



USD SOFR Linked Notes due 11 February 2024

This termsheet is provided for discussion and/or information purposes only and it does not constitute either an offer or the solicitation of an offer to enter into a securities or any other transaction. It is not intended to set forth a final expression of the terms and conditions of any transaction and it may be amended, superseded or replaced in its entirety by subsequent termsheets or other summaries of terms and conditions. This termsheet does not purport to identify or suggest all of the risks (direct or indirect) which may be associated with the proposed investment.

This termsheet must be read in conjunction with the Prospectus (as supplemented or updated) for the Royal Bank of Canada Programme for the Issuance of Securities, current as of the issue date of the Notes (the "Base Prospectus"). The Base Prospectus can be obtained from <https://www.rbc.com/investor-relations/european-senior-notes-program.html> or such other successor display page that has been designated by the Issuer or provided by Royal Bank of Canada upon request. Terms used but not defined herein are as defined in the Base Prospectus and in particular the Terms and Conditions of the Notes (the "Conditions") set out therein.

No representation is made concerning the legal, tax, regulatory or accounting implications in the United Kingdom and we are not advising you in respect of such matters. Accordingly you must independently determine, with your own advisors, the appropriateness for you of the transaction before transacting.

I. PRODUCT DESCRIPTION

PRODUCT DETAILS	
Issuer	Royal Bank of Canada (Toronto Branch)
Rating	A1 (Stable outlook) by Moody's and A (Stable outlook) by Standard and Poor's
Bail-inable Notes:	Notes are subject to bail-in conversion in Canadian Bail-in Regime
Currency	USD
Issue Size	USD 2,000,000
Specified Denomination	USD 140,000 and increments of 1,000 in excess thereafter
Calculation Amount	USD 1,000
Minimum Trading Size	USD 140,000
Settlement Method	Cash Settlement
ISIN	XS2497680491
RBC Code	RBC FID CITI 9
Issue Price	100% of the Calculation Amount
Listing	None

DATES	
Trade Date	28 July 2022
Issue Date	11 August 2022
Maturity Date	11 February 2024
Interest Commencement Date	11 August 2022
Interest Determination Dates	Five U.S. Government Securities Business Days prior to each Interest Payment Date

Interest Periods	The period from and including each Interest Payment Date to but excluding the following Interest Payment Date with the first such period being the period from and including the Interest Commencement Date to but excluding the first Interest Payment Date.
Interest Payment Dates	The 11 th of each November, February, May and August commencing 11 th November 2022 with a final payment on the Maturity Date.

REFERENCE ITEM

Reference Rate	SOFR
Rate of Interest	As specified in the Condition 4.03 of the Base Prospectus
Screen Rate Determination	Applicable
Overnight Rate	Applicable
Calculation Method	Compounded Daily Rate, as specified in the Condition 4.03 of the Base Prospectus
Observation Method	Lag
Lag	Five U.S. Government Securities Business Days

INTEREST INFORMATION

Interest Amount	From (and including) the Issue Date to (but excluding) the Maturity Date interest shall be payable quarterly in arrears and accrue at a per annum rate determined according to the following formula: Calculation Amount x Min [Max(Rate of Interest, 3.31%); 4.00%]
Day Count	30/360

REDEMPTION AT MATURITY

Settlement Method	Cash Settled
Final Redemption Amount	The Final Redemption Amount shall be determined in accordance with the following provisions: Calculation Amount x 100.00%

GENERAL INFORMATION

Calculation Agent	Royal Bank of Canada, London Branch
Paying Agent	The Bank of New York Mellon, London Branch, One Canada Square, London, E14 5AL, England
Secondary Market	Under normal market conditions, the Dealer intends to maintain a secondary market throughout the lifetime of the Securities with an market making spread of 1.00%
Business Days	For payment: New York and London For Determination of the Reference Item(s): U.S. Government Securities Business Days
Business Day Convention	Following, Unadjusted
Form of Notes	Registered Notes
Registrar	The Bank of New York Mellon SA/NV, Luxembourg Branch
Settlement	Euroclear or Clearstream on a delivery against payment basis

