

# Task Force on Climate-related Financial Disclosures Report



**BEUTEL GOODMAN**  
Investment Counsel

## TABLE OF CONTENTS

<b>INTRODUCTION</b>	<b>3</b>
<hr/>	
<b>GOVERNANCE</b>	<b>6</b>
<hr/>	
<b>STRATEGY</b>	<b>9</b>
Physical Risk	10
Transition Risk	12
Internal Alignment	13
Investment Process	14
Active Ownership - Engagement	14
Active Ownership - Proxy Voting	15
Active Ownership - Collaboration	15
Climate Change and Engagement	16
Made in Canada Transition	20
Investment Solutions	22
Climate Scenario Analysis	23
<hr/>	
<b>RISK MANAGEMENT</b>	<b>25</b>
<hr/>	
<b>METRICS AND TARGETS</b>	<b>31</b>
Metrics	32
Targets	37
<hr/>	
<b>END NOTES</b>	<b>38</b>



## INTRODUCTION

We are pleased to provide our inaugural Task Force on Climate-related Financial Disclosures (TCFD) report.

Climate change is emerging as one of the most critical ESG factors globally and across all sectors of the economy. Recent catastrophic events, including wildfires, floods and hurricanes, bring the urgency to address the issue to the forefront. The UN Environment Programme's *Emissions Gap Report 2022* highlights that with the current global policies in place and no additional action, the result will be global warming of 2.8°C over the 21st century. Implementation of unconditional and conditional NDC<sup>i</sup> scenarios reduce this to 2.6°C and 2.4°C, respectively.<sup>ii</sup> This is below the Paris Agreement's goals, the climate treaty that aims to limit global warming to well below 2°C, preferably 1.5°C compared to pre-industrial levels. Significant reductions in greenhouse gas emissions will likely be required to prevent the catastrophic impacts from climate change. The energy transition will also likely materially change the way we live and consume energy.

In this context, and in our role as an investment manager, we recognize the importance of achieving the goals of the Paris Agreement. The scientific consensus is that achieving these goals by the end of the century requires the global economy to effectively become carbon neutral<sup>iii</sup> by 2050. In 2021, Beutel Goodman (BG) officially declared its support for the TCFD, joining more than 2,500 organizations in demonstrating a commitment to building a more resilient financial system and safeguarding against climate risk through better disclosures. One of the key challenges in analyzing climate risks and opportunities has been the lack of depth and consistency of data and in some cases any disclosure whatsoever on corporations' climate activities. We are proud to support the TCFD and look forward to progressing our climate-related activities as an investment manager in this context.

The value of companies we invest in may be impacted by climate change over the long term; for example, by direct or indirect exposure to physical risks from severe weather and changing weather patterns. Companies also face transition risks relating to their carbon footprints, including policy, legal, technology, market and reputation risk. We believe that addressing climate-related risk in our investment process is consistent with our fiduciary duty to our clients and seeking to achieve our primary objective of delivering superior risk-adjusted financial portfolio performance to our clients over the long term.



The TCFD identified four key disclosure recommendations focused on the resiliency of a company's climate strategy using climate scenario analysis to identify potential risks, opportunities and financial impacts related to climate change. These key disclosure items focus on **Governance, Strategy, Risk Management** and **Metrics & Targets**. With increased transparency, **financial impacts** will be better understood to help inform decision-making. Beutel Goodman will take a phased approach to TCFD reporting, with the intent of gradually improving and enhancing our future reporting within each recommended core element.

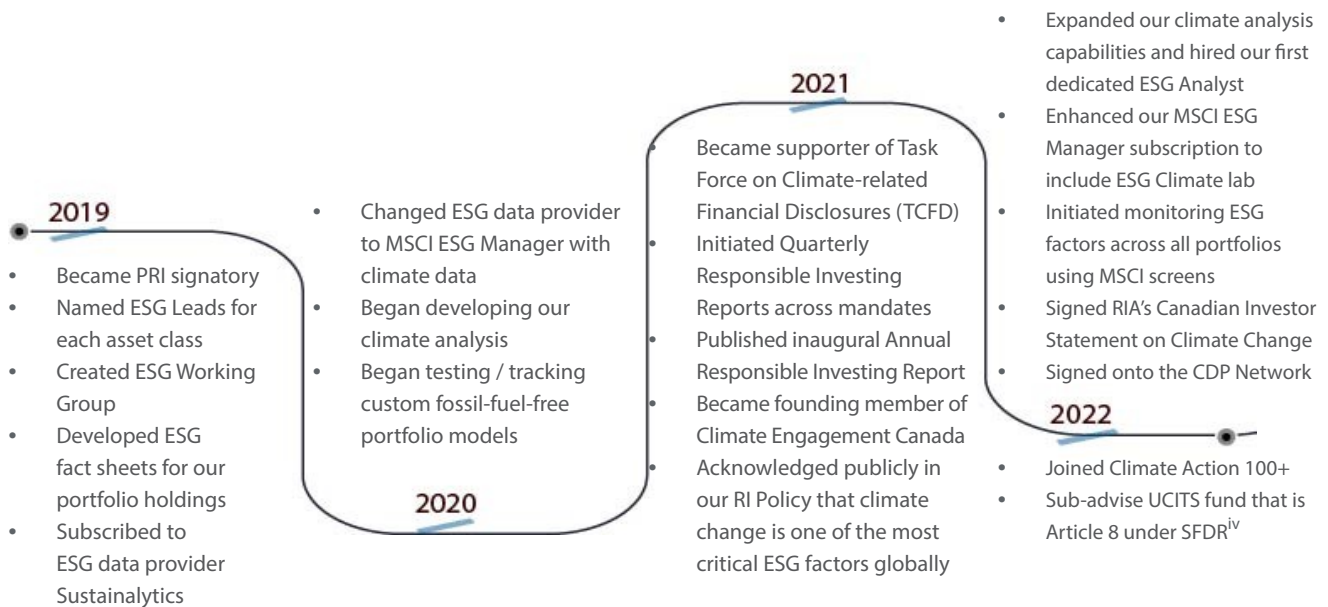
**Figure 1. Core Elements of Recommended Climate-Related Financial Disclosures**



*Source: Task Force on Climate-related Financial Disclosures — Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures, October 2021*

Beutel Goodman is a privately owned, independent Canadian investment manager. For over 50 years, we have been dedicated to helping our institutional, private wealth and retail clients achieve their long-term investment goals. As value investors, a focus on absolute risk and capital preservation is the cornerstone of our fundamental research and disciplined investment process. We are committed to integrating ESG into our investment process to help create financially sustainable long-term value for our investors. As active managers managing concentrated portfolios, engagement, proxy voting and collaboration are key elements of our investment activities, including with respect to ESG, and we are focused on remaining diligent and thoughtful in these critical areas. As illustrated below, we have come a long way on our ESG journey and we will continue to expand our ESG capabilities, progress in our initiatives and adapt to industry changes as part of our research and valuation process.



