BMO Global Commodities Research

Copper: 2024's "Bad Year" Disappears

Bottom Line:

It is strange to think that only two months have passed since LME Week, where expectations for 2024's copper market were decidedly downbeat. Since then, we have had the return of supply disruption plus maiden guidance from a number of producers coming in lower than our previous expectations. Meanwhile, China's 2024 copper demand is looking more robust, with grid and energy transition related areas continuing to see strong investment. We have taken the opportunity to refresh our copper supply-demand balance, which shows the expected 2024 inventory build has now disappeared.

Key Points

2024 was meant to challenging for copper. It was the year when the triumvirate of large mine ramp-ups—Kamoa-Kakula, Quellaveco and QB2—were at full capacity, and would be joined by new supply from Russia and the DRC as the year progressed. Meanwhile, China's property completions are set to slow. It is fair to say these fundamental factors are still in place, but the <u>anticipated large surplus</u> they were expected to drive (BMO expected 2024 surplus in October ~170kt, industry consultants 300-400kt) no longer holds.

Existing mines the problem again. We have added up the reductions in 2024 copper guidance relative to our expectations over the past few weeks, and we are now north of 750kt, or 3% of global copper supply. Partly this has been from guidance downgrades, with as an example <u>Anglo American</u> last Friday dropping estimates by ~195kt for next year owing to geotechnical faults and ore hardness. The other element has been the effective removal of Cobre Panama from the model for 2024, though currently we have this returning in 2025.

Dealing with disruption. Modelling copper involves a large number of factors, many of which are inherently linked. We had been running a higher than normal disruption allowance for 2024 to deal with likely Cobre Panama problems, and have naturally reduced the excess with the mine now out of the model. At >1Mt, the disruption allowance for 2024 is high relative to any expected balance, as is always the case at this time of year.

Concentrate deficit now expected. The biggest shift in balance has been for the concentrate market, which we now see in a 75kt (copper contained) deficit for 2024, from a ~200kt surplus previously. This could see further falls in spot TCRCs into early 2024, and increased pressure on smelter profitability.

China up, ex-China down for demand. We are slightly more confident in China's potential grid spending next year, and have thus upped our expected refined 2024 demand growth from 1.9% to 2.2%. We have also removed 100kt of modelled SRB purchases. However, we now model y/y declines for the U.S. and Europe. Global copper demand is expected to grow 1.8%, slightly better than the current year but still sub-trend.

A balanced market in a 'bad year'. We now model the refined market as essentially balanced in 2024 (18kt deficit) with <100kt surpluses in 2025 and 2026. This leaves inventory cover extremely low, which should keep copper at a premium to the cost curve. Further out, we have to <u>constrain potential demand</u> growth via thrifting and substitution due to a lack of available supply.

Page 2 of this report shows our new summary copper supply-demand table.

This report was prepared by an analyst(s) employed by BMO Capital Markets Limited, authorised and regulated by the Financial Conduct Authority in the UK. The analyst(s) is (are) not registered as a research analyst(s) under FINRA rules.

For disclosure statements, including the Analyst Certification, please refer to page(s) 3 to 6.



BMO Global Commodities Research

Colin HamiltonAnalystcolin.hamilton@bmo.com+44 (0)20 7664 8172Alona YundaAssociatealona.yunda@bmo.com+44 (0) 789 479 7518Abigail MottAssociateabigail.mott@bmo.com+44 (0) 77 2132 6394