Status	Direct, unsecured and unsubordinated obligations of the Issuer
Documentation	Under the existing Programme for the Issuance of Securities
Dealer (non-syndicated)	RBC Europe Limited
Pricing	This Security is quoted dirty in the secondary market.
Website	www.rbccm.com
TEFRA Rules	TEFRA rules not applicable
Governing Law	Province of Ontario and the laws of Canada applicable therein
Jurisdiction	Courts of Ontario and Canada

II. SIGNIFICANT RISKS FOR INVESTORS

RISKS	
Product Risk	These Securities are capital protected. These Securities are not guaranteed against losses by the Issuer, Dealer, their affiliates, the UK Financial Services Compensation Scheme or any equivalent European deposit guarantee scheme.
U.S. Withholding Tax on Dividend Equivalent Payments	The United States Internal Revenue Code of 1986, as amended, treats a “dividend equivalent” payment as a dividend from sources within the United States. Unless reduced by an applicable tax treaty with the United States, such payments generally would be subject to U.S. withholding tax of 30% if paid to a non-U.S. holder. A non-U.S. holder is a beneficial owner of a Note that, for U.S. federal income tax purposes, is a non-resident alien individual, a foreign corporation, or a foreign estate or trust. Under recently finalized U.S. Treasury Department regulations, payments on certain equity-linked instruments (including deemed payments) that are contingent upon or determined by Reference to actual or estimated U.S. source dividends, (regardless of whether such contingency or determination is explicitly stated or implicitly taken into account in computing one or more of the terms of such instruments) may be treated as dividend equivalents subject to withholding tax. Withholding tax will apply to dividend equivalent payments on Notes issued or materially modified on or after January 1, 2017. If any payments are treated as dividend equivalent subject to withholding, we (or the applicable paying agent) would be required to withhold taxes and would not be required to pay any additional amounts with respect to amounts so withheld. Prospective investors of the Notes should consult their own tax advisers regarding the application of the U.S. rules for withholding on dividend equivalents.
Issuer Risk	Investors bear the issuer risk. The Security’s value and the payment of any income or bonus amount (where one is payable) are dependent not only on the development of the Reference Item, but also on the creditworthiness of the Issuer, which may vary over the term of the Security. The ratings of the Issuer noted above reflect the independent opinion of the rating agencies as to the safety of payments of principal and interest. These ratings are not a guarantee of credit quality. The ratings do not take into consideration any risk associated with fluctuations in the market value of this Security, or where factors other than the Issuer’s credit quality determine the level of principal and interest payments.
Reference Item	The value of the Security is linked to the Reference Item. The past performance of the Reference Item(s) is not an indication or guarantee of future performance. Any decision to invest in the Securities should not be based solely or primarily on the past performance of the Reference Item(s). The performance of the Reference Item may be volatile and subject to unpredictable changes over the term of the Security. The investor should be prepared to assume this risk, including the potential risk of insolvency of the Reference Item issuer. Fluctuations in price of the Reference Item may result in the investor losing the entire investment or a substantial part of it.