**Figure 2. Beutel Goodman Climate-related Highlights and Achievements**

Source: Beutel Goodman

Climate change is a key factor within our ESG integration and responsible investing approach as we seek long-term financial sustainability of investments for our clients. While considering the climate-related risks facing companies; for example, with high GHG emissions or significant exposure to the physical impacts of climate change, we also consider climate-related opportunities for companies whose business activities and technologies can contribute to the transition and achievement of climate goals as part of our research and valuation process. We will continue to monitor and evaluate the climate-related goals set and executed by companies to insulate their businesses against climate-related risks and take advantage of climate-related opportunities as part of our disciplined investment process. It is a formidable task, especially in Canada, a country with an economy deeply rooted in resources, but one that we are firmly committed to. We also acknowledge the importance of a just transition to a low-carbon economy that is committed to meeting climate goals by ensuring the whole of society — all communities, all workers, all social groups, including Canada's Indigenous Peoples — are brought along in the pivot to a net-zero future.

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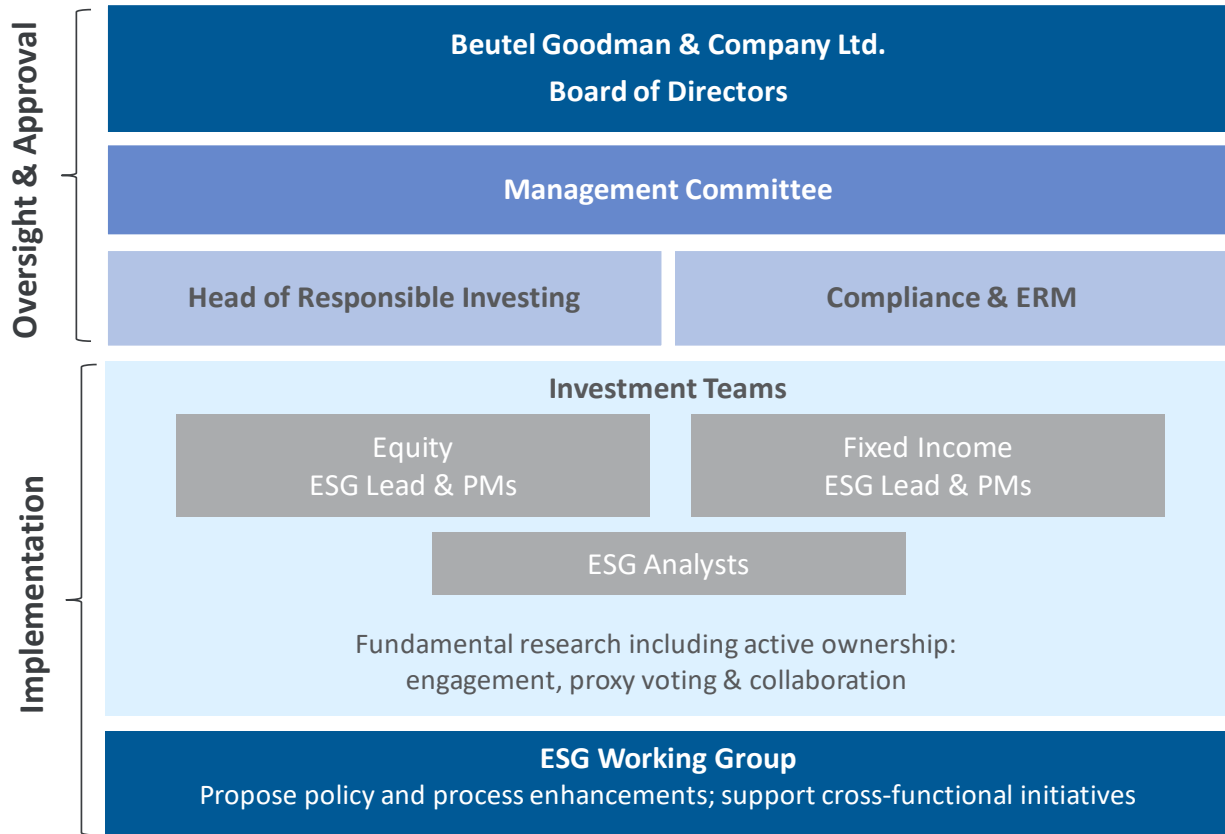


# GOVERNANCE



Beutel Goodman's climate-related activities oversight listed below in Figure 3 is the same governance structure for our ESG oversight.

**Figure 3. Beutel Goodman Climate-Related Activities Oversight**



Source: Beutel Goodman

We believe our clear ESG responsibilities enhance the way we operate and service our clients as part of our overall investment approach:

- The **Management Committee** of Beutel Goodman, a key decision-making body of our company, oversees our ESG and climate approach, including review and approval of our climate-related framework, responsible investing policies and reports, PRI reporting and TCFD reporting, as well as climate-related initiatives/collaborations.
- The **Head of Responsible Investing** is accountable for Beutel Goodman's responsible investing governance and the consistent application of our responsible investing approach firm-wide, which includes all climate-related activities. The Head of Responsible Investing reports directly to the Management Committee.

- At the firm level, ESG risks are monitored by our **VP, Enterprise Risk Management (ERM)** encompassing oversight of our ESG and climate approach, commitments and reporting requirements for our climate-related pledges and providing periodic reporting to the Management Committee.
- Beutel Goodman's **Chief Compliance Officer (CCO)** provides leadership for monitoring, assessing, and communicating ESG and climate-related regulatory compliance requirements, while overseeing overall firm compliance. The CCO reports directly to the Management Committee.
- The **Portfolio Managers/Analysts** are responsible for all security-level decisions and using the Beutel Goodman ESG framework in their analytical processes and corporate engagement activities, as applicable. PMs/analysts consider all material factors that may impact investment recommendations, including climate-related factors. The investment teams' responsible investing activities, including engagement and proxy voting, are reported on a quarterly basis to the firm's Management Committee.
- **ESG Leads, Equity and Fixed Income** have the responsibility for defining ESG policy and procedures, which includes climate-related activities and spearheading the implementation and coordination of our ESG and climate-related investment activities, in addition to considering future responsible investing initiatives.
- **ESG Analysts** are responsible for producing reporting and managing our data sources, and providing general support for our ESG- and climate-related activities.
- Our **ESG Working Group**, composed of members of our equity and fixed income investment teams and representatives of our various client channels, meets regularly to discuss matters pertaining to ESG and responsible investing, such as proposing and reviewing policy and process enhancements and considering future RI initiatives.





# STRATEGY

The TCFD has divided climate-related risks into two major categories:

- (1) Risks related to the physical impacts of climate change; and
- (2) Risks related to the transition to a lower-carbon economy.

These risks will likely have material financial impacts on companies that we research for potential investment, and could lead to, among other things, increased capital and operating costs, supply-chain disruptions, impairments and writedowns, loss of revenue and market share, credit-rating downgrades, increased insurance costs or non-insurable assets, and difficulties in accessing funding.