Legal Entity: BMO Capital Markets Limited



Industry Research

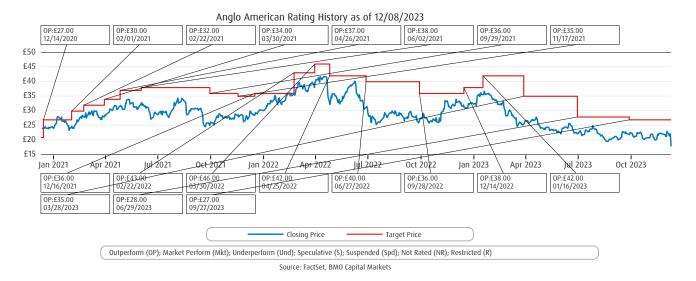


Glossary



BMO Copper Supply-Demand Balance

Supply			2021	2022	2023E	2024E	2025E	2026E	2027E	2028
	Chile	kt Cu	5660	5376	5309	5475	5728	5724	5643	53
	Peru	kt Cu	2282	2415	2640	2641	2592	2427	2295	23
	United States	kt Cu	1264	1261	1238	1287	1294	1308	1255	12
	China	kt Cu	1792	1930	2062	2005	1980	1995	1971	19
	Australia	kt Cu	805	831	812	791	747	739	643	6
	Indonesia	kt Cu	753	967	949	915	857	817	858	8
	DRC	kt Cu	2014	2438	2679	2819	3004	3101	3112	31
	Zambia	kt Cu	828	794	811	790	841	968	973	9
	Russia	kt Cu	862	942	960	918	1026	1005	986	9
	RoW	kt Cu	5129	5142	5435	5404	5814	5974	5660	57
Disruption Allowance	Global	kt	3127	0	0	-1253	-1592	-1678	-1562	-13
Project Allowance	Global	kt	0	0	0	12	119	429	837	13
Total Mine Supply	Global	kt Cu	21390	22095	22895	23058	24000	24486	24231	245
y/y change	Global	%	2.3%	3.3%	3.6%	0.7%	4.1%	2.0%	-1.0%	1.2
y/ y change		70	2.5 70	3.5%	3.0%	0.7 70	4.170	2.0 70	1.070	1.2
Supply	China	kt Cu	9342	9710	10570	10791	11285	11821	12040	120
Supply	RoW	kt Cu	11521	11683	11578	11693	12128	12226	12242	124
Total Smelter Supply	Global	kt Cu	20863	21393	22149	22484	23413	24047	24282	245
y/y change		%	2.9%	2.5%	3.5%	1.5%	4.1%	2.7%	1.0%	1.0
Concentrate Requirement	Global	kt Cu	18064	18543	19213	19558	20465	21018	21160	213
Available Concentrate	Global	kt Cu	17943	18435	19238	19483	20460	20983	20886	2132
Concentrate Balance	Global	kt Cu	-122	-108	24	-75	-5	-36	-274	7
Total Refined Supply	Global	kt	24760	25305	25850	26125	27018	27681	27883	2805
	y/y change	0/0	1.6%	2.2%	2.2%	1.1%	3.4%	2.5%	0.7%	0.6
Refined Demand	China	kt	13933	14323	14824	15150	15605	15917	16076	159
Refined Demand	Japan	kt	918	907	862	888	906	924	933	9
Refined Demand	India	kt	533	645	706	766	824	886	952	10
Refined Demand	Other Asia	kt	2318	2341	2306	2369	2440	2537	2639	27
Refined Demand	United States	kt	1773	1791	1782	1773	1826	1872	1900	19
Refined Demand	Europe	kt	3601	3457	3319	3269	3335	3385	3435	34
Refined Demand	RoW	kt	2072	1951	1871	1927	1985	2062	2137	22
Total Refined Demand	Global	kt	25149	25416	25671	26143	26920	27582	28072	2829
Strategic Stock Change	SRB	kt	-120		120	0	0	0	-100	-10
Surplus (Deficit)	Global	kt	-269	-111	59	-18	98	99	-89	-14
Global Inventory	Global	kt	1141	1031	1090	1072	1171	1269	1180	103
Reported Stocks	Global	Days	17	15	15	15	16	17	15	10.
		DOV.	1/							



IMPORTANT DISCLOSURES

Analyst's Certification

I, Colin Hamilton, hereby certify that the views expressed in this report accurately reflect my personal views about the subject securities or issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Analysts who prepared this report are compensated based upon (among other factors) the overall profitability of BMO Capital Markets and their affiliates, which includes the overall profitability of investment banking services. Compensation for research is based on effectiveness in generating new ideas and in communication of ideas to clients, performance of recommendations, accuracy of earnings estimates, and service to clients.

Analysts employed by BMO Nesbitt Burns Inc. and/or BMO Capital Markets Limited are not registered as research analysts with FINRA. These analysts may not be associated persons of BMO Capital Markets Corp. and therefore may not be subject to the FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

Company Specific Disclosures

Disclosure 1: BMO Capital Markets has undertaken an underwriting liability with respect to Anglo American within the past 12 months.

