POWER & ENERGY INFRASTRUCTURE

David Quezada, CFA | 604.659.8257 | david.quezada@raymondjames.ca
Theo Genzebu, (Associate) | 604.659.8522 | theo.genzebu@raymondjames.ca

MAY 26, 2022 | 7:01 AM EDT
INDUSTRY BRIEF

The CO2 Review; Monthly Carbon Tracker

As part of our ongoing monitoring of the voluntary carbon credit industry, we are publishing our inaugural Monthly Carbon Tracker providing a view of market dynamics, price trends for key carbon offset credits and commentary around companies in the sector under our coverage.

Carbon credit pricing in bilateral negotiations is holding firm despite weakness in futures.

- Among widely available prices for voluntary carbon credits, we believe the most closely followed are CBL Exchange's GEO (Global Emissions Offset) and NGEO (Nature-Based Emissions Offset) futures prices. Importantly, however, we stress that due to limited trading volumes, pricing for these futures contracts can be susceptible to speculation and, as a result, diverge materially from price trends in bilateral negotiations which represent the bulk of carbon credit transactions today.
- As detailed in Exhibit 1 and 2 below, pricing for nature-based and household device credits (which call into Category 1 & 2 respectively in Exhibit 1 below) have held up relatively well in recent weeks, as compared to pronounced weakness in the futures contracts. Specifically, we note Category 1 nature based offsets have declined ~13% from late Feb-22 highs while the NGEO futures contract has declined ~33% from its Jan-22 peak (See Exhibit 1 – RHS). Meanwhile, Category 2 credits have remained close to all times highs seen earlier this year, standing in stark contrast to the GEO contract which is down ~47% from its peak (See Exhibit 1 – LHS).
- Analysis from ClearBlue Markets indicates strong demand for forestry-based credits supported Category 1 pricing, which averaged US$13.57/$tCO_2e$ (ranging between $10.12-$22) as of 23-May-22, up modestly from US$13.28/$tCO_2e$ for the prior month as pricing remains well above the NGEO contract at $10.71/$tCO_2e$. We further note that longer-dated NGEO futures have outperformed in recent weeks with the spread between NGEO Dec-22 and Dec-25 futures widening due to an end-buyer preference for the most recent vintage forestry credits.
- ClearBlue's Category 2 credit prices, which include a variety of underlying projects including household devices (cookstove credits), declined on average to $7.27/$tCO_2e$ (range: US$4.12-$12.25) as compared to an average of US$7.76/$tCO_2e$ last month. Notably, the lower average price in this category was due to increased demand (greater volumes) for the lower-end credits within this category, which primarily consist of energy efficiency projects from Asia and Latin America. The GEO futures contract, which is primarily composed of renewable projects, remained below US$5/$tCO_2e$ for most of the week and currently sits at US$4.69/$tCO_2e$.
- Over a longer time period, each class of offset credit has moved significantly higher reflecting a wave of net zero commitments announced in 2020/2021. This has resulted in Category 1-3 prices appreciating ~90-125% as compared to this time last year.

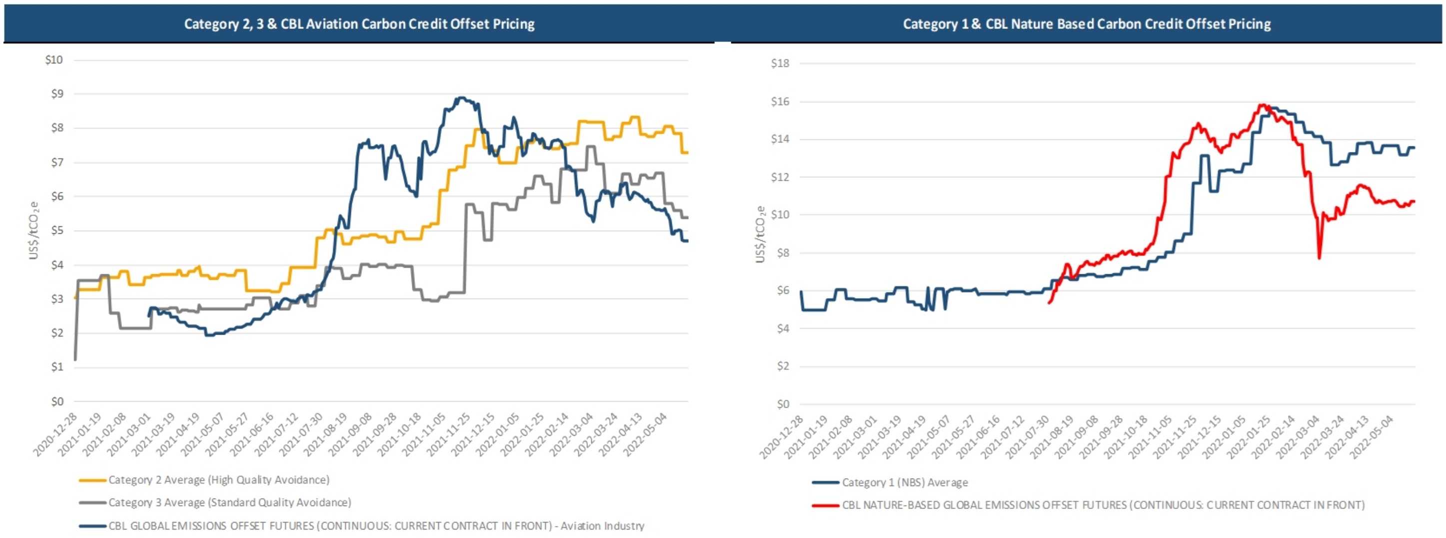
Exhibit 1: Carbon Offset Credit Market Price

Offset Category	Current Price	Prior Week Price	Prior Month Price	3 Month Price	Y/Y Price	7 Day Δ	4 Wk Δ	3 Month Δ	Y/Y Δ
EUA ETS	$77.82	$90.24	$83.79	$94.74	$52.60	↓ -13.8%	↓ -7.1%	↓ -17.9%	↑ 47.9%
CBL California Carbon	$30.54	$29.78	$30.57	$27.22	$19.30	↑ 2.6%	↓ -0.1%	↑ 12.2%	↑ 58.2%
CBL GEO	$4.69	$5.03	$5.68	$6.08	$2.16	↓ -6.8%	↓ -17.4%	↓ -22.9%	↑ 117.1%
CBL NGEO	$10.71	$10.63	$10.80	$12.08	NA	→ 0.8%	↓ -0.8%	↓ -11.3%	NA
Category 1 (NBS)	$13.57	$13.20	$13.28	$14.35	$6.03	↑ 2.8%	↑ 2.2%	↓ -5.4%	↑ 125.2%
Category 2 (High Quality)	$7.27	$7.85	$7.76	$8.20	$3.84	↓ -7.4%	↓ -6.3%	↓ -11.4%	↑ 89.4%
Category 3 (Standard Quality)	$5.39	$5.60	$6.54	$6.76	$2.71	↓ -3.8%	↓ -17.6%	↓ -20.4%	↑ 99.0%

Note: - Price observations from Category 1, 2 and 3 offsets are weekly averages
- Current prices are as at May 23, 2022

Source: ClearBlue Markets, www.tradingview.com, Raymond James Ltd.