**Figure 4. Climate-Related Risks, Opportunities and Financial Impact**



Source: TCFD

## PHYSICAL RISK

TCFD classifies physical risks resulting from climate change as acute or chronic. Acute physical risks refer to those that are event-driven, including increased severity of extreme weather events, such as cyclones, wildfires, hurricanes or floods. Chronic physical risks refer to longer-term shifts in climate patterns (e.g., sustained higher temperatures) that may cause sea levels to rise or chronic heat waves. Climate change events can cause significant risk to human health, cities, infrastructure, ecosystems, food production and access to clean water. According to a report from the Climate Disclosure Project (CDP), in 2018, 215 of the 500 largest global companies by market capitalization reported in aggregate US\$797 billion of potential financial risks related to climate change, US\$250 billion of which is related to stranded asset risk and from physical climate threats, as well as from energy transition risk.<sup>v</sup>

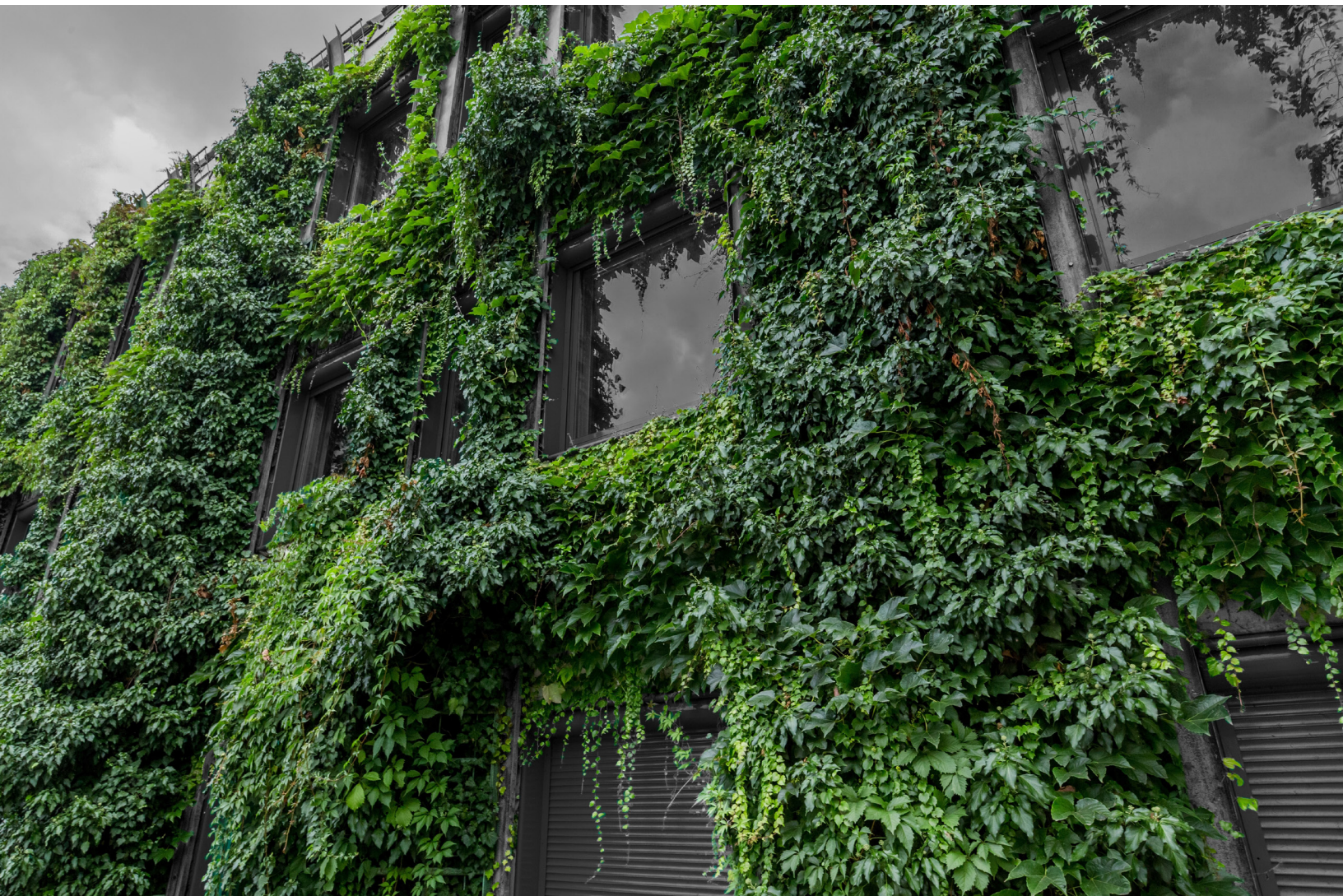
On the fixed income side, we also factor in the risks and opportunities to sovereign debt issuers that may include increased climate resiliency spending (preventive) and relief spending (reactive to a climate event), which will likely increase the country's debt levels and may impact their debt burdens, valuations and credit ratings. In a recent report from S&P Global Ratings on the vulnerability and readiness of 135 countries for climate change over the next 30 years, the rating agency found that physical climate risks could expose 3.3%, 4%, and 4.5% of world GDP to losses by 2050 under



three different climate pathways.<sup>vi</sup> The World Meteorological Organization estimates that in 2021 there were more than 11,000 reported disasters attributed to weather, climate or water hazard globally, with just over 2 million deaths and US\$3.64 trillion in losses.<sup>vii</sup> According to the Intergovernmental Panel on Climate Change (IPCC), approximately 3.3 billion to 3.6 billion people live in areas that are highly vulnerable to climate change.<sup>viii</sup> On the opportunities side, the International Energy Agency (IEA) states that there is a need for total annual

energy investment of US\$5 trillion by 2030, involving the tripling of investment in energy infrastructure, electricity generation and low emission fuels.<sup>ix</sup>

In the following table we highlight a variety of risks and opportunities we have identified over the short, medium and long term from physical climate risks for the companies in our equity and fixed income portfolios.



