



# RBC Solactive Canada Utilities 160 AR Index Autocallable 14.15% Securities (CAD), Series 168 Non-Principal Protected Security

7 year term

Potential 14.1500%  
coupon per annual  
period

75% protection  
barrier

Subscriptions  
Close

on or about  
May 12, 2023

FUNDSERV

RBC4198

This summary is qualified in its entirety by a pricing supplement (the "Pricing Supplement"), the base shelf prospectus dated March 25, 2022, the program prospectus supplement dated March 28, 2022, as supplemented November 11, 2022 and March 2, 2023 and the product prospectus supplement dated March 28, 2022 in respect of index linked securities, as supplemented November 11, 2022 and March 2, 2023.

[www.rbcnotes.com](http://www.rbcnotes.com)

## KEY TERMS

Issuer:	Royal Bank of Canada
Issuer Credit Ratings:	Moody's: Aa1; S&P: AA-; DBRS: AA
Currency:	CAD
Minimum Investment:	50 Debt Securities or \$5,000
Term:	Approximately 7 years
Principal at Risk:	The Debt Securities are not principal protected.
Underlying Index:	The return on the Debt Securities is linked to the adjusted returns of the Solactive Canada Utilities 160 AR Index (the " <b>Underlying Index</b> ") on the Initial Valuation Date and the Observation Dates, including the Final Valuation Date. The Underlying Index is an adjusted return index that aims to track the gross total return performance of the Solactive Canada Utilities Index TR (the " <b>Target Index</b> "), subject to a reduction of a synthetic dividend of 160 index points per annum calculated daily in arrears (the " <b>Adjusted Return Factor</b> "). <b>For the avoidance of doubt, the return on the Debt Securities is linked to the Underlying Index and is not linked to the Target Index.</b> The Closing Level on April 17, 2023 was 3,574.05. The Adjusted Return Factor divided by the Closing Level was therefore equal to 4.4767% on April 17, 2023. If an Autocall Redemption Event does not occur, over the term of the Debt Securities the sum of the Adjusted Return Factor will be approximately 1120 index points, representing 31.3370% of the Closing Level on April 17, 2023. For the calculation of the level of the Target Index, any dividends or other distributions paid on the constituent securities of the Target Index are assumed to be reinvested across all of the constituent securities of the Target Index. As of April 17, 2023, the annual dividend yield on the Target Index was 4.0985%, representing an aggregate dividend yield of approximately 32.468% compounded annually over the term of the Debt Securities, on the assumption that the dividend yield remains constant. Debt Securities do not represent an interest in the Underlying Index, the Target Index or in the securities of the entities that comprise the Target Index, and holders will have no right or entitlement to such securities including, without limitation, redemption rights (if any), voting rights or rights to receive dividends or other distributions paid on such securities.
Issue Date:	May 19, 2023
Initial Index Level:	The " <b>Initial Index Level</b> " is the Closing Level on May 15, 2023 (the " <b>Initial Valuation Date</b> ").
Protection Barrier Level:	The " <b>Protection Barrier Level</b> " is 75.00% of the Initial Index Level.
Final Index Level:	The " <b>Final Index Level</b> " is (i) if an Autocall Redemption Event occurs, the Closing Level on the applicable Observation Date or (ii) if no Autocall Redemption Event occurs, the Closing Level on May 15, 2030 (the " <b>Final Valuation Date</b> ").
Closing Level:	The " <b>Closing Level</b> " on any date is the official closing level of the Underlying Index quoted on <a href="http://www.solactive.com">www.solactive.com</a> for such date, as determined by the Calculation Agent.
Maturity Date:	May 21, 2030

A final base shelf prospectus containing important information relating to the securities described in this document has been filed with the securities regulatory authorities in each of the provinces and territories of Canada. A copy of the final base shelf prospectus, any amendment to the final base shelf prospectus and any applicable shelf prospectus supplement that has been filed, is required to be delivered with this document. This document does not provide full disclosure of all material facts relating to the securities offered. Investors should read the final base shelf prospectus, any amendment and any applicable shelf prospectus supplement for disclosure of those facts, especially risk factors relating to the securities offered, before making an investment decision.