Exhibit 2: Voluntary Market Offset Pricing

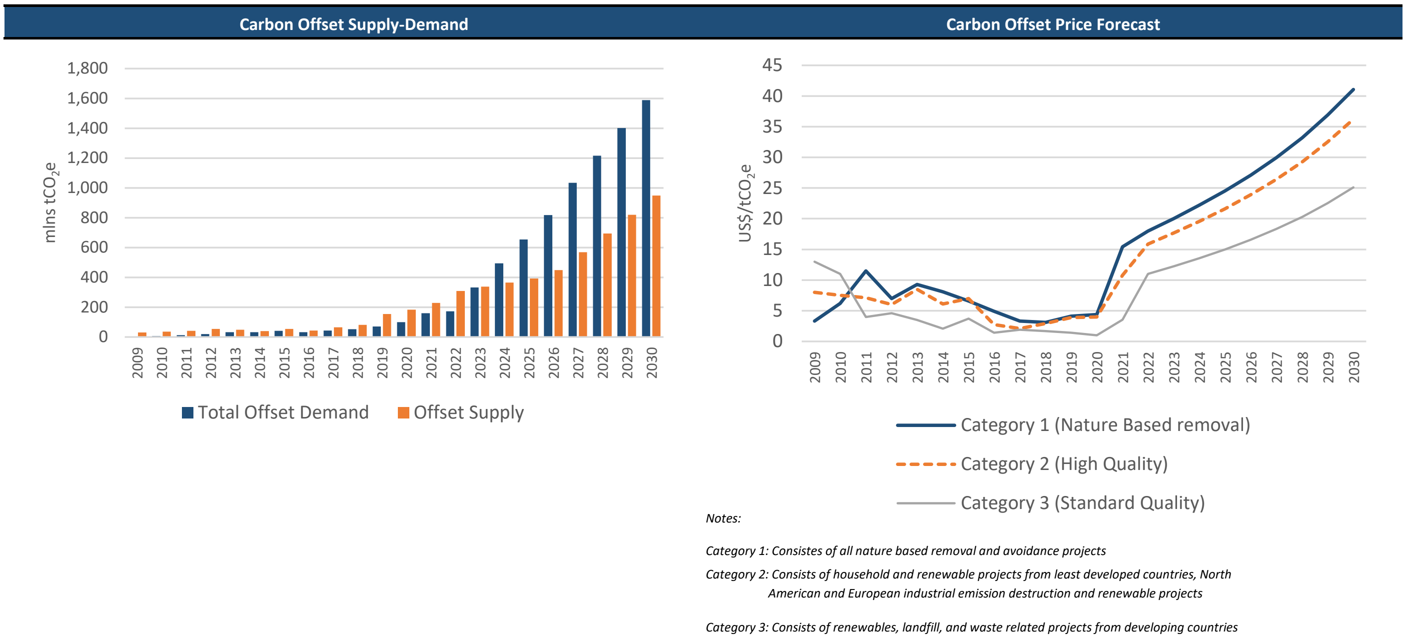


Note: Prices as at May 23, 2022

Source: ClearBlue Markets, www.tradingview.com, Raymond James Ltd.

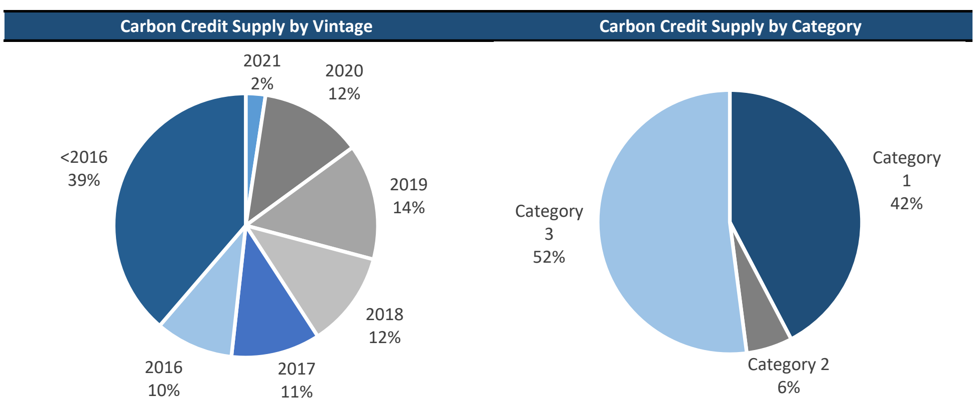
Long Term Outlook: Supply demand model suggests shortage of carbon credits approaching. As illustrated in Exhibit 3 below, analysis from ClearBlue Markets suggests a surplus of credits in 2022—giving way to a balanced market in 2023 and a widening shortage in 2024 and beyond. Beginning with the near-term forecasts, we note that while supply would appear to be outpacing demand for 2022, prices have moved meaningfully higher over the past year and generally held firm in recent weeks. These price trends would appear to be contrary to what we expect in an oversupplied market. In explaining this dynamic, our discussions with industry participants have highlighted that the significant appreciation in carbon credit prices over 2021 brought many dormant, low quality projects from pre-2016 forward, as proponents looked to capitalize on the higher price environment. Importantly, however, we understand these credits have received a lukewarm reception among end buyers—something that has resulted in higher quality, more recent vintage credits showing more stable pricing in recent weeks. We note, referring to Exhibit 4, a significant portion of credits outstanding today, approximately 39%, were issued before 2016 (older vintages typically carry lower prices) while over half of the credits available today fall under Category 3 which represents generally lower quality, lower priced credits. Longer term, we highlight ClearBlue's forecasts suggest a widening supply shortfall beginning in 2024 and expanding out to 2030 with demand approaching 1.6 bln tCO_2e, while supply lags at below 1.0 bln tCO_2e. This widening supply-demand deficit is expected to drive substantially higher carbon offset credit pricing over the coming eight years with Category 1, 2 and 3 prices rising at an average CAGR of ~11%. We note, while we consider this to be an abundantly possible outcome, our estimates assume a more modest 5% annual carbon credit appreciation.

Exhibit 3: Carbon Offset Market Fundamentals and Price Outlook



Source: ClearBlue Markets, Raymond James Ltd.