**Table 1. Physical Climate-Related Risks and Opportunities**

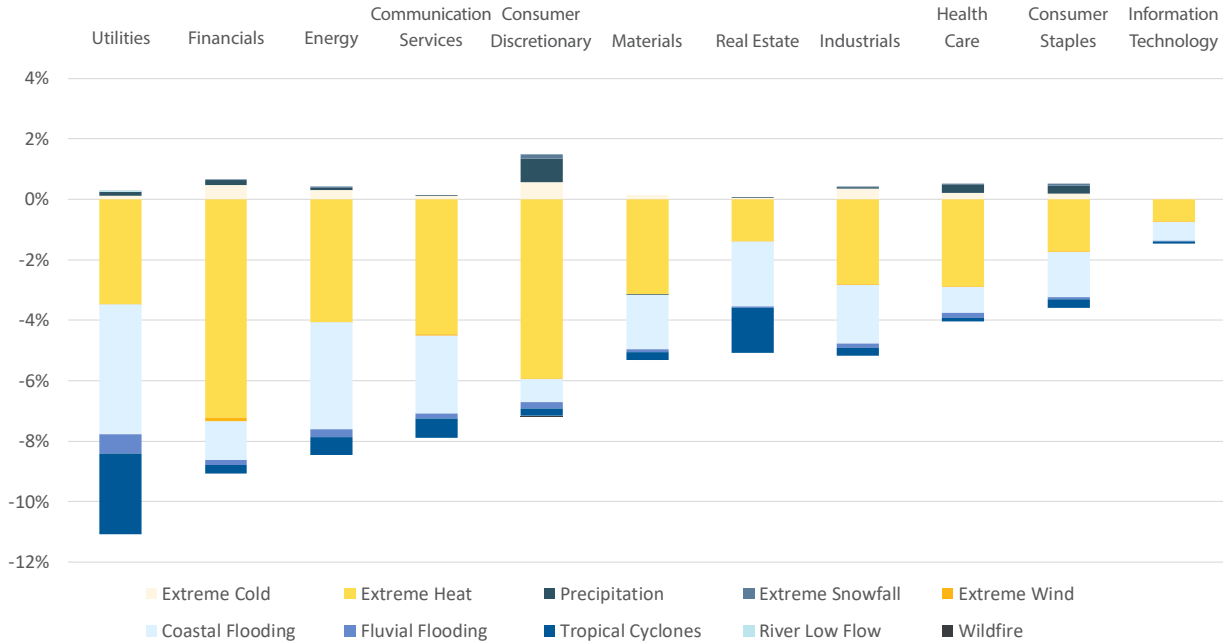
Description of Risk	Time Frame	Impact on Companies in Our Investment Portfolios	
		Risks	Opportunities
<b>Acute</b>			
Event driven Increase in severity of extreme weather events (Floods, cyclones, wildfires etc.)	Short, Medium and Long-term	Health and safety of employees	Insurance: Expanded demand for weather products
	Short, Medium and Long-term	Volatility in input prices (commodity prices)	Ability to source renewable power
	Short, Medium and Long-term	Physical damage to company's assets (insured?)	Participation in the carbon market
	Short, Medium and Long-term	Reduced productivity due to weather related employee absenteeism	Energy efficient buildings
	Short, Medium and Long-term	Impact on a company's solvency due to potential litigation stemming from weather related event	Adoption of energy efficiency measures
	Short, Medium and Long-term	Reduced revenue, higher operating costs and writedowns of company's own operations	Decreased sensitivity to changes in the price of carbon
	Short, Medium and Long-term	Obstruction of transportation routes causing delays in shipments	Access to public sector incentives
	Short and Medium-Term	Change in consumption of goods and services due to extreme weather events	Access to sustainable financing options
	Medium and Long-term	Disruptions to supply chains	
	Medium and Long-term	Disruptions to critical infrastructure that increases operating costs	
	Medium and Long-term	Impact on a Sovereign's debt levels and credit quality due to increased climate resiliency spending	
		Long-term	Shifts in investment strategies to mitigate longer term physical risk exposure
<b>Chronic</b>			
Longer-term shifts in climate patterns Changes in Precipitation Patterns Extreme Variability in Weather Patterns Rising Sea Levels and Sea Levels	Short and Medium-Term	Shortage of commodities, higher prices	Resiliency of business and ability to adapt
	Short, Medium and Long-term	Disruptions from uneven energy transition	Adoption of clean technologies
	Short, Medium and Long-term	Difficulty to attract capital to some industries	More efficient modes of transport
	Short, Medium and Long-term	Lack of insurance availability for deemed high risk areas	Less water stress in operations
	Medium and Long-term	Reduced availability of water for intensive industries such as hydroelectric, nuclear and fracking	Ability to diversify business operations
	Medium and Long-term	Change in consumption of goods and services due to shifts in climate patterns.	Ability to adapt to changing consumer preferences
	Long-term	Mass migration disruption to workforce	Resource substitutes/diversification

Sources: TCFD, Investor Leadership Network, Beutel Goodman



Using MSCI Climate Value-at-Risk scenario testing, we have created the following graph to identify the potential physical risks for the universe of companies that we may invest in using member companies of the S&P 500 as a proxy for illustrative purposes.

**Figure 5. Physical Risks by GICS Sector — S&P 500 Index**



*For Illustrative Purposes Only.*

*Sources: MSCI ESG Manager, Beutel Goodman. As at December 31, 2022.*

TRANSITION RISK

On the transition risk side, companies face various levels of risk that could negatively impact financials as well as reputation. Governments are imposing regulatory and legislative actions that could constrain businesses’ activities such as carbon taxes, emission reductions and reporting obligations and the phasing out of coal-fired generation. On the opportunities side, governments may provide tax incentives for cleaner technologies such as wind and solar power, as well as carbon capture and storage. The development of new and possibly disruptive technologies will lead to winners and losers. We expect that companies that fail to embrace change and cling to a long runway for carbon will face decreased demand for their product if not obsolescence over time. On the flip side, several new technologies such as battery storage for electricity, hydrogen blending and direct air capture could revolutionize the way energy is produced and moves through the supply chain, leading to significant opportunities. As the number of extreme climate events increase, companies also face increasing litigation risk. For example, the liabilities that utility PG&E Corp. faced for its equipment sparking several deadly wildfires in California in 2019 ultimately led to the company defaulting on its debt obligations and declaring bankruptcy. In the following table we highlight a number of risks and opportunities we have identified over the short, medium and long term from transition climate risks.

**Table 2. Transition Climate-Related Risks and Opportunities in Investment Portfolios for Corporations**

Description of Risk	Time Frame	Impact on Companies in Our Investment Portfolios	
		Risks	Opportunities
<b>Policy and Legal</b>			
	Short to Medium-Term	Carbon Taxes	Best Practices
	Short, Medium	Emissions Regulations	Insurance against litigation.
	Short, Medium	Emission reporting standards and obligations	
	Short, Medium, Long-term	Regulations of products and services	
	Medium, Long-term	Exposure to Litigation	
<b>Technology</b>			
	Medium, Long-term	Substitution of existing products with lower emissions options if company fails to adapt.	Government subsidies and incentives for new clean and green technologies
	Medium, Long-term	Unsuccessful investment in new technologies	Companies offering low carbon products may see increase in demand
	Short, Medium, Long-term	Costs to transition to lower carbon economy	Resource efficiency may lower costs
	Medium, Long-term	Disruptive technological change	Shift to lower emission energy sources will likely decrease costs.
	Medium, Long-term	Higher costs in developing new technologies	More efficient management of water usage and waste will likely lower costs
<b>Market</b>			
	Short, Medium, Long-term	Increased cost of raw materials	Access to green, social, sustainable and transition financing which could come at a lower cost
	Medium, Long-term	Products are obsolete	
	Medium, Long-term	Risk of stranded assets	
<b>Reputation</b>			
	Short, Medium, Long-term	"Greenwashing"	Best Practices
	Short, Medium, Long-term	Stigmatization of sector	
	Short, Medium, Long-term	Negative stakeholder feedback	
	Short, Medium, Long-term	Impaired access to financing	

Sources: TCFD, Investor Leadership Network, Beutel Goodman

The risks and opportunities vary significantly from sector to sector. For example, higher-carbon-intensive industries such as energy and utilities face significant regulatory and obsolescence risk but also have the greatest opportunities to gain from new technologies and cleaner sources of energy. Further, companies whose operations are located on a coast also face a greater risk from rising sea levels.