Observation Dates:	<p>An “<b>Observation Date</b>” for the purposes of determining whether an Autocall Redemption Event has occurred and whether the Interest Payment will be payable will occur annually on the dates specified below in each year that the Debt Securities are outstanding, from and including May 15, 2024 to and including the Final Valuation Date. If any such Observation Date is not an Exchange Day, it shall be postponed to the next succeeding Exchange Day.</p> <p>Provided that an Autocall Redemption Event does not occur prior to the Final Valuation Date, the Bank intends the Observation Dates to be:</p> <table><tr><td>May 15, 2024</td><td>May 15, 2025</td><td>May 15, 2026</td><td>May 17, 2027</td></tr><tr><td>May 15, 2028</td><td>May 15, 2029</td><td colspan="2">May 15, 2030 (the Final Valuation Date)</td></tr></table>	May 15, 2024	May 15, 2025	May 15, 2026	May 17, 2027	May 15, 2028	May 15, 2029	May 15, 2030 (the Final Valuation Date)	
May 15, 2024	May 15, 2025	May 15, 2026	May 17, 2027						
May 15, 2028	May 15, 2029	May 15, 2030 (the Final Valuation Date)							
Interest Payment Dates:	<p>The “<b>Interest Payment Date</b>” for the Interest Payment, if any, will occur annually on the dates specified below in each year that the Debt Securities are outstanding, from and including May 21, 2024 to and including the Maturity Date.</p> <p>Provided that an Autocall Redemption Event does not occur prior to the Final Valuation Date, the Bank intends the Interest Payment Dates to be:</p> <table><tr><td>May 21, 2024</td><td>May 21, 2025</td><td>May 21, 2026</td><td>May 20, 2027</td></tr><tr><td>May 18, 2028</td><td>May 18, 2029</td><td colspan="2">May 21, 2030 (the Maturity Date)</td></tr></table> <p>For certainty, no Interest Payment will be made on any Interest Payment Date unless an Autocall Redemption Event occurred on the immediately preceding Observation Date.</p>	May 21, 2024	May 21, 2025	May 21, 2026	May 20, 2027	May 18, 2028	May 18, 2029	May 21, 2030 (the Maturity Date)	
May 21, 2024	May 21, 2025	May 21, 2026	May 20, 2027						
May 18, 2028	May 18, 2029	May 21, 2030 (the Maturity Date)							
Autocall Redemption Event:	<p>An “<b>Autocall Redemption Event</b>” will occur if the Closing Level on an Observation Date is greater than or equal to the Initial Index Level (the “<b>Autocall Redemption Level</b>”). On the next succeeding Interest Payment Date following the occurrence of an Autocall Redemption Event (the “<b>Autocall Redemption Date</b>”) the Debt Securities will be redeemed for an amount equal to the Principal Amount thereof (the “<b>Autocall Redemption Amount</b>”).</p> <p>If an Autocall Redemption Event occurs, in addition to the Autocall Redemption Amount, an interest payment (the “<b>Interest Payment</b>”) on the Debt Securities will be payable on the next succeeding Autocall Redemption Date, in arrears, as follows:</p> <p>(a) if an Autocall Redemption Event occurs on the first Observation Date, the Interest Payment payable per Debt Security will be equal to the sum of (i) \$14.15 and (ii) if the Index Return (defined below) exceeds \$14.15, <math>5.00\% \times (\text{Index Return} - \\$14.15)</math>;</p> <p>(b) if an Autocall Redemption Event occurs on the second Observation Date, the Interest Payment payable per Debt Security will be equal to the sum of (i) \$28.30 and (ii) if the Index Return exceeds \$28.30, <math>5.00\% \times (\text{Index Return} - \\$28.30)</math>;</p> <p>(c) if an Autocall Redemption Event occurs on the third Observation Date, the Interest Payment payable per Debt Security will be equal to the sum of (i) \$42.45 and (ii) if the Index Return exceeds \$42.45, <math>5.00\% \times (\text{Index Return} - \\$42.45)</math>;</p> <p>(d) if an Autocall Redemption Event occurs on the fourth Observation Date, the Interest Payment payable per Debt Security will be equal to the sum of (i) \$56.60 and (ii) if the Index Return exceeds \$56.60, <math>5.00\% \times (\text{Index Return} - \\$56.60)</math>;</p> <p>(e) if an Autocall Redemption Event occurs on the fifth Observation Date, the Interest Payment payable per Debt Security will be equal to the sum of (i) \$70.75 and (ii) if the Index Return exceeds \$70.75, <math>5.00\% \times (\text{Index Return} - \\$70.75)</math>;</p> <p>(f) if an Autocall Redemption Event occurs on the sixth Observation Date, the Interest Payment payable per Debt Security will be equal to the sum of (i) \$84.90 and (ii) if the Index Return exceeds \$84.90, <math>5.00\% \times (\text{Index Return} - \\$84.90)</math>; or</p> <p>(g) if an Autocall Redemption Event occurs on the Final Valuation Date, the Interest Payment payable per Debt Security on the Maturity Date will be equal to the sum of (i) \$99.05 and (ii) if the Index Return exceeds \$99.05, <math>5.00\% \times (\text{Index Return} - \\$99.05)</math>.</p> <p>If an Autocall Redemption Event does not occur on an Observation Date, no Interest Payment will be payable on the Debt Securities on the next succeeding Autocall Redemption Date.</p>								
Payment at Maturity:	<p>On the Maturity Date, if an Autocall Redemption Event has not previously occurred, the amount payable (the “<b>Final Redemption Amount</b>”) for each \$100.00 Principal Amount per Debt Security will be equal to:</p> <p>(a) if the Final Index Level is greater than or equal to the Protection Barrier Level, \$100.00; or</p> <p>(b) if the Final Index Level is less than the Protection Barrier Level, an amount equal to the Index Return, but in any event not less than \$1.00.</p>								
Index Return:	<p>Means (i) for the purpose of calculating the Final Redemption Amount, <math>\\$100.00 \times (X_f / X_i)</math> and (ii) for all other purposes, <math>((X_f / X_i) - 1) \times \\$100.00</math>.</p> <p>where: “<b>X<sub>f</sub></b>” means the Final Index Level, and “<b>X<sub>i</sub></b>” means the Initial Index Level.</p>								