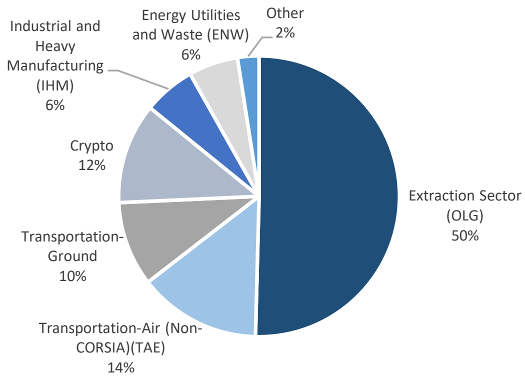
Exhibit 4: Carbon Credit Supply by Vintage and Category



Source: ClearBlue Markets, Raymond James Ltd.

From a high level, we believe weakness in carbon offset futures contracts has been largely driven by fears that Russia's invasion of the Ukraine, and the attendant spike in energy prices, has sparked concerns of a shift in focus from energy transition, to energy independence—something that would presumably reduce the ability and motivation for corporations to purchase carbon offsets. Importantly, however, we note a significant portion of voluntary offset demand comes from the Oil and Gas sector at 50% (see Exhibit 5)—an end market that both needs to decarbonize, and has the means to do so given elevated commodity prices and rising cash flows.

Exhibit 5: Carbon Offset Demand by End Market



Source: ClearBlue Markets, Raymond James Ltd.

Carbon Streaming (NETZ-NEO, Strong Buy, $15.50 Price Target). We maintain our Strong Buy rating on Carbon Streaming—a function of the company's first mover status in the high growth carbon offset industry, $1.0 bln pipeline of investment opportunities, our expectation of rising carbon credit prices, and material upcoming catalysts. While the temporary pause of carbon credits in Indonesia is a source of concern, we believe the share price reaction to this issue, exacerbated by challenging market sentiment, is overdone. Carbon Streaming has recently announced two new streaming investments including a $20 mln investment in a cookstove/water purification project across five countries in Africa, as well as a $1.35 mln investment in a biochar project in the US. Announced last week, the investment in clean cookstoves and water purification in the African countries of Malawi, Mozambique, Tanzania, Uganda, and Zambia, has a 15-year term over which NETZ anticipates 50 mln credits will be generated with the company receiving its typical proportion of project revenues (historically ~10-20%). While the pace of Carbon Streaming's investments has progressed somewhat more slowly than anticipated, we are encouraged by these recent announcements and note NETZ maintains 4+ projects in advanced development (suggesting additional announcements may be imminent) and another $1.0 bln worth of investments in its longer-term pipeline.

Base Carbon (BCBN-NEO, Strong, Buy, $2.00 Price Target). Beyond our expectation of long term appreciation of carbon credits as well as robust industry-wide growth, our Strong Buy rating on Base is underpinned by the company's team of seasoned carbon industry veterans and capital allocators, a significant $400+ mln pipeline of quality, high-return carbon offset investments and a business model that leverages Base's deep relationships across the carbon credit value chain. While volatile market conditions have disproportionately weighed on earlier stage, smaller cap names, we stress that we have not seen any meaningful change or impairment in Base's ability to source and sell carbon credits consistent with the strategy outlined at the time of the company's IPO. As discussed earlier in this note, voluntary carbon offset pricing in bilateral negotiations has held relatively firm when compared to benchmark futures contracts. At the same time, we believe challenging market sentiment has sent shares of BCBN into no-brainer territory. In fact, we highlight that as of yesterday's close, BCBN's market cap of ~C$65 mln is only modestly more than the company's balance of cash and prepaid expenses which currently sits at C$56.5 mln (US$43.8 mln). Viewed another way, this implies an EV of just $8.5 mln which we believe is less than the NAV associated with the US$3.45 mln the company has deployed in its Rwanda cookstove carbon offset project to date. Accordingly, we consider current levels to represent exceptional value and reaffirm our Strong Buy rating.

Appendix I: Recent Industry Developments and Research

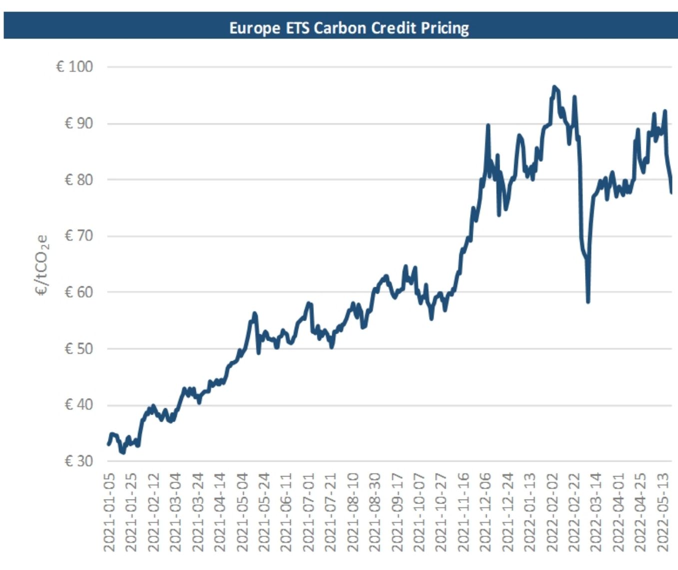
Recent Industry Developments

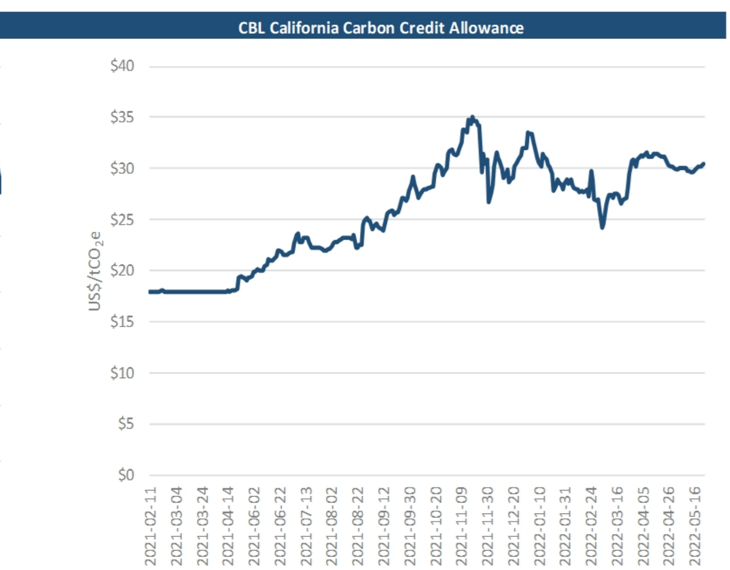
- A Startup Backed by Adam Neumann Wants to Put Carbon Credits on the Blockchain Link
- Berlin Pushes for a €60 Minimum Price on EU Carbon Markets Link
- New Restrictions Could Cut Carbon Offsets from Major Rainforests Link
- What Pachama's Latest Funding Says About Carbon Offset Verification Link
- Brazil to Quicken Carbon Market Launch by Decree Link
- EU Carbon Market Must Lead to Faster Emissions Cuts to Tackle Climate Crisis, New Research Shows Link
- ICE Launches New Nature-Based Solutions Futures Contract, Rivals CME Link

Recent Company Notes & Industry Research

- May-17-22: NETZ | 3Q22 Results Not Material; Pace of Investments Picking Up
- May-17-22: BCBN | 1Q22 A Non-Event; Valuation in No-Brainer Territory
- Apr-28-22: Diversified & Utilities | 1Q22 Preview; Highlighting Top Picks Amidst Market Volatility
- Apr-05-22: BCBN | Pedigree, Pipeline, and Purpose; A Top Carbon Player Emerges
- Jan-24-22: NETZ | This Carbon Stream Could Turn Into a Rushing River

Appendix II: European ETS and CBL California Carbon Credit Spot Prices





Note: Prices as at May 23, 2022

Source: www.tradingview.com, Raymond James Ltd.