Disclosure 2: BMO Capital Markets has provided investment banking services for remuneration with respect to Anglo American within the past 12 months.

Disclosure 3: BMO Capital Markets has managed or co-managed a public offering of securities with respect to Anglo American within the past 12 months.

Disclosure 4: BMO Capital Markets or an affiliate has received compensation for investment banking services from Anglo American within the past 12 months.

Disclosure 5: BMO Capital Markets or an affiliate received compensation for products or services other than investment banking services within the past 12 months from Anglo American.

Disclosure 6A: Anglo American is a client (or was a client) of BMO Nesbitt Burns Inc., BMO Capital Markets Corp., BMO Capital Markets Limited or an affiliate within the past 12 months: A) Investment Banking Services

Disclosure 6C: Anglo American is a client (or was a client) of BMO Nesbitt Burns Inc., BMO Capital Markets Corp., BMO Capital Markets Limited or an affiliate within the past 12 months: C) Non-Securities Related Services.

Methodology and Risks to Target Price/Valuation for Anglo American (AAL-LSE)

Methodology: The target price is derived using a weighted blend of NPV, EBITDA multiples, growth factors, and mine life.

Risks: Anglo American is exposed to the global demand for its key commodities, which include copper, coal, platinum, and iron ore. Anglo American is also exposed to the volatility of commodity prices and exchange rates, particularly the South African rand, the Brazilian real, the Chilean peso and the Australian dollar.

Distribution of Ratings (December 09, 2023)

Rating category	BMO rating	BMOCM US Universe*	BMOCM US IB Clients**	BMOCM US IB Clients***	BMOCM Universe****	BMOCM IB Clients****	StarMine Universe~
Buy	Outperform	47.3 %	15.8 %	44.0 %	53.7 %	56.9 %	57.7%
Hold	Market Perform	50.0 %	17.6 %	52.0 %	44.8 %	41.7 %	37.5%
Sell	Underperform	2.5 %	18.2 %	2.7 %	1.4 %	1.0 %	4.8%

^{*} Reflects rating distribution of all companies covered by BMO Capital Markets Corp. equity research analysts.

Other Important Disclosures

For Important Disclosures on the stocks discussed in this report, please go to https://researchglobal0.bmocapitalmarkets.com/public-disclosure/ or write to Editorial Department, BMO Capital Markets, 151 West 42nd St, 33rd Floor, New York, NY 10036 or Editorial Department, BMO Capital Markets, 1 First Canadian Place, Toronto, Ontario, M5X 1H3.

Dissemination of Research

Dissemination of fundamental BMO Capital Markets Equity Research is available via our website https://researchglobal0.bmocapitalmarkets.com/. Institutional clients may also simultaneously receive our fundamental research via email and/or via services such as Refinitiv, Bloomberg, FactSet, Visible Alpha, and S&P Capital IQ.

BMO Capital Markets issues a variety of research products in addition to fundamental research. Institutional clients may request notification when additional research content is made available on our website. BMO Capital Markets may use proprietary models in the preparation of reports. Material information about such models may be obtained by contacting the research analyst directly. There is no planned frequency of model updates.

The analyst(s) named in this report may discuss trading strategies that reference a catalyst or event that may have a near or long term impact on the market price of the equity securities discussed. In some cases, the impact may directionally counter the analyst's published 12 month target price and rating. Any such trading or alternative strategies can be based on differing time horizons, methodologies, or otherwise and are distinct from and do not affect the analysts' fundamental equity rating in the report.

Research coverage of licensed cannabis producers and other cannabis-related companies is made available only to eligible approved North American, Australian, and EU-based BMO Nesbitt Burns Inc., BMO Capital Markets Limited, Bank of Montreal Europe Plc and BMO Capital Markets Corp. clients via email, our website and select third party platforms.

~ Research distribution and approval times are provided on the cover of each report. Times are approximations as system and distribution processes are not exact and can vary based on the sender and recipients' services. Unless otherwise noted, times are Eastern Standard and when two times are provided, the approval time precedes the distribution time.

For recommendations disseminated during the preceding 12-month period, please visit: https://researchglobal0.bmocapitalmarkets.com/public-disclosure/.