Secondary  
Market:

Fundserv, RBC4198

Generally, to be effective on a Business Day, a redemption request will need to be initiated by 2:00 p.m. (Toronto time) on that Business Day (or such other time as may be established by Fundserv). Any request received after such time will be deemed to be a request sent and received on the next following Business Day.

Early Trading  
Charge Schedule:

If Sold Within the Following No. of  
Days from the Issue Date

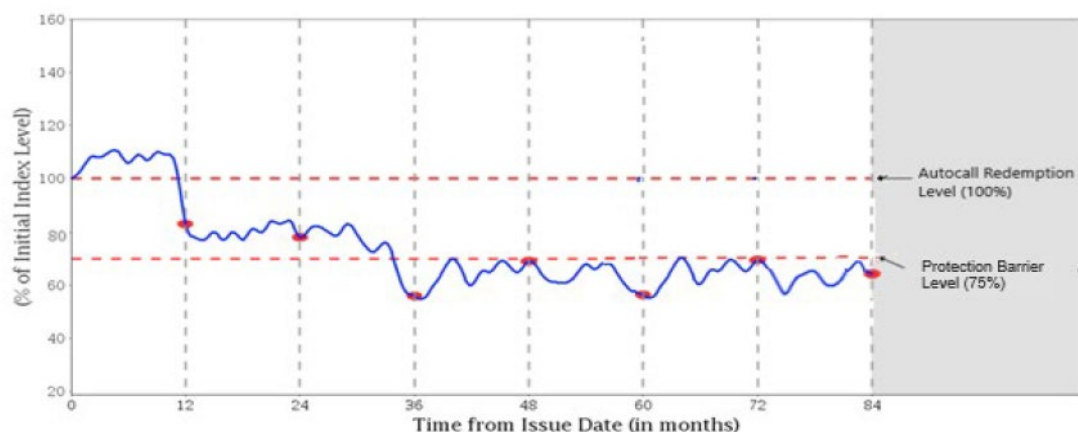
Early Trading Charge  
(% of Principal Amount)