	An investment in the Securities does not create a direct investment in the underlying Reference Item(s). Where the Reference Item(s) is an equity/basket of equities, the investor will not be eligible to receive dividend payments or any voting rights associated with a direct investment in the Reference Item(s).
FX Risk	N/A
Physical Delivery	N/A
Liquidity Risk	The investor should be prepared to hold this Security until maturity should it not be called or terminated early, if such option exists, by the Issuer. The Dealer will, however, use its reasonable endeavours to provide liquidity to the Security (either directly or through an affiliate) but is not obliged to do so and may stop providing liquidity at any time without notice. This means an investor should not rely on having the ability to redeem the Security at a particular time or for a certain price. If the Security is redeemed early, the investor may get back less than the stated redemption amount. The Issue Price is not a direct reflection of the market value of the Security. The level at which the investor purchases the Security includes hedging costs and profits that the Dealer or its affiliates expect to incur or realize. The Issue Price may also include selling commissions paid by the Dealer to distributors and/or intermediaries. Any selling commissions, costs and profits will reduce the secondary market level, if any secondary market develops, for the Security. As a result, the investor may experience an immediate and substantial decline in the value of the Securities on the Issue Date.
Suitability	<p>This termsheet is provided for information purposes only and should not be used as the sole or primary basis of any investment decision. Transactions of a type described herein, may involve a high degree of risk and may not be suitable for all investors. Transactions in the Securities should not be undertaken unless the prospective investor understands and is capable of bearing all of the risks associated with an investment in the Securities. Before entering into any transaction, potential investors should take steps to ensure they understand the transaction and have assessed the appropriateness of the transaction in light of their own objectives and circumstances, including the possible risks, benefits and also the tax implications of entering into this proposed transaction. The information in this termsheet does not constitute financial, tax or legal advice and should not be used as a substitute for seeking professional advice. The Dealer is acting as an arm's length counterparty and not as an advisor or fiduciary. It is strongly recommended that potential investors consult their own professional advisers.</p> <p>Institutions referencing this termsheet or extracting information from this termsheet to provide to their clients should ensure that the information satisfies their local jurisdictional requirements and applicable securities laws for conducting business, including any applicable suitability and appropriateness assessment. Investments of a type described herein should only be sold to investors that have the necessary knowledge and experience to fully understand the related risks and are able to bear such risks.</p>
Conflicts of Interest Disclosure	RBC Europe Limited ("RBCEL") forms part of a major banking group. It is therefore possible that RBCEL or one of its subsidiaries, or affiliates, or one of their officers, employees, representatives or agents (together "the Bank Group") or another client of the Bank Group may have interests, relationships and/or arrangements that give rise to conflicts of interest in relation to business that is transacted with you. Members of the Bank Group may perform a variety of roles in connection with the issuance. The Issuer, Dealer, or their affiliates may act as the Calculation Agent and may enter into positions in connection with the issuance. The Issuer, Dealer, or their affiliates may undertake hedging activity including trading in the Reference Item(s) or instruments related to the Reference Item(s), which may have an adverse impact on the value of the Securities. The Issuer, Dealer, or their affiliates may from time-to-time possess or have access to information concerning the Reference Item(s) and are under no obligation to disclose this information to investors. Any conflicts of interest will be managed in accordance with the Bank Group's established policies and procedures.

Tax Risk	An investment in the Securities may give rise to tax consequences. Any tax liability is dependent on the taxpayer's personal circumstances. The basis and level of any taxes may change during the term of the Security.
On-sale of Securities	It is strongly recommended that investors seek independent tax advice prior to an investment in the Securities. The Issuer, Dealer and members of the Bank Group do not provide tax advice. To the extent that any general information is provided with regard to tax, this is for information purposes only and should neither be construed as tax advice nor should it be relied on, or treated as a substitute for seeking independent tax advice.
Fees	The payment of any fee or commission by the Dealer is subject to the relevant regulatory requirements, including those applicable in the jurisdiction(s) that the Dealer and distributor operate in, as well as the jurisdiction(s) into which the Securities are distributed, if different. The Issue Price may include a fee or commission payable by the Dealer to a distributor or third party, such a fee or commission will be determined by a number of factors including but not limited to the maturity of the Security, hedging costs and legal fees. Any fee or commission received by the distributor or third party may be in addition to the fee normally charged by that party in connection with an investment in the Security. Further details in respect of the fee or commission are available upon request.

III. OTHER INFORMATION

SALES RESTRICTION

EEA Retail Investor Offering Information

The Base Prospectus (as contemplated by the Final Terms of the Notes) has been prepared on the basis that any offer of Notes in any Member State of the European Economic Area ("EEA") which has implemented Regulation (EU) 2017/1129 (the "Prospectus Regulation") will be made pursuant to an exemption under the Prospectus Regulation, as implemented in the Relevant State, from the requirement to publish a prospectus for offers of Notes. Accordingly, the Notes should not be sold or offered, directly or indirectly, to persons in any Relevant State except in circumstances which would not require the publication of a prospectus and any person making or intending to make an offer in that Relevant State of Notes should only do so in circumstances in which no obligation arises for the Issuer or RBC Europe Limited to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation in relation to such offer. No recipient of this termsheet is authorized by any person to act in a way which would result in an offer to it being considered to be a placement through an intermediary for the purposes of the Prospectus Regulation.