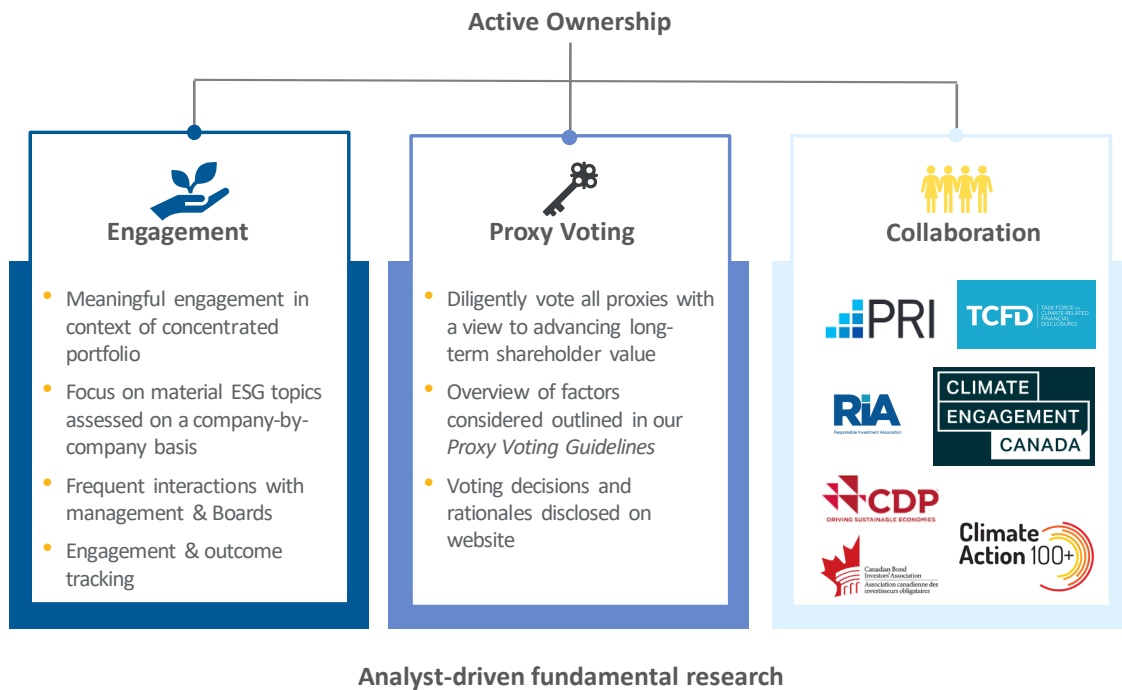
INTERNAL ALIGNMENT

We are in a process of understanding how evolving physical and transition climate risks will impact our own business. We have only one office, located in midtown Toronto, Ontario, that is leased. Potential climate risks affecting that location are considered in our business continuity and disaster recovery plans. For example, the risk of a climate-related event impeding employees from accessing our office is addressed by our work from home policy. The following are what we consider as having the largest contributions to Beutel Goodman’s carbon footprint: power usage, paper usage, employee travel (business and commuting) and energy efficiency. As an investment manager, we consider our greatest climate-related risks to be regulatory, reputational and client-based.

INVESTMENT PROCESS

As a value manager, Beutel Goodman’s primary objective is to deliver superior risk-adjusted financial performance to our clients over the long term. We pursue this through the ownership of debt and equity positions in high-quality companies. Companies with strong environmental, social and governance practices often share many of the sound fundamentals that are attractive to our value-investing approach. ESG factors, including climate-related activities, have the potential to materially affect the long-term financial sustainability of a business, which is an important focus of our analytical process. Using a bottom-up, disciplined, value-investing approach, each equity and credit research report we prepare incorporates climate-related considerations as part of the research and valuation process.

**Figure 6. Beutel Goodman Active Ownership**



Source: Beutel Goodman, summary, for illustrative purposes only.



ACTIVE OWNERSHIP  
— ENGAGEMENT

Engagement is a core part of our due diligence and ongoing monitoring of investments in our disciplined value investment process, since inadequate ESG practices can be a risk to the future financial performance of a company, and it is carried out by our portfolio managers and analysts. Also core to our ESG philosophy and climate-related activities is **engagement**, not divestment. For example, we do not believe that divestment of companies that produce fossil fuels or have fossil fuel reserves is the most effective method to achieve climate goals that are consistent with investment goals. In our view, divestment primarily serves to shift the power of engagement to stakeholders who do not have climate factors as a component of their investment research. We believe that we have significantly more power to achieve our client's long-term financial goals by directly engaging with companies as their major stakeholders (equities and bonds) versus sitting on the sidelines having divested.

Climate change is a key priority in our active ownership practices. We view ourselves as partners of the companies in which we invest. As such, we approach ownership as an ongoing collaboration in the creation of long-term stakeholder value. We have a bottom-up, value-driven research process that generally leads us to hold concentrated positions in our portfolios, making our engagements significant. Our climate-focused engagements encompass many topics that can be material to the long-term value of holdings, such as disclosure and transparency (alignment with TCFD), carbon footprint, pathway to net zero, science-based targets, role of new technologies, emissions-reduction strategies, energy transition, sustainability, role in a just transition, renewables use, role of carbon offsets, executive compensation alignment with environmental targets, and sustainable finance.

ACTIVE OWNERSHIP  
— PROXY VOTING

We also believe in the importance of thoughtfully exercising our voting rights in support of long-term shareholder value through **proxy voting**. Portfolio Managers/Analysts are responsible for proxy voting. We carefully assess and vote on all ballot items based on whether they are consistent with long-term shareholder value creation. As responsible investors, we seek to make informed voting decisions through diligent research; this includes direct dialogue through engagements with companies, which allows us to gather information and have thorough discussions. Where relevant to a company's long-term value, we will also use the power of our proxy votes to send a message to a board; for example, if climate-related activities are not on track with commitments.

We recognize that the pooling of resources with other investors may enhance the effectiveness of our investment engagement activities and lead to positive long-term investment outcomes. We aspire to increasingly participate in appropriate collaborative engagement initiatives that are aligned with our active ownership philosophy and engagement priorities. We are participants in **Climate Action 100+**, a global investor initiative consisting of over 600 investors representing more than US\$55 trillion in collective assets under management, and are currently designated as a Collaborating Investor to engage with Duke Energy Corp. and Unilever plc. We are a founding member of **Climate Engagement Canada** and are currently a Supporting Engagement Participant in the following engagements: Canadian Pacific Railway Ltd., Cenovus Energy Inc., Loblaw Companies Ltd, Lundin Mining Corp. and Pembina Pipeline Corp.

The following table illustrates our climate-related voting activity during the 2022 proxy season.

**Table 3. Climate-Related Proxies — Beutel Goodman Equity Portfolios, 2022**

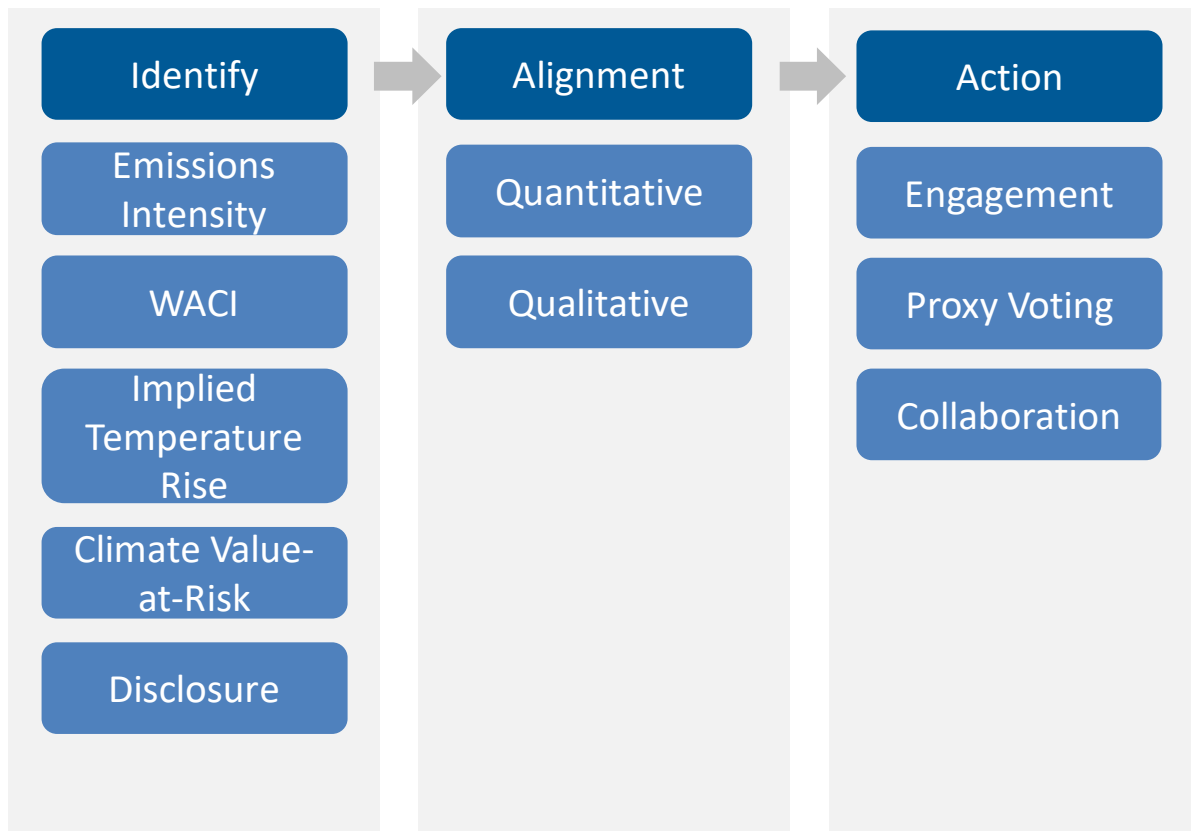
Number of Proposals	Canadian Equity	U.S. Equity	International Equity
Climate-related Proposals	12	2	0
Voted Against Management	0	0	0
Voted Against Proxy Providers	1	0	0