1 – 45 days	3.00%
46 – 90 days	2.75%
91 – 135 days	2.50%
136 – 180 days	2.00%
181 – 225 days	1.50%
226 – 270 days	1.00%
Thereafter	Nil

Sample  
Calculations of  
Final Redemption  
Amount or  
Autocall  
Redemption  
Amount and  
Interest Payment:

The examples set out below are included for illustration purposes only. The performance of the Underlying Index used to illustrate the calculation of the Final Redemption Amount or Autocall Redemption Amount and the Interest Payment over the term of the Debt Securities is not an estimate or forecast of the performance of the Underlying Index or the Debt Securities. All examples assume that a holder of the Debt Securities has purchased Debt Securities with an aggregate principal amount of \$100.00 and that no Extraordinary Event has occurred. All examples assume an Autocall Redemption Level of 100.00% of the Initial Index Level and a Protection Barrier Level of 75.00% of the Initial Index Level. For convenience, each vertical line in the charts below represents both a hypothetical Observation Date and the next succeeding Interest Payment Date. All dollar amounts are rounded to the nearest whole cent.

**Example #1: Loss Scenario with Payment on the Maturity Date at Less Than the Principal Amount**



- Indicates Observation Dates on which the Autocall Redemption Level is not breached; therefore no Interest Payment will occur on the related Interest Payment Date.
- Indicates Observation Date on which the Autocall Redemption Level is exceeded, therefore an Interest Payment will occur on the related Interest Payment Date.
- Solactive Canada Utilities 160 AR Index

In this scenario, there is no Observation Date on which the Closing Level is greater than or equal to the Autocall Redemption Level and, accordingly, the Debt Securities would not be redeemed. On the Final Valuation Date, the Final Index Level is below the Protection Barrier Level.

(i) Interest Payment

In this example, no Autocall Redemption Event would occur because the Closing Level at each Observation Date is below the Autocall Redemption Level. Therefore, an Interest Payment would not be payable on any Interest Payment Date.

(ii) Final Redemption Amount

In this example, the Initial Index Level ( $X_i$ ) is 3,574.05 and the Final Index Level ( $X_f$ ) is 2,573.32. Therefore, the Final Redemption Amount is as follows:

$$\begin{aligned} & \$100.00 \times (X_f / X_i) \\ & \$100.00 \times (2,573.32 / 3,574.05) = \$72.00 \end{aligned}$$

Therefore, the total amounts payable per Debt Security from the Issue Date to the Maturity Date are:

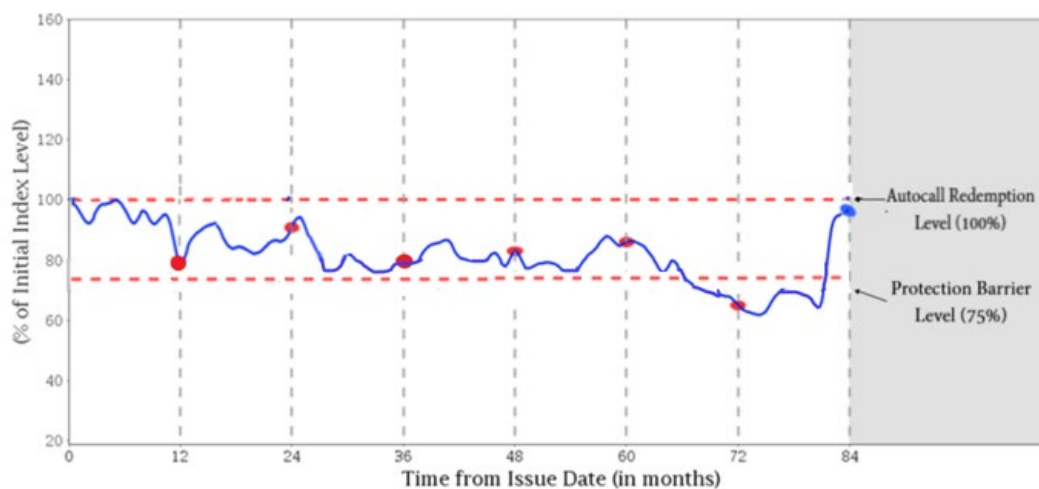
(a) Interest Payment: \$0.00

(b) Final Redemption Amount: \$72.00

(c) Total amount paid over the term of the Debt Securities: \$72.00

The equivalent annually compounded rate of return in this example is -4.58%.