The Securities are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the EEA without an up-to-date PRIIPS KID being in place with the prior written consent of RBC Europe Limited and provided in accordance with the PRIIPS Regulation. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "MiFID II"); or (ii) a customer within the meaning of Directive (EU) 2016/97, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a qualified investor as defined in Regulation (EU) 2017/1129. If the aforementioned consent of RBC Europe Limited has not been received then no key information document required by Regulation (EU) No 1286/2014 (as amended, the "PRIIPs Regulation") for offering or selling the Notes or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

UK Retail Investor Offering Information

The Securities are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the United Kingdom ("UK") without an up-to-date UK PRIIPS KID being in place with the

prior written consent of RBC Europe Limited and provided in accordance with the UK PRIIPS Regulation. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018 ("EUWA"); or (ii) a customer within the meaning of provisions of the FSMA and any rules or regulations made under the Financial Services and Markets Act 2000 (the "FSMA") to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA; or (iii) as defined in Article 2 of Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA. If the aforementioned consent of RBC Europe Limited has not been received then no key information document ("KID") required by Regulation (EU) No 1286/2014 as it forms part of domestic law by virtue of the EUWA (the "UK PRIIPs Regulation") for offering or selling the Securities or otherwise making them available to retail investors in the UK has been prepared and therefore offering or selling the Securities or otherwise making them available to any retail investor in the UK may be unlawful under the UK PRIIPs Regulation.

Additional UK Offering Information

Each Dealer has represented, warranted and agreed, and each further Dealer appointed under the Programme will be required to represent and agree, that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of any Securities in circumstances in which Section 21(1) of the FSMA would not, if the Issuer was not an authorized person, apply to the Issuer; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to any Securities in, from or otherwise involving the United Kingdom.

US Offering Information

This termsheet is not an offer of securities for sale in the United States. The Notes have not been and will not be registered under the US Securities Act of 1933, as amended (the "Securities Act") or any state securities laws, and may not at any time be offered, pledged, sold or otherwise transferred, directly or indirectly, in the United States or to, or for the account or benefit of, US Persons (as such term is defined in Regulation S under the Securities Act) unless registered under the Securities Act or pursuant to an exemption from such registration.

Swiss Offering Information

Each offeror acknowledges and agrees that, subject to the applicable transitional provisions under the FinSA and the implementing FinSO, the Notes have not been offered and will not be offered, directly or indirectly, to the public in Switzerland, and have not distributed or caused to be distributed and will not distribute or cause to be distributed to the public in Switzerland, the Base Prospectus, this termsheet or any other offering material relating to the Notes, other than pursuant to an exemption under Article 36(1) FinSA or where such offer or distribution does not qualify as a public offer in Switzerland. For these purposes, "public offer" refers to the respective definitions in Article 3(g) and (h) FinSA and as further detailed in FinSO.

Canadian Offering Information

The Notes have not been and will not be qualified for sale under the securities laws of any province or territory of Canada. Each Dealer has represented and agreed that it has not offered, sold or distributed and will not offer, sell or distribute any securities, directly or indirectly, in Canada or to or for the benefit of any resident of Canada, other than in compliance with applicable securities laws. Each Dealer has also represented and agreed that it has not distributed or delivered and will not distribute or deliver this termsheet, or any other offering material in connection with any offering of the securities, in Canada other than in compliance with applicable securities laws.

Hong Kong Offering Information

WARNING

The contents of this termsheet have not been reviewed by any regulatory authority in Hong Kong or any other jurisdiction. You are advised to exercise caution in relation to the offer. If you are in any doubt about any of the contents of this termsheet, you should obtain independent professional advice.

This is a structured product which involves derivatives. Do not invest in it unless you fully understand and are willing to assume the risks associated with it. If you are in any doubt about the risks involved in the product, you may clarify with the intermediary or seek independent professional advice.

This termsheet has not been approved by the Securities and Futures Commission in Hong Kong and, accordingly, (i) the Notes (except for Notes which are "structured products" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong (the "SFO")) may not be offered or sold in Hong Kong by means of this termsheet or any other document other than to "professional investors" as defined in the SFO and any rules made thereunder, or in other circumstances which do not result in the termsheet being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong (the "C(WUMP)O") or which do not constitute an offer to the public within the meaning of C(WUMP)O, and (ii) no person shall issue or possess for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or termsheet relating to the Notes which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to the Notes which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made thereunder. For distribution through Hong Kong, Royal Bank of Canada Hong Kong Branch and/or its associates will receive monetary benefits in distributing this product.