Company Citations

Company Name	Ticker	Exchange	Closing Price	RJ Rating	RJ Entity
Base Carbon Inc.	BCBN.GD	NEO	C$0.51	SB1	Raymond James Ltd.
Carbon Streaming Corporation	NETZ.GD	NEO	$3.86	SB1	Raymond James Ltd.

Prices are as of the most recent close on the indicated exchange. See Disclosure section for rating definitions. Stocks that do not trade on a U.S. national exchange may not be registered for sale in all U.S. states. NC=not covered.

IMPORTANT INVESTOR DISCLOSURES

Unless otherwise specified, the term “Raymond James” shall denote, where appropriate, Raymond James & Associates, Inc. (RJA), Raymond James Ltd. (RJL), and their affiliates, subsidiaries and related entities.

Analyst Information

Analyst Compensation: Research analysts and associates at Raymond James are compensated on a salary and bonus system. Several factors enter into the compensation determination for an analyst, including: i) research quality and overall productivity, including success in rating stocks on an absolute basis and relative to the local exchange composite index and/or sector index; ii) recognition from institutional investors; iii) support effectiveness to the institutional and retail sales forces and traders; iv) commissions generated in stocks under coverage that are attributable to the analyst's efforts; v) net revenues of the overall Equity Capital Markets Group; and vi) comparable compensation levels for research analysts at competing peer firms.

Registration of Non-U.S. Analysts: The analysts listed on the front of this report who are not employees of, or associated with, RJA are not registered/qualified as research analysts under FINRA rules and are not subject to FINRA Rule 2241 restrictions on communications with covered companies, trading securities held by a research analyst account, and obligations related to identifying and managing conflicts of interest.

This global disclosure considers all entities of Raymond James and its affiliates. The jurisdiction where the analyst(s) is registered will determine what is permitted. For example, if the persons responsible for the content of this report are not licensed as research analysts in accordance with applicable rules promulgated by the regulatory organization(s) where this report is distributed, any client wishing to effect trades in any security should contact their Raymond James representative.

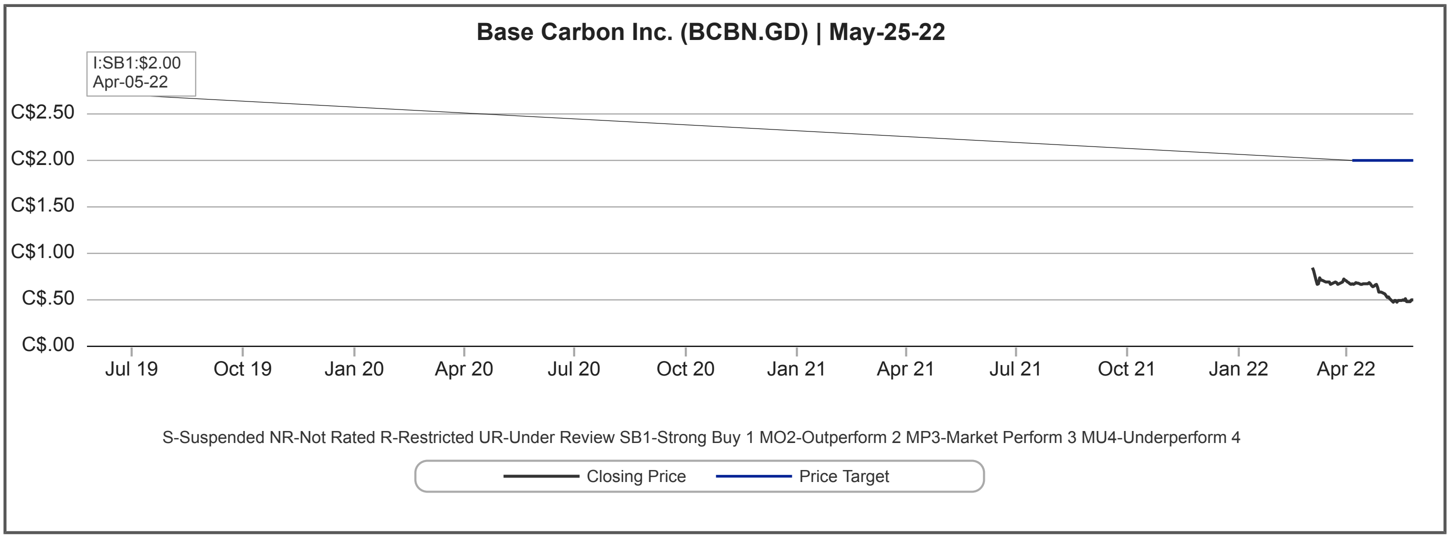
The analyst David Quezada, primarily responsible for the preparation of this research report, attests to the following: (1) that the views and opinions rendered in this research report reflect his or her personal views about the subject companies or issuers and (2) that no part of the research analyst’s compensation was, is, or will be directly or indirectly related to the specific recommendations or views in this research report.