**Example #2: Scenario with Payment on the Maturity Date at the Principal Amount**



- Indicates Observation Dates on which the Autocall Redemption Level is not breached; therefore no Interest Payment will occur on the related Interest Payment Date.
- Indicates Observation Date on which the Autocall Redemption Level is exceeded, therefore an Interest Payment will occur on the related Interest Payment Date.
- Solactive Canada Utilities 160 AR Index

In this scenario, there is no Observation Date on which the Closing Level is greater than or equal to the Autocall Redemption Level and, accordingly, the Debt Securities would not be redeemed. On the Final Valuation Date, the Final Index Level is greater than or equal to the Protection Barrier Level but is below the Autocall Redemption Level.

(i) Interest Payment

In this example, no Autocall Redemption Event would occur because the Closing Level at each Observation Date is below the Autocall Redemption Level. Therefore, an Interest Payment would not be payable on any Interest Payment Date.

(ii) Final Redemption Amount

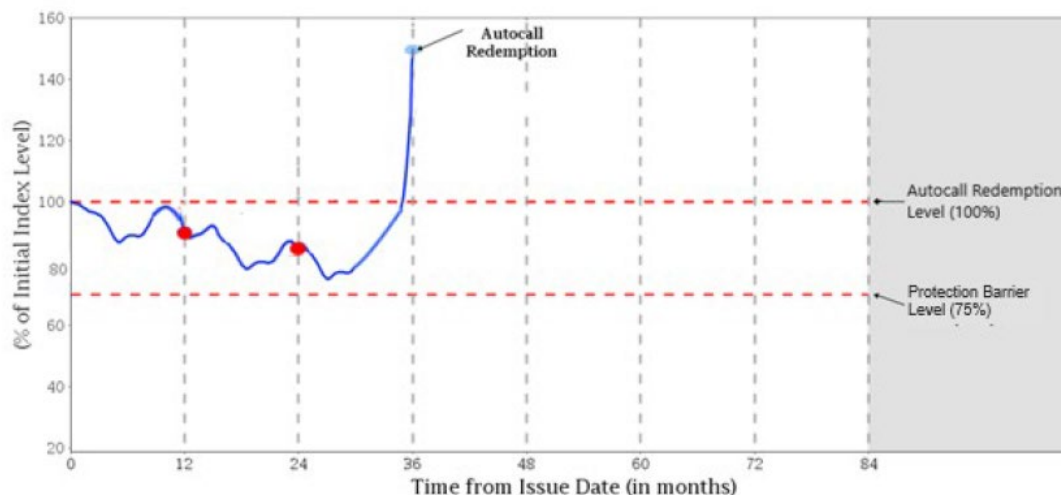
In this example, the Final Index Level is greater than or equal to the Protection Barrier Level. Therefore, the Final Redemption Amount is \$100.00.

Therefore, the total amounts payable per Debt Security from the Issue Date to the Maturity Date are:

- (a) Interest Payment: \$0.00
- (b) Final Redemption Amount: \$100.00
- (c) Total amount paid over the term of the Debt Securities: \$100.00

The equivalent annually compounded rate of return in this example is 0.00%.

### Example #3: Gain Scenario with Autocall Redemption Event



- Indicates Observation Dates on which the Autocall Redemption Level is not breached; therefore no Interest Payment will occur on the related Interest Payment Date.
- Indicates Observation Date on which the Autocall Redemption Level is exceeded, therefore an Interest Payment will occur on the related Interest Payment Date.
- Solactive Canada Utilities 160 AR Index

In this scenario, the Closing Level is greater than or equal to the Autocall Redemption Level on the Observation Date that falls 36 months into the term of the Debt Securities. This would constitute an Autocall Redemption Event and an Interest Payment would be payable on the third Interest Payment Date.