General Disclaimer

"BMO Capital Markets" is a trade name used by BMO Financial Group for the wholesale banking businesses of Bank of Montreal, BMO Bank N.A. (member FDIC), Bank of Montreal Europe p.l.c, and Bank of Montreal (China) Co. Ltd, the institutional broker dealer business of BMO Capital Markets Corp. (Member FINRA and SIPC) and the agency broker dealer business of Clearpool Execution Services, LLC (Member FINRA and SIPC) in the U.S., and the institutional broker dealer businesses of BMO Nesbitt Burns Inc. (Member Investment Industry Regulatory Organization of Canada and Member Canadian Investor Protection Fund) in Canada and Asia, Bank of Montreal Europe p.l.c. (authorised and regulated by the Central Bank of Ireland) in Europe and BMO Capital Markets Limited (authorised and regulated by the Financial Conduct Authority) in the UK and Australia. Bank of Montreal or its subsidiaries ("BMO Financial Group") has lending arrangements with, or provide other remunerated services to, many issuers covered by BMO Capital Markets. The opinions, estimates and projections contained in this report are those of BMO Capital Markets as of the date of this report and are subject to change without notice. BMO Capital Markets endeavours to ensure that the contents have been compiled or derived from sources that we believe are reliable and contain information and opinions that are accurate and complete. However, BMO Capital Markets makes no representation or warranty, express or implied, in respect thereof, takes no responsibility for any errors and omissions contained herein and accepts no liability whatsoever for any loss arising from any use of, or reliance on, this report or its contents.

^{**} Reflects rating distribution of all companies from which BMO Capital Markets Corp. has received compensation for Investment Banking services as percentage within ratings category.

^{***} Reflects rating distribution of all companies from which BMO Capital Markets Corp. has received compensation for Investment Banking services as percentage of Investment Banking clients.

^{****} Reflects rating distribution of all companies covered by BMO Capital Markets equity research analysts.

^{******} Reflects rating distribution of all companies from which BMO Capital Markets has received compensation for Investment Banking services as percentage of Investment Banking clients.

[~] As of April 1, 2019.

Information may be available to BMO Capital Markets or its affiliates that is not reflected in this report. The information in this report is not intended to be used as the primary basis of investment decisions, and because of individual client objectives, should not be construed as advice designed to meet the particular investment needs of any investor. The information in this report is based on general considerations and do not purport to meet the objectives or needs of specific recipients. Nothing herein constitutes any investment, legal, tax or other advice nor is it to be relied on in any investment or decision. If you are in doubt about any of the contents of this document, the reader should obtain independent professional advice. This material is for information purposes only and is not an offer to sell or the solicitation of an offer to buy any security. In furnishing this report, BMO Capital Markets intends to take advantage of the exemption from the principal and agency trading restrictions in Section 206(3) of the Investment Advisers Act of 1940 and Rule 206(3)-1 thereunder. Accordingly, recipients of this report are advised that BMO Capital Markets or its affiliates may act as principal for its own account or agent for another person in connection with the purchase or sale of any security mentioned in or the subject of this report. BMO Capital Markets or its affiliates, officers, directors or employees have a long or short position in many of the securities discussed herein, related securities or in options, futures or other derivative instruments based thereon. The reader should assume that BMO Capital Markets or its affiliates may have a conflict of interest and should not rely solely on this report in evaluating whether or not to buy or sell securities of issuers discussed herein.

Additional Matters

This report is directed only at entities or persons in jurisdictions or countries where access to and use of the information is not contrary to local laws or regulations. Its contents have not been reviewed by any regulatory authority. BMO Capital Markets does not represent that this report may be lawfully distributed or that any financial products may be lawfully offered or dealt with, in compliance with regulatory requirements in other jurisdictions, or pursuant to an exemption available thereunder.

To Australian residents: BMO Capital Markets Limited and Bank of Montreal are exempt from the requirement to hold an Australian financial services licence under the Corporations Act in respect of financial services they provide to wholesale investors (as defined in the Corporations Act). BMO Capital Markets Limited is regulated by the UK Financial Conduct Authority under UK laws, and Bank of Montreal in Hong Kong is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission, which differ from Australia laws. This document is only intended for wholesale clients (as defined in the Corporations Act 2001), Eligible Counterparties or Professional Clients (as defined in Annex II to MiFID II) and Professional Investors (as defined in the Securities and Futures Ordinance and the Securities and Futures Ordinance of Hong Kong).