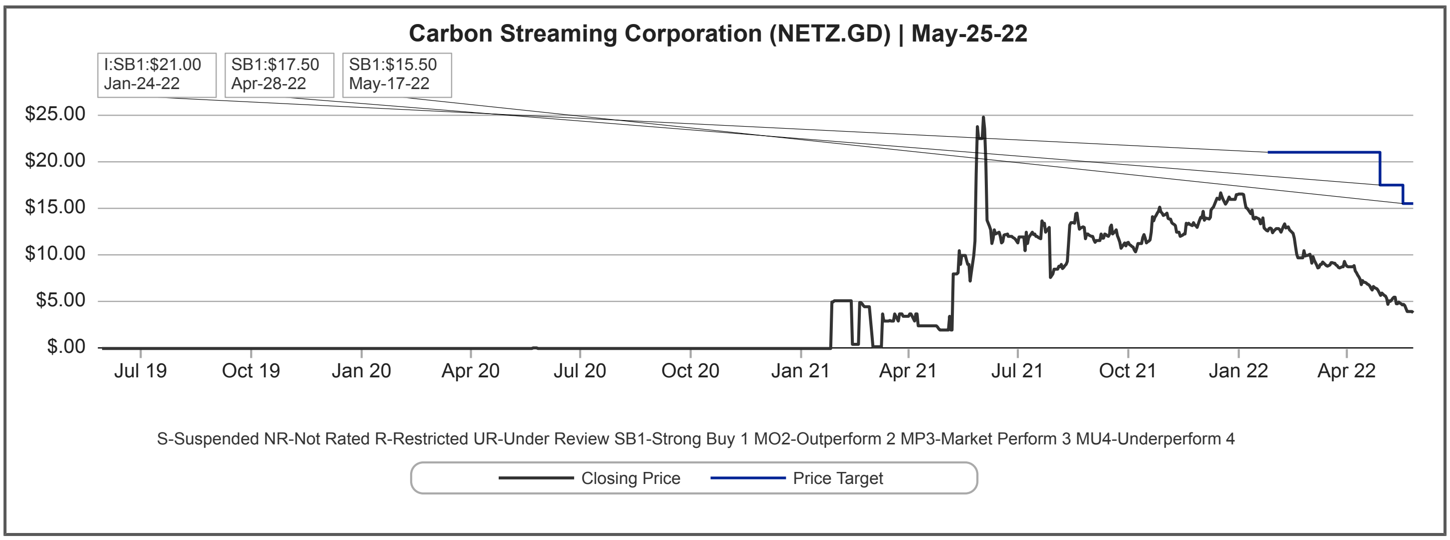
David Quezada of Raymond James Ltd. is a non-US Analyst

Company Specific Disclosures

Methodology: The Raymond James methodology for assigning ratings and target prices includes a number of qualitative and quantitative factors, including an assessment of industry size, structure, business trends, and overall attractiveness; management effectiveness; competition; visibility; financial condition; and expected total return, among other factors. Collectively, these factors are subject to change depending on overall economic conditions or industry- or company-specific occurrences.

Target Prices: The information below indicates Raymond James’ target price and rating changes for any subject companies over the past three years.





Valuation Methodology

Base Carbon Inc.
We value Base Carbon Inc. using a discounted cash flow analysis over a 30-year time horizon.

Carbon Streaming Corporation
We value Carbon Streaming Corp. using a discounted cash flow analysis over a 30 year time horizon.

General Risk Factors

Following are some general risk factors that pertain to the businesses of the subject companies and the projected target prices and recommendations included on Raymond James research: (1) Industry fundamentals with respect to customer demand or product/service pricing could change and adversely impact expected revenues and earnings; (2) issues relating to major competitors or market shares or new product expectations could change investor attitude toward the sector or this stock; (3) Unforeseen developments with respect to the management, financial condition or accounting policies or practices could alter the prospective valuation.

Company Specific Risk Factors

Base Carbon Inc.

- Fluctuating demand for carbon credits–-demand for carbon credits is vulnerable to any number of factors including the implementation of lower emission infrastructure, a general increase in the number of credits available through a higher volume of projects generating offsets, new inventions, or an increase in alternative fuels. Demand depends on social and political will to reduce GHG emissions globally. There is no assurance that carbon pricing initiatives or compliance or voluntary carbon markets will continue to exist.

- Carbon credit price fluctuations–-the market price for credits is subject to general market trends. Factors such as regulatory changes and general economic, political or regulatory conditions will affect the pricing of carbon credits. The nature of compliance and voluntary markets trading causes the price of carbon credits to vary not only by market conditions, but also its location, vintage, accreditation and additional ESG attributes.
- Demand for carbon credits are dependent on climate change initiatives–-government policies around climate change will drive carbon credit supply and demand. Changes in policies could be diminished, terminated, or may not be renewed upon their expiration.
- Carbon credit validation, registration, verification and cancellation risks—the company's goal is to acquire and invest in projects that generate carbon credits that are validated through a compliance or carbon credits standards body in the voluntary carbon market. Any changes to these international carbon standards or verification requirements can cause adverse effects to the price of the carbon credits generated by the projects acquired by the company, which will directly affect its profitability.
- Market volatility and liquidity–-carbon markets (notably in voluntary markets) are evolving, meaning that there are no assurances that credits purchased by the company or generated by the company will find a market. This ambiguity implies that the company may not be able to purchase/sell the volume of credits in a timely manner or at favorable prices.
- Joint ventures and partnerships—further to the Base Carbon Capital Partners Corp. joint venture between Base Carbon and HCBL, Base Carbon may enter into partnerships with other parties in order to benefit its business operations. The split ownership nature of such partnerships may require unanimous approval from all parties and allow for veto rights which can cause certain fundamental decisions to come to a standstill, abating certain investments or ventures.
- Acquisition related risks–-Base Carbon's growth as a company revolves around management's ability to identify new M&A opportunities in order to grow their portfolio while at the same time maintaining effective cost control. In deal making, the company could fail to identify or select appropriate investment targets, or negotiate acceptable arrangements.
- Increased Competition in voluntary markets is expected–-there are many organizations and governments that are participating in buying and selling carbon credits. Base Carbon may be at a competitive disadvantage as many of these entities are much larger and more established.
- New technological advances may arise reducing need for carbon credit markets—carbon credit prices are determined by the cost of reducing emissions levels. It can be more economical for companies to develop or invest in lower emission technologies if carbon credit prices become too high. As such, some companies in the voluntary market may not rely on or find a need for carbon offsets.
- Foreign operations and political risk—Base Carbon may invest in countries and regions of the world that have historically been susceptible to adverse market, political, regulatory, and geographical events. A significant portion of the company's short and medium-term opportunities are located outside of North America, creating a possibility of unfavorable political and foreign regulatory risks.
- Funding needs–-as a company in the early stages of growth, Base Carbon will likely look to fund growth issuing equity to raise capital for projects, or other growth related activities. Share dilution is expected.
- Natural Disasters—many of the projects the company invests in are subject to natural disasters that could cause temporary or irreparable damage to the projects reducing/ending their ability to reduce GHG, and thus, produce carbon credits.

Carbon Streaming Corporation

- **New technological advances may arise reducing need for carbon credit markets –** carbon credit prices are determined by the cost of reducing emissions levels. It can be more economical for companies to develop or invest in lower emission technologies if carbon credit prices become too high. As such, some companies in the voluntary market may not rely on or find a need for carbon offsets.
- **Fluctuating demand for carbon credits –** demand for carbon credits is vulnerable to any number of factors including the implementation of lower emission infrastructure, a general increase in the number of credits available through a higher volume of projects generating offsets, new inventions, or an increase in alternative fuels. Demand depends on social and political will to reduce GHG emissions globally.
- **Demand for carbon credits are dependent on climate change initiatives –** government policies around climate change will drive carbon credit supply and demand. Changes in policies could be diminished, terminated, or may not be renewed upon their expiration.