Sources: Beutel Goodman, Glass Lewis

We note that voting against climate-related resolutions does not translate into a lack of support for climate engagement, nor should it call into question our commitment to engagement on climate-related issues that relate to long-term financial performance. We perform a thoughtful review of each proposal, consider what proposals should reasonably be in the purview of the Board and management, engage with management when necessary, and seek to determine whether the proposal will enhance shareholder value or help to prevent material and/or reputational risk. We also consider the steps that the company may already have taken or is committed to taking to address the issues raised. We do not blindly support every proxy that is climate-related.

As we recognize the importance of achieving the goals of the Paris Agreement to long-term financial sustainability, we engage with management teams and boards on their commitment to net zero by 2050, as well as on their role in the energy transition. A key climate engagement topic is a company's pathway to net zero GHG emissions by 2050. We use a multi-stage approach, illustrated below.

**Figure 7. Beutel Goodman Assessment of Net Zero Alignment**

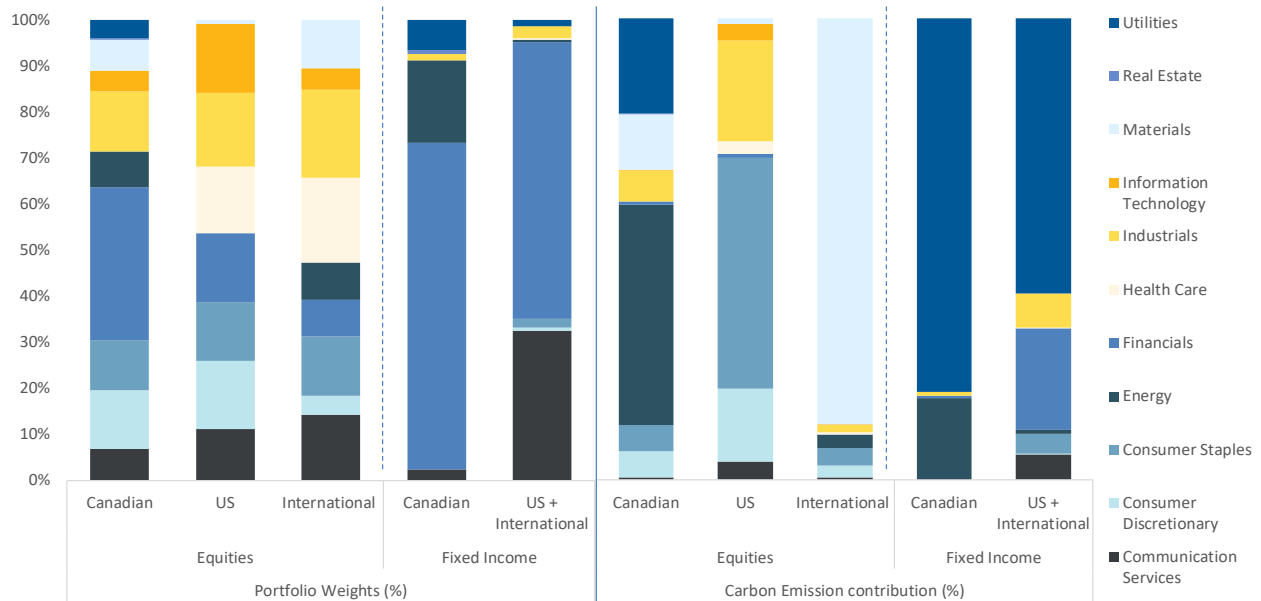


Source: Beutel Goodman

The first step is using quantitative data such as Weighted Average Carbon Intensity (WACI) to identify the companies with the largest carbon footprint in the portfolio. Based on that analysis, we can then prioritize topics for engagements.



**Figure 8. Beutel Goodman Portfolios — Analysis of Sector Weights and GHG Emissions**



	Canadian Equity	U.S. Equity	International Equity	Canadian Bonds	US/International Bonds
Top 3 Emitting Sectors	Energy, Utilities, Materials	Consumer Staples, Industrials, Consumer Discretionary	Materials, Consumer Staples, Energy	Utilities, Energy, Industrials	Utilities, Financials, Industrials
Top 3 Weighted Sectors	Financials, Industrials, Consumer Discretionary	Industrials, Information Technology, Financials	Industrials, Health Care, Consumer Staples	Financials, Communication Services, Utilities	Financials, Communication Services, Industrials

Sources: MSCI ESG Manager, Beutel Goodman. As at December 31, 2022.

The second step is to determine the company’s alignment to net zero, which involves a quantitative screen as well as a qualitative one. The quantitative screen uses MSCI’s Implied Temperature Rise metric to determine if a company is aligned, misaligned or lagging on its path to net zero by 2050. When examining a company’s commitment to net zero, we look beyond the company’s headline commitment to assess its credibility; that is, is there a concrete plan or is it merely aspirational? We have a framework for qualitatively assessing that commitment based on the Paris Aligned Investment Initiative (PAII). The PAII defines achieving net zero as “companies that have current emissions intensity performance at, or close to, net-zero emissions with an investment plan or business model expected to continue to achieve that goal over time.”<sup>ix</sup>

Analysis of the commitment to net zero involves the following:

- Does the company set short and medium targets, as well as a long-term target?
- Do the company's targets include Scope 1, 2 and 3 GHG emissions or just Scope 1 and 2?
- Are the company's targets science-based, using the Science Based Targets Initiative (SBTi)'s methodology and verification?
- Does the company have a decarbonization strategy? Does it use carbon offsets? Is the plan based on technology that is currently available and/or under development? Is the capital expenditure program aligned with the company's goals?
- What are the company's opportunities for clean technology?
- Is there Board oversight and support of the climate plan?
- Is executive compensation tied to achieving climate goals?
- Does the commitment include a just transition whereby workers' health and safety, as well as community relationships, are taken into account?<sup>xi</sup>

We have created a PAI review form, illustrated below, as a tool to help in analyzing a company's climate-related commitments as part of our research and valuation process. We designed it based on PAI's recommendations, as well as based on the topics we have frequently engaged on that we believe are important in assessing a company's climate-related risk and opportunities. The data is drawn from several sources, including Bloomberg, MSCI and CDP.