To Canadian Residents: BMO Nesbitt Burns Inc. furnishes this report to Canadian residents and accepts responsibility for the contents herein subject to the terms set out above. Any Canadian person wishing to effect transactions in any of the securities included in this report should do so through BMO Nesbitt Burns Inc.

The following applies if this research was prepared in whole or in part by Colin Hamilton, Alexander Pearce or Rai Ray:

This research is not prepared subject to Canadian disclosure requirements. This research is prepared by BMO Capital Markets Limited and distributed by BMO Capital Markets Limited or Bank of Montreal Europe Plc and is subject to the regulations of the Financial Conduct Authority (FCA) in the United Kingdom and the Central Bank of Ireland (CBI) in Ireland. FCA and CBI regulations require that a firm providing research disclose its ownership interest in the issuer that is the subject of the research if it and its affiliates own 5% or more of the equity of the issuer. Canadian regulations require that a firm providing research disclose its ownership interest in the issuer that is the subject of the research if it and its affiliates own 1% or more of the equity of the issuer that is the subject of the research. Therefore each of BMO Capital Markets Limited and Bank of Montreal Europe Plc will disclose its and its affiliates' ownership interest in the subject issuer only if such ownership exceeds 5% of the equity of the issuer.

To E.U. Residents: In an E.U. Member State this document is issued and distributed by Bank of Montreal Europe plc which is authorised and regulated in Ireland and operates in the E.U. on a passported basis. This document is only intended for Eligible Counterparties or Professional Clients, as defined in Annex II to "Markets in Financial Instruments Directive" 2014/65/EU ("MiFID II").

To U.S. Residents: BMO Capital Markets Corp. furnishes this report to U.S. residents and accepts responsibility for the contents herein, except to the extent that it refers to securities of Bank of Montreal. Any U.S. person wishing to effect transactions in any security discussed herein should do so through BMO Capital Markets Corp.

To U.K. Residents: In the UK this document is published by BMO Capital Markets Limited which is authorised and regulated by the Financial Conduct Authority. The contents hereof are intended solely for the use of, and may only be issued or passed on to, (I) persons who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order") or (II) high net worth entities falling within Article 49(2)(a) to (d) of the Order (all such persons together referred to as "relevant persons"). The contents hereof are not intended for the use of and may not be issued or passed on to retail clients.

To Hong Kong Residents: In Hong Kong, this report is published and distributed by Bank of Montreal. Bank of Montreal (incorporated in Canada with limited liability) is an authorized institution under the Banking Ordinance and a registered institution with the Securities and Futures Commission (CE No. AAK809) to carry on Type 1 (dealing in securities) and Type 4 (advising in securities) regulated activities under the Securities and Futures Ordinance (Cap 571 of the Laws of Hong Kong). This report has not been reviewed or approved by any regulatory authority in Hong Kong. Accordingly this report must not be issued, circulated or distributed in Hong Kong other than (a) to professional investors as defined in the Securities and Futures Ordinance and the Securities and Futures (Professional Investor) Rules under the Securities and Futures Ordinance of Hong Kong, or (b) in circumstances which do not result in or constitute an offer to the public in Hong Kong.

To Korean Residents: This report has been provided to you without charge for your convenience only. All information contained in this report is factual information and does not reflect any opinion or judgement of BMO Capital Markets. The information contained in this report should not be construed as offer, marketing, solicitation or investment advice with respect to financial investment products in this report.

To Japan Residents: This report has not been reviewed by any regulatory authority in Japan. This report is provided for information purposes only and it should not be construed as an offer to sell, a solicitation to buy, or a recommendation for any security, or as an offer to provide investment management or advisory or other services in Japan. Securities may not be offered or sold in Japan by means of this report or any other document other than to Qualified Financial Institutions within the meaning of item (i) of Article 17-3 of the Government Ordinance to enforce the Financial Instruments and Exchange Act (Kinyu Shohin Torihiki Ho Sekou Rei). Unless specified otherwise, the securities that may be offered to you are not and will not be registered in Japan pursuant to the Financial Instruments and Exchange Acts.