- **Carbon credit price fluctuations –** the market price for credits is subject to general market trends. Factors such as regulatory changes and general economic, political or regulatory conditions will affect the pricing of carbon credits. The nature of compliance and voluntary markets trading causes the price of carbon credits to vary not only by market conditions, but also its location, vintage, accreditation and additional ESG attributes.
- **Market volatility and liquidity –** carbon markets (notably in voluntary markets) are evolving, meaning that there are no assurances that credits purchased by the company or generated by the company will find a market. This ambiguity implies that the company may not be able to purchase/sell the volume of credits in a timely manner or at favorable price.
- **Foreign operations and political risk –** Carbon Streaming is investing in countries and regions of the world that have historically been susceptible to adverse market, political, regulatory, and geographical events. Most of the company's short and medium-term opportunities are located outside of North America, creating a possibility of unfavorable political and foreign regulatory risks.
- **Increased Competition in voluntary markets is expected** – there are many organizations and governments that are participating in buying and selling carbon credits. Carbon Streaming may be at a competitive disadvantage as many of these entities are much larger and more established.
- **Dependency on key management and network –** Carbon Streaming relies on its ability to retain and attract management who have experience in streaming, financing and other corporate finance and M&A related activities. Carbon Streaming's success in acquiring new projects depends on management's ability to leverage their network and experience in the royalty and streaming industry. Losing key management could negatively affect business operations.
- **Acquisition related risks –** Carbon Streaming's growth as a company revolves around management's ability to identify new M&A opportunities in order to grow their portfolio while at the same time maintaining effective cost control. In deal making, the company could fail to identify or select appropriate investment targets, or negotiate acceptable arrangements.
- **Third party risk through dependency on project developer, operator or owner –** carbon credits are received from projects which are owned, operated and/or developed by third parties. Project operators/developers are ultimately in control of determining the manner in which the properties are developed, operated and managed. This includes decisions that could reduce or increase the number of credits available from a given asset. Further, Carbon Streaming relies on the ability of third party entities to comply with government and regulatory rules. The failure to do so by third parties could adversely affect Carbon Streaming's operations.
- **Funding needs –** as a company in the early stages of growth, Carbon Streaming will likely look to fund growth issuing equity to raise capital for projects, or other growth related activities.

Relationship Disclosures

Certain affiliates of Raymond James expect to receive or intend to seek compensation for investment banking services from all companies under research coverage within the next three months. The person(s) responsible for the production of this report declare(s) that, as far as they are aware, there are no relationships or circumstances (including conflicts of interest) that may in any way impair the objectivity of this recommendation directly or indirectly. This statement applies equally to any persons closely associated with him or her. However, it is possible that persons making communications in relation to a security may have a holding in that security and this will be disclosed. As stated, Raymond James has controls in place to manage such risks.

In the event that this is a compendium report (i.e., covers six or more subject companies), Raymond James may choose to provide specific disclosures for the subject companies by reference. To access these disclosures, clients should refer to: raymondjames.bluematrix.com/sellside/Disclosures.action or call toll free at 1.800.237.5643 in the United States or 1.800.667.2899 in Canada. In other jurisdictions, please contact your local Raymond James' representative.

Company Name	Disclosure
Base Carbon Inc.	Raymond James Ltd. has managed or co-managed a public offering of securities within the last 12 months with respect to the issuer.
Base Carbon Inc.	Raymond James Ltd. has provided investment banking services within the last 12 months with respect to the issuer.
Base Carbon Inc.	Raymond James Ltd. has received compensation for investment banking services within the past 12 months with respect to the issuer.

Investor Disclosures

In the United States (or U.S.), RJA is registered with the Financial Industry Regulatory Authority (FINRA) as a member firm. RJA is responsible for the preparation and distribution of reports created in the United States. RJA is located at The Raymond James Financial Center, 880 Carillon Parkway, St. Petersburg, Florida 33716 (Raymond James Financial (RJF) Corporate Headquarters), 727.567.1000. Raymond James Financial Services, Inc. (RJFS) is registered with FINRA as a Member Firm. RJFS is located at the RJF Corporate Headquarters.

RJA non-U.S. affiliates, which are not FINRA member firms (with the exception of Raymond James (USA) Ltd.), include the following entities, which are responsible for the creation or distribution of reports in their respective areas:

In Canada, RJL is registered with the Investment Industry Regulatory Organization of Canada (IIROC) as a member firm. RJL is responsible for the preparation and distribution of reports created in Canada. RJL is located at Suite 2100, 925 West Georgia Street, Vancouver, BC V6C 3L2 (RJL Head Office), 604.659.8200. Raymond James (USA) Ltd. (RJLU) is registered with FINRA as a member firm, which is responsible for the distribution of reports created in Canada and the United States to both American clients living in Canada and Canadian clients living in the United States. RJLU is located at the RJL Head Office.

In the United Kingdom, Raymond James Financial International Ltd. (RJFI) and Raymond James Investment Services, Ltd. (RJIS) are authorised and regulated by the Financial Conduct Authority (FCA). RJFI and RJIS are located at Ropemaker Place, 25 Ropemaker Street, London, England, EC2Y 9LY, +44 203 798 5600.

This report is not directed to, or intended for distribution to or use by, any person or entity that is a citizen or resident of or located in a locality, state, province, country, or other jurisdiction where such distribution, publication, availability, or use would be strictly prohibited or contrary to law or regulation. The securities discussed in this report may not be eligible for sale in some jurisdictions. This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It is not investment advice and does not constitute a personal recommendation, nor does it take into account the particular investment objectives, financial situations, or needs of individual clients. Information in this report should not be construed as advice designed to meet the individual objectives of any particular investor. Investors should consider this report as only a single factor in making their investment decision. Some investments discussed in this report may have a high level of volatility. High volatility investments may experience sudden and large falls in their value causing losses when that investment is realized. Those losses may equal your original investment. Consultation with your Raymond James representative is recommended. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Nothing in this report constitutes investment, legal, accounting or tax advice or is a representation that any investment or strategy is suitable or appropriate to your individual circumstances or otherwise constitutes a personal recommendation to you.

The information provided is as of the date above and is subject to change and may or may not be updated. This report should not be deemed a recommendation to buy or sell any security. Certain information has been obtained from third-party sources Raymond James considers reliable, but Raymond James does not guarantee that such information is accurate or complete. Persons within Raymond James may have information that is not available to the contributors of the information contained in this report. Raymond James, including affiliates and employees, may execute transactions in the securities listed in this report that may not be consistent with the ratings appearing in this report.

With respect to materials prepared by Raymond James, all expressions of opinion reflect the judgment of the Research Departments of Raymond James, or its affiliates, as of the date above and are subject to change. Raymond James may perform investment banking or other services for, or solicit investment banking business from, any company mentioned in this report.