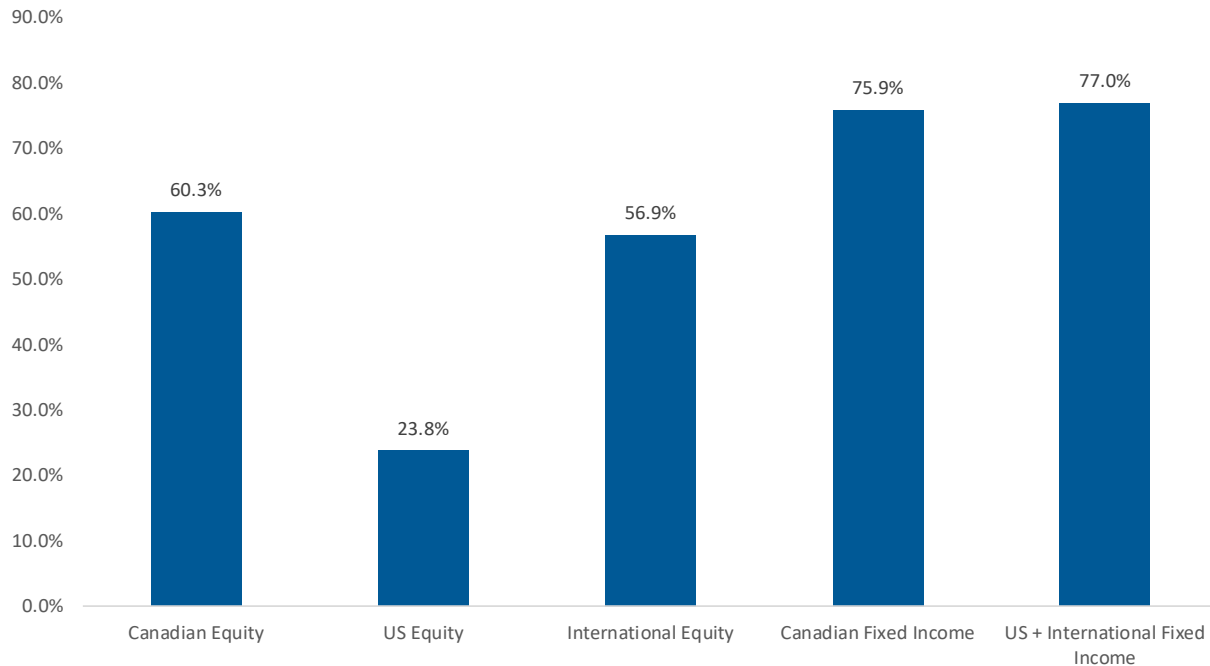
**Table 4. Illustrative Climate Metrics****Company ABC - PAII Scorecard**

In Millions of CAD except Per Share	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
12 Months Ending	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
<b>Carbon Footprint</b>								
GHG Scope 1 Emissions	18,957	19,107	17,431	18,509	20,577	21,377	19,565	20,158
GHG Scope 2 Emissions	1,511	1,373	1,304	1,718	1,553	1,345	1,292	1,410
GHG Scope 3 Emissions	1,466	1,549	1,651	1,881	1,543	1,640	123,000	128,000
Greenhouse Gas Intensity per Sales	513	701	699	633	574	593	846	551
Implied Temperature Rise (oC)	10	10	10	10	10	10	10	10
<b>Policy</b>								
Climate Change Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GHG Emissions Reduction Policy	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Engagement with Policymakers on Climate Change	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Climate Change Integrated in Business Strategy	n/a	Yes	Yes	Yes	Yes	Yes	Yes	n/a
Risks of Climate Change Discussed	No	No	No	No	Yes	Yes	Yes	Yes
Climate Change Opportunities Discussed	No	No	No	No	No	No	No	No
Adopts TCFD Recommendations	n/a	n/a	n/a	n/a	n/a	Yes	Yes	Yes
<b>Emissions Reduction Initiatives</b>								
Emissions Reduction Initiatives	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Company Claims Net Zero Emissions Target	n/a	No	No	No	No	Yes	Yes	Yes
Target Coverage						Scope 1&2	Scope 1&2	Scope 1&2
Company Claims Science-Based Emissions Targets	n/a	No	No	No	No	No	No	No
Target Year for GHG Emissions Target	—	—	2030	2030	2030	2030	2030	2050
GHG Emissions Intensity Reduction Target	—	—	30	30	30	30	30	—
Baseline Year for GHG Emissions Target	—	—	2014	2014	2014	2014	2014	2021
Climate Scenario Analysis	n/a	No	No	Yes	Yes	Yes	Yes	Yes
Carbon Offsets	—	—	—	—	—	—	—	—
Carbon Pricing	n/a	No	Yes	Yes	Yes	Yes	Yes	Yes
Sustainable Investment/Capital Expenditures	—	—	—	—	—	—	—	—
<b>Governance</b>								
CSR/Sustainability Committee	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Executive Compensation Linked to Climate	n/a	n/a	n/a	n/a	No	No	No	No
Executive Compensation Linked to ESG	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Incentives for Management of Climate Change	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Sources: Bloomberg LLP, MSCI. For illustrative purposes only.

We actively monitor the commitment to net zero from the companies we invest in as we believe that the risk of stranded assets from not adapting to the transition to a net zero world could be a material business risk.

**Figure 9. Percentage of AUM Invested in Companies with Net Zero Targets**



Sources: Bloomberg LLP, Company Reports, MSCI, Beutel Goodman, as at December 31, 2022.

The third component is action-oriented, whereby we use the information gathered in steps one and two to formulate our engagement discussion with a view to understanding the risks and impact on valuation. We apply a waterfall approach to engagement that generally starts with discussions between the portfolio managers and the company's management, preferably at the executive level. We also seek to engage with a company's chief sustainability officers (or a similar role) for a deeper dive, and may include our ESG leads depending on the engagement topics. This typically takes place over multiple meetings, as it takes time to effect change and to gauge a company's commitment and compliance. We may also seek out collaborative efforts, using the added power of engaging together with other company stakeholders. Engagement can be accelerated to a Board of Directors if we have significant concerns. Proxy voting is another tool we may use.

Below are examples of engagements in 2022 with three of our current investee companies, Fortis Inc., TGS ASA Corp. and Ontario Power Generation.