Singapore Offering Information

Each Dealer acknowledges that the Base Prospectus has not been, and will not be, registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each Dealer represents, warrants, and agrees that it has not offered or sold any Notes or caused the Notes to be made the subject of an invitation for subscription or purchase and will not offer or sell any Notes or cause the Notes to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, the Base Prospectus, this termsheet or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of any Notes, whether directly or indirectly, to any person in Singapore other than (a) to an institutional investor (as defined in Section 4A of the SFA) pursuant to Section 274 of the SFA, (b) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or to any person pursuant to Section 275(1A) of the SFA and in accordance with the conditions specified in Section 275 of the SFA or (c) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Notes are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an individual who is an accredited investor, securities or securities-based derivative contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within 6 months after that corporation or that trust has acquired the Notes pursuant to an offer made under Section 275 of the SFA except:
 - (i) to an institutional investor or to a relevant person or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
 - (ii) where no consideration is or will be given for the transfer;
 - (iii) where the transfer is by operation of law;
 - (iv) as specified in Section 276(7) of the SFA; or

	(v) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018 of Singapore.
UAE (excluding Dubai International Financial Centre) Offering Information	Each Dealer has represented and agreed that Notes have not been, and will not be, offered, sold or publicly promoted or advertised by it in the United Arab Emirates other than in compliance with any laws applicable in the United Arab Emirates governing the issue, offering and sale of Notes.
Bahrain Offering Information	This termsheet has been prepared for information purposes of intended investors only who will be high net worth individuals and institutions. The issuer represents and warrants that it has not made and will not make any invitation in or from the kingdom of Bahrain and will not market or offer the securities to any potential investor in Bahrain. All marketing and offering is made and will be made outside the kingdom of Bahrain. The central bank of Bahrain has not reviewed, nor has it approved, this termsheet or the marketing of the securities and takes no responsibility for the accuracy of the statements and information contained in this termsheet, nor shall it have any liability to any person for any loss or damage resulting from reliance on any statements or information contained herein.
Israel Offering Information	<p>Israeli Securities law. Neither such offering nor the Notes have been qualified or approved by the Israeli Securities Authority or any other government or regulatory body. RBC is not licensed under The Regularization of Engagement in Investment Counselling Investment Marketing and Portfolio Management Law, 1995 (the "Counselling Law") and therefore, RBC does not carry insurance as would be required if RBC were licensed.</p> <p>The purchaser represents, warrants and covenants that: (i) the purchaser is acquiring the Notes as a principal only and not as an agent of Royal Bank of Canada, (ii) all risks associated with the holding or owning of the Notes are irrevocably transferred to the purchaser upon the purchase of such Notes by the purchaser, (iii) the purchaser will not share with RBC any gains or losses it realizes in connection with the Notes; (iv) neither RBC nor RBC EL has provided the purchaser with any investment advice in connection with the purchaser's purchase of the Notes and the purchaser has consulted with its own investment advisors in connection therewith; (v) to the extent relevant to the purchaser. The purchaser will comply with the applicable provisions of Israel's Currency Control Law, 1978 and the amended Currency Control Permit, 1998 promulgated thereunder in connection with the Notes; and (vi) the purchaser shall at all times comply with Israeli and other applicable laws and regulations, including securities laws and regulation, in connection with Notes and the purchaser shall take no action which would or not fail to take any action if the failure would cause RBC or RBC EL to be in violation of any such laws or regulations.</p>
Monaco Offering Information	The securities may not be offered or sold, directly or indirectly, to the public in Monaco other than by a Monaco Bank or a duly authorized Monegasque intermediary. Consequently, this document may only be communicated to Monaco banks duly licensed by the "Autorité de Contrôle Prudentiel" and fully licensed Monaco portfolio management companies by virtue of Law n° 1.144 of July 26, 1991 and Law 1.338, of September 7, 2007 duly licensed by the "Commission de Contrôle des Activités Financières" ("CCAF"). Such regulated intermediaries may in turn communicate this document to potential investors.
Dubai International Financial Centre Offering Information	<p>Each Dealer has represented and agreed that it has not offered and will not offer Notes to any person in the Dubai International Financial Centre unless such offer is:</p> <p>(a) An "Exempt Offer" in accordance with the Market Rules (MKT) Module of the Dubai Financial Services Authority (the "DFSA") rulebook; and</p> <p>(b) Made only to persons who meet the Professional Client criteria set out in Rule 2.3.3 of the Conduct of Business Module of the DFSA rulebook.</p>
Japan Offering Information	No registration pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948, as amended) (the "FIEA") has been made or will be made with respect to the Notes. The Dealer has represented and agreed, and each further Dealer appointed under the Base Prospectus will be required to represent