Raymond James reports are disseminated and available to Raymond James clients simultaneously via electronic publication to Raymond James' internal proprietary websites (RJA: RJ Client Access & raymondjames.com; RJL: RJL ECM Client Access, RJL Retail Client Access & raymondjames.ca). Not all reports are directly distributed to clients or third-party aggregators. Certain reports may only be disseminated on Raymond James' internal proprietary websites; however, such reports will not contain estimates or changes to earnings forecasts, target price, valuation, or investment or suitability rating. Individual Raymond James associates may also opt to circulate published reports to one or more clients electronically. This electronic communication distribution is discretionary and is done only after the report has been publically disseminated via RJ's internal proprietary websites. The level and types of communications provided by Raymond James associates to clients may vary depending on various factors including, but not limited to, the client's individual preference as to the frequency and manner of receiving communications. For reports, models, or other data available on a particular security, please contact your Raymond James representative or financial advisor or visit for RJA: RJ Client Access & raymondjames.com; RJL: RJL ECM Client Access, RJL Retail Client Access & raymondjames.ca.

Raymond James' policy is to update reports as it deems appropriate, based on developments with the subject company, the sector or the market that may have a material impact on the research views or opinions stated in a report. Raymond James' policy is only to publish reports that are impartial, independent, clear, and fair and not misleading. Any information relating to the tax status of the securities discussed in this report is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

Links to third-party websites are being provided for information purposes only. Raymond James is not affiliated with and does not endorse, authorize, or sponsor any of the listed websites or their respective sponsors. Raymond James is not responsible for the content of any third-party website or the collection or use of information regarding any website's users and/or members. Raymond James has not reviewed any such third-party websites and takes no responsibility for the content contained therein. Such address or hyperlink (including addresses or hyperlinks to Raymond James' own website material) is provided solely for your convenience and information, and the content of any such website does not in any way form part of this report. Accessing such website or following such link through this report or Raymond James' website shall be at your own risk. Additional information is available on request.

Notice to RJA PCG Financial Advisors - Non-U.S. securities discussed in this report are generally not eligible for sale in the U.S. unless they are listed on a U.S. securities exchange. This report may not be used to solicit the purchase or sale of a security in any state where such a solicitation would be illegal. By accessing this report, you agree to not solicit the purchase or sale of any security mentioned in the report that is not listed on a U.S. securities exchange, or is not otherwise registered under applicable state Blue Sky laws. Furthermore, you acknowledge that you will be solely responsible for any and all costs associated with the rescission of trades in unregistered securities. Please contact the International Research Liaison with any questions at 727.567.5559.

Ratings and Definitions

RJA (U.S.) Definitions: Strong Buy (SB1) The security is expected to appreciate, produce a total return of at least 15%, and outperform the S&P 500 over the next six to 12 months. For higher yielding and more conservative equities, such as REITs and certain MLPs, a total return of at least 15% is expected to be realized over the next 12 months. **Outperform (MO2)** The security is expected to appreciate or outperform the S&P 500 over the next 12-18 months. For higher yielding and more conservative equities, such as REITs and certain MLPs, an Outperform rating is used for securities where Raymond James is comfortable with the relative safety of the dividend and expects a total return modestly exceeding the dividend yield over the next 12-18 months. **Market Perform (MP3)** The security is expected to perform generally in line with the S&P 500 over the next 12 months and could potentially be used as a source of funds for more highly rated securities. **Underperform (MU4)** The security is expected to underperform the S&P 500 or its sector over the next six to 12 months and should be sold. **Suspended (S)** The security's rating and price target have been suspended temporarily. This action may be due to market events that made coverage impracticable or to comply with applicable regulations or firm policies in certain circumstances. When a security's research coverage has been suspended, the previous rating and price target are no longer in effect for this security, and they should not be relied upon.

RJL (Canada) Definitions: Strong Buy (SB1) The security is expected to appreciate and produce a total return of at least 15% and outperform the S&P/TSX Composite Index over the next six to 12 months. **Outperform (MO2)** The security is expected to appreciate and outperform the S&P/TSX Composite Index over the next 12-18 months. **Market Perform (MP3)** The security is expected to perform generally in line with the S&P/TSX composite Index over the next 12 months and could potentially be used as a source of funds for more highly rated securities. **Underperform (MU4)** The security is expected to underperform the S&P/TSX Composite Index or its sector over the next six to 12 months and should be sold. **Suspended (S)** The security's rating and price target have been suspended temporarily. This action may be due to market events that made coverage impracticable or to comply with applicable regulations or firm policies in certain circumstances or may otherwise have a perceived conflict of interest. When a security's research coverage has been suspended, the previous rating and price target are no longer in effect for this security, and they should not be relied upon.

	Coverage Universe Rating Distribution*				Investment Banking Relationships			
	RJA		RJL		RJA		RJL	
Strong Buy and Outperform (Buy)	586	62%	204	80%	149	25%	52	25%
Market Perform (Hold)	333	36%	47	18%	38	11%	4	9%
Underperform (Sell)	19	2%	3	1%	3	16%	0	0%
Total Number of Companies	938	100%	254	100%	190		56	

** Columns may not add to 100% due to rounding.*

** Total does not include companies with a suspended rating.*

RJA Suitability Ratings (SR)

Moderate Risk/Provide Income (M/INC) Larger capitalization, lower volatility (beta) equities of companies with sound financials, consistent earnings, and dividend yields meaningfully above that of the S&P 500. Many securities in this category are structured with a focus on providing a consistent dividend or return of capital. **Moderate Risk/Wealth Accumulation (M/ACC)** Larger capitalization equities of companies with sound financials, consistent earnings growth, the potential for long-term price appreciation, and often a dividend yield. **Moderately Aggressive Risk/Provide Income (MA/INC)** Generally equities of companies that are structured with a focus on providing a dividend meaningfully above that of the S&P 500. These companies typically feature sound financials, positive earnings, and the potential for long-term price appreciation. **Moderately Aggressive Risk/Wealth Accumulation (MA/ACC)** Generally equities of companies in fast growing and competitive industries with less predictable earnings (or losses), potentially more leveraged balance sheets, rapidly changing market dynamics, and potential risk of principal. **Aggressive Risk/Provide Income (A/INC)** Generally equities of companies that are structured with a focus on providing a meaningful dividend but may face less predictable earnings (or losses), more leveraged balance sheets, rapidly changing market dynamics, financial and competitive issues, higher price volatility (beta), and meaningful risk of loss of principal. Securities of companies in this category may have a more volatile income stream from dividends or distributions of capital. **Aggressive Risk/Wealth Accumulation (A/ACC)** Generally equities of companies with a short or unprofitable operating history, limited or less predictable revenues, high risk associated with success, high volatility (beta), potential significant financial or legal issues, and the meaningful risk of loss of principal.

RJL Suitability Ratings

RJL has developed a proprietary algorithm for risk rating individual securities. The algorithm utilizes data from multiple vendors, and all data is refreshed at least monthly. Accordingly, suitability ratings are updated monthly. The suitability rating shown on this report is current as of the report's published date. In the event that a suitability rating changes after the published date, the new rating will not be reflected until the analyst publishes a subsequent report.