#### (i) Interest Payment

In this example, the Initial Index Level ( $X_i$ ) is 3,574.05 and the Final Index Level ( $X_f$ ) is 5,361.08; therefore, there is an Autocall Redemption Event on the third Observation Date. On the first and second Observation Dates, no Autocall Redemption Event would occur because the Closing Level at each such Observation Date is below the Autocall Redemption Level. Therefore, the Interest Payment payable on the Autocall Redemption Date would be calculated as follows:

The Index Return is calculated as follows:

$$((X_f / X_i) - 1) \times \$100.00$$

$$((5,361.08 / 3,574.05) - 1) \times \$100.00 = \$50.00$$

Since the Index Return is greater than \$42.45, the Interest Payment is:

$$\$42.45 + [5.00\% \times (\text{Index Return} - \$42.45)]$$

$$\$42.45 + [5.00\% \times (\$50.00 - \$42.45)] = \$42.83$$

#### (ii) Autocall Redemption Amount

The Autocall Redemption Amount per Debt Security is equal to \$100.00.

Therefore, the total amounts payable per Debt Security from the Issue Date to the Autocall Redemption Date are:

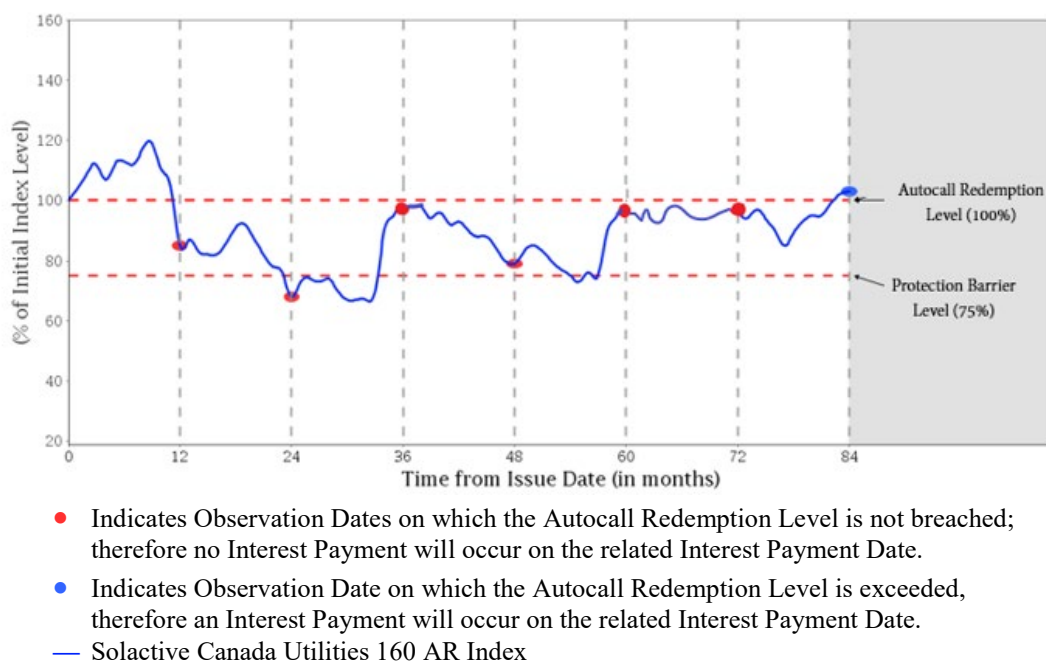
(a) Interest Payment: \$42.83

(b) Autocall Redemption Amount: \$100.00

(c) Total amount paid over the term of the Debt Securities: \$142.83

The equivalent annually compounded rate of return in this example is 12.62%.

#### Example #4: Gain Scenario with Autocall Redemption Event



In this scenario, the Closing Level is greater than or equal to the Autocall Redemption Level on the final Observation Date. This would constitute an Autocall Redemption Event and an Interest Payment would be payable on the Maturity Date (being the final Interest Payment Date).