and agree, that it will not offer or sell any Notes, directly or indirectly, in Japan or to, or for the benefit of, any Resident of Japan (as defined under Article 6, Paragraph 1, Item 5 of the Foreign Exchange and Foreign Trade Act (Act No. 228 of 1949, as amended)), or to others for re-offering or resale, directly or indirectly, in Japan or to, or for the benefit of a resident of Japan except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEA and any other applicable laws, regulations and ministerial guidelines of Japan.

THE ABOVE IS A SUMMARY OF THE INDICATIVE TERMS AND CONDITIONS OF A PROPOSED TRANSACTION AND DOES NOT INCLUDE ALL DEFINED TERMS. ALL THE INDICATIVE TERMS AND CONDITIONS ABOVE ARE SUBJECT TO CHANGE; THEREFORE NO RELIANCE SHOULD BE PLACED ON THIS SUMMARY. WHEN MAKING AN INVESTMENT DECISION, ANY PROSPECTIVE INVESTOR SHOULD RELY SOLELY ON THE FINAL PRICING SUPPLEMENT, WHICH WILL CONTAIN THE FINAL TERMS AND CONDITIONS OF THE TRANSACTION, NOT ON THE SUMMARY ABOVE.

This document has been prepared by RBC Capital Markets ("RBCCM") for discussion and/or information purposes only and does not constitute either an offer or the solicitation of an offer to enter into securities or any other transaction. This document is an indicative summary of the terms and conditions of the transaction described herein. It is not intended to set forth a final expression of the terms and conditions of any transaction and it may be amended, superseded or replaced in its entirety by subsequent summaries and should not be relied on. Should a transaction ultimately be entered into between us, the final terms and conditions of the transaction will be set out in full in a binding transaction document and reference should be made only to such document and not this indicative termsheet for definitive information. This document shall not constitute an underwriting commitment, an offer to sell, or the solicitation of an offer to buy any securities, commodities or other instruments, or a recommendation to enter into any transaction by any RBC entity. Nor is it an official or unofficial confirmation of terms. Although the indicative information set forth herein is reflective of terms, as of the date of this communication, under which we believe an issuance of securities or other transactions might be structured, no assurance can be given that such an issuance or transaction could in fact be executed, nor is any entity obligated to issue such securities or obligations or enter into any transaction. To the extent that you subsequently enter into a transaction with RBC and/or any of its affiliates this would be on the basis that you were transacting with us as principal (and not as agent or in any other capacity, fiduciary or otherwise) and no other person would have an interest herein.

All information, terms and pricing set forth herein is indicative and subject to change without notice. Any opinions expressed herein reflect our judgement at the date and time hereof and are subject to change without notice. The information contained in this document has been internally developed or taken from trade and statistical services and other sources which we deem reliable, but no warranty is made that such information is accurate or complete and it should not be relied upon as such.

Transactions of the type described herein may involve a high degree of risk and the value of such investments may be highly volatile. Such risks may include without limitation risk of adverse or unanticipated market developments, risk of issuers default and risk of liquidity. In certain transactions counterparties may lose their entire investment or incur an unlimited loss.

This brief statement does not purport to identify or suggest all the risks (directly or indirectly) and other significant aspects in connection with transactions of the type described herein, and counterparties should ensure that they fully understand the terms of the transaction, including the relevant risk factors and any legal, tax, regulatory or accounting considerations applicable to them, prior to transacting. No representation is made concerning the legal, tax, regulatory or accounting implications in any applicable jurisdiction and we are not advising you in respect of such matters. Accordingly you must independently determine, with your own advisors, the appropriateness for you of the transaction before transacting. To the fullest extent permissible by law, RBCCM accepts no liability for any loss (including consequential losses) arising from the use of this document or reliance on the information contained herein. RBCCM is acting solely in the capacity of an arm's length contractual counterparty and not in the capacity of your financial adviser or fiduciary.

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