International Disclosures

For clients of RJA: Any foreign securities discussed in this report are generally not eligible for sale in the United States unless they are listed on a U.S. exchange. This report is being provided to you for informational purposes only and does not represent a solicitation for the purchase or sale of a security in any state where such a solicitation would be illegal. Investing in securities of issuers organized outside of the United States, including ADRs, may entail certain risks.

The securities of non-U.S. issuers may not be registered with, nor be subject to, the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on such securities. Investors who have received this report may be prohibited in certain states or other jurisdictions from purchasing the securities mentioned in this report. Please ask your RJA financial advisor for additional details and to determine if a particular security is eligible for purchase in your state or jurisdiction.

For clients of RJFS: This report was prepared and published by Raymond James and is being provided to you by RJFS solely for informative purposes. Any person receiving this report from RJFS should direct all questions and requests for additional information to their RJFS financial advisor.

For RJA and RJFS clients in Canada: In the Canadian provinces of Alberta, British Columbia, New Brunswick, Ontario and Quebec (collectively, the "Canadian Jurisdictions"), both RJA and RJFS are relying on the international dealer exemption (the "IDE"), and RJA is also relying on the international adviser exemption (the "IAE"), pursuant to sections 8.18 and 8.26 of National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations ("NI 31-103"). RJA and RJFS are not registered to make a trade nor is RJA registered to provide advice in the Canadian Jurisdictions. Neither RJA nor RJFS are members of the Investment Industry Regulatory Organization of Canada.

This report is intended solely for residents of the Canadian Jurisdictions who are permitted clients as set forth in NI 31-103. Neither RJA, RJFS nor their representatives are making an offer to sell or soliciting an offer to buy any security issued by an issuer incorporated, formed or created under the laws of Canada ("Canadian issuers") and discussed in this report. Any trades by permitted clients in any securities of Canadian issuers (whether listed on a U.S., Canadian or other exchange) discussed in this report may not be made through a relationship with RJA or RJFS and shall be directed to RJL for execution. Relationships with clients residing in Canadian Jurisdictions for trading in securities of Canadian issuers must be established through a Canadian registered firm, such as RJL. For additional information regarding establishing a relationship with RJL, Canadian clients should contact 1-888-545-6624.

For clients of RJL: In the case where there is Canadian analyst contribution, the report meets all applicable IIROC disclosure requirements. RJL is a member of the Canadian Investor Protection Fund.

For clients of RJFI: This report is prepared for and distributed by RJFI, and any investment to which this report relates is intended for the sole use of the persons to whom it is addressed, being persons who are Eligible Counterparties or Professional Clients as described in the FCA rules or persons described in Articles 19(5) (Investment professionals) or 49(2) (High net worth companies, unincorporated associations, etc.) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended) or any other person to whom this promotion may lawfully be directed. It is not intended to be distributed or passed on, directly or indirectly, to any other class of persons and may not be relied upon by such persons and is, therefore, not intended for private individuals or those who would be classified as retail clients.

For clients of RJIS: This report is prepared for and distributed by RJIS, and is for the use of professional investment advisers and managers and is not intended for use by retail clients.

For purposes of the FCA requirements, this report is classified as independent with respect to conflict of interest management. RJFI and RJIS are authorised and regulated by the FCA.

For clients of Raymond James Euro Equities (RJEE): RJEE is authorised and regulated by the Autorite de Controle Prudentiel et de Resolution and the Autorite des Marches Financiers. As of 30 November, 2020, RJEE is an unaffiliated entity of Raymond James. RJEE is located at SAS, 45 Avenue George V, 75008, Paris, France, +33 1 45 61 64 90. This report is prepared for and distributed by RJEE pursuant to an agreement with Raymond James, and any investment to which this report relates is intended for the sole use of the persons to whom it is addressed, being persons who are Eligible Counterparties or Professional Clients as described in "Code Monetaire et Financier" and Reglement General de l'Autorite des Marches Financiers. It is not intended to be distributed or passed on, directly or indirectly, to any other class of persons and may not be relied upon by such persons and is, therefore, not intended for private individuals or those who would be classified as retail clients.

For recipients in Brazil: This is a strictly privileged and confidential communication between Raymond James & Associates and its selected clients. This communication contains information addressed only to specific individuals in Brazil and is not intended for distribution to, or use by, any person other than the named addressee. This communication (i) is provided for informational purposes only, (ii) should not be construed in any manner as any solicitation or offer to buy or sell any investment opportunities or any related financial instruments, and (iii) should not be construed in any manner as a public offer of any investment opportunities or any related financial instruments. If you are not the named addressee, you should not disseminate, distribute, or copy this communication. Please notify the sender immediately if you have mistakenly received this communication.

The investments analyzed in this report may not be offered or sold to the public in Brazil. Accordingly, the investments in this report have not been and will not be registered with the Brazilian Securities and Exchange Commission (Comissão de Valores Mobiliários, the “CVM”), nor have they been submitted to the foregoing agency for approval. Documents relating to the investments in this report, as well as the information contained therein, may not be: (i) supplied to the public in Brazil, as the offering of investment products is not a public offering of securities in Brazil; nor (ii) used in connection with any offer for subscription or sale of securities to the public in Brazil.

For clients in Australia: Despite anything in this report to the contrary, this report is prepared for and distributed in Australia by RJFI with the assistance of RJA, and RJA at times will act on behalf of RJFI. This report is only available in Australia to persons who are “wholesale clients” (within the meaning of the Corporations Act 2001 (Cth)) and is supplied solely for the use of such wholesale clients and shall not be distributed or passed on to any other person. You represent and warrant that if you are in Australia, you are a “wholesale client”. This research is of a general nature only and has been prepared without taking into account the objectives, financial situation, or needs of the individual recipient. RJFI and RJA do not hold an Australian financial services license. RJFI is exempt from the requirement to hold an Australian financial services license under the Corporations Act 2001 (Cth) in respect of financial services provided to Australian wholesale clients under the exemption in ASIC Class Order 03/1099 (as continued by ASIC Corporations (Repeal and Transitional) Instrument 2016/396). RJFI is regulated by the UK FCA under UK laws, which differ from Australian laws. RJA is acting on behalf of RJFI with respect to distribution and communications related to this report.

For clients in New Zealand: In New Zealand, this report is prepared for and may only be distributed by RJFI to persons who are wholesale clients pursuant to Section 5C of the New Zealand Financial Advisers Act 2008.

For recipients in Taiwan: This report is being distributed to you from outside of Taiwan, and such distribution has not been licensed or approved by the regulators of Taiwan. No person to whom a copy of this report is provided may issue, circulate or distribute this report in Taiwan, or make, give or show a copy of this report to any other person.

Proprietary Rights Notice