##### (i) Interest Payment

In this example, the Initial Index Level ( $X_i$ ) is 3,574.05 and the Final Index Level ( $X_f$ ) is 3,752.75; therefore, there is an Autocall Redemption Event on the Final Valuation Date (being the final Observation Date). On the first through sixth Observation Dates, no Autocall Redemption Event would occur because the Closing Level at each such Observation Date is below the Autocall Redemption Level. Therefore, the Interest Payment payable on the Maturity Date (being the final Interest Payment Date) would be calculated as follows:

The Index Return is calculated as follows:

$$\begin{aligned} & ((X_f / X_i) - 1) \times \$100.00 \\ & ((3,752.75 / 3,574.05) - 1) \times \$100.00 = \$5.00 \end{aligned}$$

Since the Index Return is less than \$99.05, the Interest Payment is \$99.05.

##### (ii) Autocall Redemption Amount

The Autocall Redemption Amount per Debt Security is equal to \$100.00.

Therefore, the total amounts payable per Debt Security from the Issue Date to the Autocall Redemption Date are:

(a) Interest Payment: \$99.05

(b) Autocall Redemption Amount: \$100.00

(c) Total amount paid over the term of the Debt Securities: \$199.05

The equivalent annually compounded rate of return in this example is 10.33%.

#### Initial Estimated Value:

The initial estimated value of the Debt Securities as of April 17, 2023 was \$96.88 per Debt Security, which is less than the price to the public and is not an indication of the actual profit to the Bank or its affiliates. The actual value of the Debt Securities at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount. The initial estimated value of the Debt Securities is an estimate only and is based on the value of the Bank's obligation to make the payments on the Debt Securities. We describe our determination of the initial estimated value in more detail in the Pricing Supplement.

The Solactive Canada Utilities 160 AR Index is owned, calculated, administered and published by Solactive AG (“Solactive”), and the name “Solactive” is a registered trademark of Solactive. The Solactive Canada Utilities 160 AR Index has been licensed for use by the Bank in connection with the Debt Securities. The Debt Securities are not sponsored, promoted, sold or supported in any other manner by Solactive and Solactive makes no representation or warranty, express or implied, regarding the advisability of investing in such product(s). Solactive does not guarantee the accuracy or completeness of the Solactive Canada Utilities 160 AR Index or the Solactive Canada Utilities Index TR, any data included therein, or any data from which it is derived, nor has any liability for any errors, omissions, or interruptions therein.

All capitalized terms unless otherwise defined have the meanings ascribed to them in the Pricing Supplement.

Clients should evaluate the financial, market, legal, regulatory, credit, tax and accounting risks and consequences of the proposal before entering into any transaction, or purchasing any instrument. Clients should evaluate such risks and consequences independently of Royal Bank of Canada and the Dealers, RBC Dominion Securities Inc. and iA Private Wealth Inc., respectively.

The Debt Securities will not constitute deposits insured under the *Canada Deposit Insurance Corporation Act*.

The Debt Securities are not fixed income securities and are not designed to be alternatives to fixed income or money market instruments. The Debt Securities are structured products that possess downside risk.

An investment in the Debt Securities involves risks. The Debt Securities are linked to the Underlying Index which reflects (i) the applicable price changes of the constituent securities of the Target Index and any dividends and distributions paid in respect of such securities, without deduction of any withholding tax or other amounts accruing thereon to which an investor holding the constituent securities of the Target Index would typically be exposed, less (ii) the Adjusted Return Factor. An investment in the Debt Securities is not the same as a direct investment in the securities that comprise the Target Index and investors have no rights with respect to the securities underlying such index. The return on the Debt Securities will not reflect the total return that an investor would receive if such investor owned the securities that comprise the Target Index. The Debt Securities are considered to be “specified derivatives” under applicable Canadian securities laws. If you purchase Debt Securities, you will be exposed to changes in the level of the Underlying Index and fluctuations in interest rates, among other factors. Index levels are volatile and an investment in the Debt Securities may be considered to be speculative. Since the Debt Securities are not principal protected and the Principal Amount will be at risk, you could lose substantially all of your investment. Potential purchasers of Debt Securities should consult with their own tax advisors having regard to their particular circumstances.

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