month corresponds to the Settlement Month.

Article 12.1802 Trading Unit

Unless otherwise determined by the Bourse, the trading unit is the ~~average~~ compounded daily CORRA during the contract month, such that each basis point per annum of interest = $25 per contract. The contract size is C$2500 x Index.

Article 12.1804 Price Quotation

Unless otherwise determined by the Bourse, bids and offers for the One-Month CORRA Futures are quoted in terms of an Index equal to 100 points minus the ~~average~~ compounded daily Canadian Overnight Repo Rate Average (CORRA) for the contract month.

Index = 100 minus R

$$R = \left[\prod_{i=1}^{d} \left(1 + \frac{CORRA_i \times n_i}{365} \right) - 1 \right] \times \frac{365}{D} \times 100$$

Where:
"d", the number of Business Days in the contract month;
"i" is a series of whole numbers from one to d, each representing the relevant Business Day in chronological order from, and including, the first Business Day in the relevant contract month;
$CORRA_i$ = Canadian Overnight Repo Rate Average ("CORRA") value calculated and representative of the ith day of the contract month;
"n_i" is the number of days in the relevant contract month on which the rate is $CORRA_i$;
"D" is the number of days from, and including, the first Business Day in the relevant contract month up to, and excluding, the first Business Day in the next calendar month

The calculation period for a contract month is from, and including, the first Business Day in the relevant contract month up to, and excluding, the first Business Day in the next calendar month.

Article 12.1812 Final Settlement Price

In the case of One-Month CORRA Futures Contracts:

a) On the last day of trading, open contracts will be marked to market based on the daily Settlement Price. A final Settlement Price will be determined on the Final Settlement Date.

b) The final Settlement Price as determined below by the Bourse shall be used to settle all open One-Month CORRA Futures:

Final Settlement Price for the One-Month CORRA Futures shall be 100 minus the ~~arithmetic average of~~ R value evaluated on the basis of realized CORRA values during the Settlement Month. The calculation period for a Settlement Month is from, and including, the first Business Day in the relevant Contract Month up to, and excluding, the first Business Day in the next calendar month. Weekend and holiday rates are considered to be the rate applicable on the previous business day for which a rate was reported. For example, Friday's rate is used for Saturday and Sunday rates. Holidays are determined based on the Canadian bank holiday (Toronto) calendar. Such ~~arithmetic average~~ R value shall be rounded to the nearest 1/100th of one basis point (0.0001). In case a decimal fraction ends with 0.00005 or higher, the ~~arithmetic average~~ R value shall be rounded up. For example, ~~an arithmetic average~~ an R value of 1.26345 would determine a Final Settlement Price of 98.7365. The daily CORRA values used in the determination of the Final Settlement Price are determined by the appointed CORRA benchmark administrator over the period of the Settlement Month.

Article 12.1800   Underlying Interest

The Underlying Interest is the compounded daily Canadian Overnight Repo Rate Average (CORRA) during the contract month.

Article 12.1801   Expiry Cycle

Unless otherwise determined by the Bourse, the expiry months for trading in One-Month CORRA Futures are up to the seven (7) nearest calendar months. For each contract, the contract month corresponds to the Settlement Month.

Article 12.1802   Trading Unit

Unless otherwise determined by the Bourse, the trading unit is the compounded daily CORRA during the contract month, such that each basis point per annum of interest = \$25 per contract. The contract size is C\$2500 x Index.

Article 12.1804   Price Quotation

Unless otherwise determined by the Bourse, bids and offers for the One-Month CORRA Futures are quoted in terms of an Index equal to 100 points minus the compounded daily Canadian Overnight Repo Rate Average (CORRA) for the contract month.

Index = 100 minus R

$$R = \left[\prod_{i=1}^{d} \left(1 + \frac{CORRA_i \times n_i}{365} \right) - 1 \right] \times \frac{365}{D} \times 100$$

Where:
"d", the number of Business Days in the contract month;
"i" is a series of whole numbers from one to d, each representing the relevant Business Day in chronological order from, and including, the first Business Day in the relevant contract month;
$CORRA_i$ = Canadian Overnight Repo Rate Average ("CORRA") value calculated and representative of the ith day of the contract month;
"n_i" is the number of days in the relevant contract month on which the rate is $CORRA_i$;
"D" is the number of days from, and including, the first Business Day in the relevant contract month up to, and excluding, the first Business Day in the next calendar month

The calculation period for a contract month is from, and including, the first Business Day in the relevant contract month up to, and excluding, the first Business Day in the next calendar month.

Article 12.1812   Final Settlement Price

In the case of One-Month CORRA Futures Contracts:

a) On the last day of trading, open contracts will be marked to market based on the daily Settlement Price. A final Settlement Price will be determined on the Final Settlement Date.

b) The final Settlement Price as determined below by the Bourse shall be used to settle all open One-Month CORRA Futures:

Final Settlement Price for the One-Month CORRA Futures shall be 100 minus the R value evaluated on the basis of realized CORRA values during the Settlement Month. The calculation period for a Settlement Month is from, and including, the first Business Day in the relevant calendar month up to, and excluding, the first Business Day in the next calendar month. Weekend and holiday rates are considered to be the rate applicable on the previous business day for which a rate was reported. For example, Friday's rate is used for Saturday and Sunday rates. Holidays are determined based on the Canadian bank holiday (Toronto) calendar. Such R value shall be rounded to the nearest 1/100th of one basis point (0.0001). In case a decimal fraction ends with 0.00005 or higher, the R value shall be rounded up. For example, an R value of 1.26345 would determine a Final Settlement Price of 98.7365. The daily CORRA values used in the determination of the Final Settlement Price are determined by the appointed CORRA benchmark administrator over the period of the Settlement Month.