To Taiwanese Residents: This report is not intended to constitute investment advice nor a public offer for any investment products to investors in Taiwan. This report should only be accessed by investors in Taiwan that are qualified to invest in investment products pursuant to relevant Taiwanese laws and regulations, and subject to sales restrictions as set forth in the relevant Taiwanese laws and regulations. BMO Capital Markets has not and will not secure the required licenses in Taiwan for the offer of securities and investment services. Any offer of securities has not been and will not be registered or filed with or approved by the Financial Commission of Taiwan and/or other regulatory authority pursuant to relevant securities laws and regulations of Taiwan, and may not be issued, offered or sold within Taiwan through a public offering or in circumstances which constitute an offer that requires a registration, filing or approval of the Financial Supervisory Commission of Taiwan and/or other regulatory authority in Taiwan under relevant securities laws and regulations of Taiwan. No person or entity in Taiwan has been authorized to offer or sell the securities in Taiwan.

To Singapore Residents: This report is intended for general circulation and does not and is not intended to constitute the provision of financial advisory services, whether directly or indirectly, to persons in Singapore. You should seek advice from a financial advisor regarding the suitability of the investment products, taking into account your specific investment objectives, financial situation or particular needs before you make a commitment to purchase the investment product. This report has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, it should not be circulated or distributed, nor may the securities described herein be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (a) to an institutional investor or a relevant person as defined in and pursuant to and in accordance with the conditions of the relevant provisions of the Securities and Futures Act of Singapore or (b) otherwise pursuant to and in accordance with the conditions of, any other applicable provision of the SFA.

To Israeli residents: BMO Capital Markets is not licensed under the Israeli Law for the Regulation of Investment Advice, Investment Marketing and Portfolio Management of 1995 (the "Advice Law") nor does it carry insurance as required thereunder. This document is to be distributed solely to persons that are qualified clients (as defined under the Advice Law) and qualified investors under the Israeli Securities Law of 1968. This document represents the analysis of the analysis but there is no assurance that any assumption or estimation will materialize.

These documents are provided to you on the express understanding that they must be held in complete confidence and not republished, retransmitted, distributed, disclosed, or otherwise made available, in whole or in part, directly or indirectly, in hard or soft copy, through any means, to any person, except with the prior written consent of BMO Capital Markets.

Click here for data vendor disclosures when referenced within a BMO Capital Markets research document.

For assistance with accessible formats of online content, please contact research@bmo.com.

The recommendation contained in this report was produced at December 10, 2023, 19:24 ET. and disseminated at December 10, 2023, 19:24 ET.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST

BMO Financial Group (NYSE, TSX: BMO) is an integrated financial services provider offering a range of retail banking, wealth management, and investment and corporate banking products. BMO serves Canadian retail clients through BMO Bank of Montreal and BMO Nesbitt Burns. In the United States, personal and commercial banking clients are served by BMO Bank N.A., (Member FDIC). Investment and corporate banking services are provided in Canada and the US through BMO Capital Markets.

BMO Capital Markets is a trade name used by BMO Financial Group for the wholesale banking businesses of Bank of Montreal, BMO Bank N.A. (member FDIC), Bank of Montreal Europe p.l.c, and Bank of Montreal (China) Co. Ltd, the institutional broker dealer business of BMO Capital Markets Corp. (Member FINRA and SIPC) and the agency broker dealer business of Clearpool Execution Services, LLC (Member FINRA and SIPC) in the U.S., and the institutional broker dealer businesses of BMO Nesbitt Burns Inc. (Member Investment Industry Regulatory Organization of Canada and Member Canadian Investor Protection Fund) in Canada and Asia, Bank of Montreal Europe p.l.c. (authorised and regulated by the Central Bank of Ireland) in Europe and BMO Capital Markets Limited (authorised and regulated by the Financial Conduct Authority) in the UK and Australia.

"Nesbitt Burns" is a registered trademark of BMO Nesbitt Burns Corporation Limited, used under license. "BMO Capital Markets" is a trademark of Bank of Montreal, used under license. "BMO (M-Bar roundel symbol)" is a registered trademark of Bank of Montreal, used under license.

® Registered trademark of Bank of Montreal in the United States, Canada and elsewhere.

TM Trademark Bank of Montreal

©COPYRIGHT 2023 BMO CAPITAL MARKETS CORP.

A member of **BMO** Financial Group