## Engagement Examples: ESG In Action

### Key Topics Discussed

#### FORTIS INC. – Joint Equity and Fixed Income Board Engagement Q4/22

- Board gender diversity
- Executive Compensation linked to ESG metrics
- Climate Strategy
- Coal Generation Retirement
- Balancing needs of equity investors and bondholders
- Capital Allocation
- Accessibility and Affordability
- Cybersecurity and physical security

#### TGS ASA - International Equity Board Engagement Q1/22

- Energy security and transition
- Role of natural gas in the energy transition
- Balancing advancement of green sources with safe and steady supply of conventional energy
- View of the future of the Energy industry:
- Transitioning to cleaner fuels
- Decreasing carbon intensity between well and consumer
- Realigning supply chains to regions with strong regulatory backdrop and rule of law

#### ONTARIO POWER GENERATION - Fixed Income Management Engagement Q3/22

- Is Nuclear “green”?
- Development of Small Modular Nuclear Reactors
- Net Zero Targets
- Green Bond Program
- Relationship with the Province of Ontario

*Note: This information is provided for illustrative purposes summarizing some of the climate-related topics discussed and may not be representative of all topics discussed.*

We manage assets globally, but as a Canadian investment manager, a large portion of our assets under management are investments in Canadian companies. Canada is a producer of energy and has a significant carbon footprint. According to CDP, Canada is currently aligned to 3.1 degrees Celsius by 2050,<sup>xii</sup> so there is work to be done to meet our nation’s commitment to the Paris Agreement. Additionally, it is estimated that approximately 88% of Canada’s reported emissions come from companies that do not have GHG emissions targets.<sup>xiii</sup> The Canadian government passed the *Canadian Net Zero Emissions Accountability Act* in June 2021, which codifies the country’s Paris commitment into law. In March 2022, the government released its *Climate Reduction Plan*, setting a GHG emissions reduction goal of 40%–45% by 2030 using 2005 as a base. Additionally, where applicable, Canadian provinces have adopted regulations to phase out coal-fired generation. Despite taking these steps, Climate Action Tracker rates Canada’s climate target, policies and finances as “highly insufficient,” meaning not in alignment with the Paris Agreement goals.<sup>xiv</sup> The challenge for Canada is clear, and as major investors in Canadian companies, we believe we can play a significant role through engagement and collaboration and help support the long-term value of companies for our clients. We currently own Canadian energy companies in both our equity and fixed income portfolios. We continually engage with these companies on numerous climate-related matters relevant to long-term value, including energy transition and commitments to net zero. We also discuss new technologies that should move the needle to net zero by 2050, such as carbon capture and storage, small modular nuclear reactors, renewable power, hydrogen blending, tailings

ponds improvements, and new solvent solutions for Steam Assisted Gravity Drainage (SAGD) extraction. For example, the oil sands have been in the crosshairs of fossil-fuel-divestment lobbyists for some time. As such, we believe these companies could be at the forefront of new technologies and new techniques to reduce the carbon intensity of oil production, as well as ways to lessen their carbon footprint while enhancing their long-term financial sustainability.

We believe that the demand for crude oil will remain relatively consistent in the near and mid term as it will take time to effect significant change in the way that consumers use hydrocarbons (i.e., electric vehicles) and to find cleaner alternative fuel sources for the harder-to-abate sectors such as long-haul trucking and marine transport. In the longer term, as we approach 2050 and beyond, we believe that the demand for crude oil will be significantly less than it is currently. In the interim, there are oil sands companies working to have the advantage of producing oil with the lowest carbon footprint, which we believe could be an environmental and financial advantage for Canada. We also believe that natural gas plays a significant role as a transition fuel and that the path to decarbonization includes nuclear power.

The challenge for the decarbonization of fossil fuels remains that currently none of the technology under consideration — such as carbon capture and storage, hydrogen blending, or battery storage — is economical on a large scale. We believe that additional work in concert with industry, government and investors is required for serious advancement.

In September 2022, we joined with other asset managers in submitting a joint response on “Canada’s Options to Cap and Cut Oil and Gas Sector Greenhouse Gas Emissions to Achieve 2030 Goals and Net-Zero by 2050.” We encouraged the Government of Canada to adopt the most practical and effective regulatory changes to incentivize emission-reduction innovation and implementation to further limit climate change, and to reduce systemic risk in our portfolios.

Another important factor in risk reduction and the transition to a low-carbon economy is seeking a **just transition**. While outside of the scope of the TCFD, energy transition should include the interests of Indigenous communities impacted by strategic changes implemented by companies. We support an inclusive agenda that will engage impacted Indigenous communities to seek a just transition. The concept of a just transition also means that other social issues such as workers’ health and safety is not compromised in the pursuit of climate-related targets.

As investors, we focus on the risks and opportunities to our investments from the energy transition. On the negative side, there is a risk of stranded assets as the world transitions to cleaner sources of energy. On the opportunities side, the focus is on producing cleaner oil and embracing new technologies. Simply focusing on companies that have a low carbon footprint or avoiding high-emissions sectors will not achieve global decarbonization. We believe in the need to partner with the energy sector as investors and through engagement to keep the focus on the risks and opportunities of climate change consistent with seeking to achieve long-term financial sustainability of our investments for our clients.

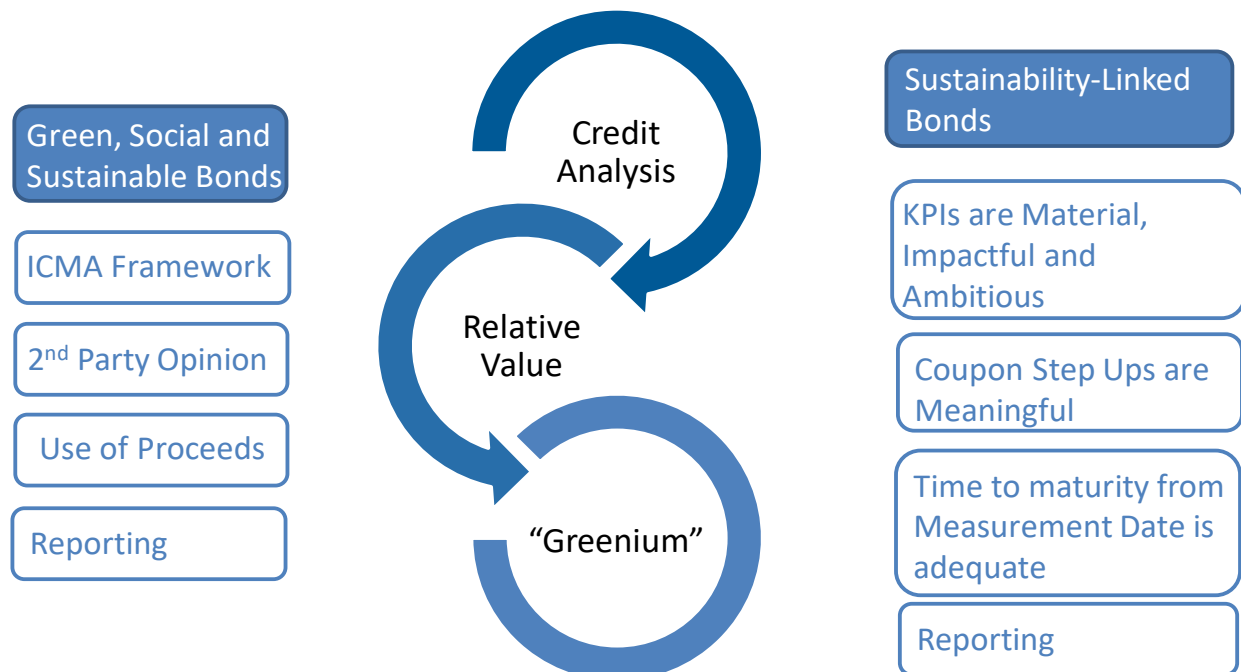
We follow a rigorous process for the evaluation of sustainable finance securities in all of our strategies and portfolios. First, any labeled bond (green, social, sustainable or sustainability-linked) must be issued under an International Capital Markets Association (ICMA) framework, whereby there is

- (1) **A second party opinion;**
- (2) **The use of proceeds are clearly defined; and**
- (3) **The projects funded are verified, updated annually and audited.**

Sustainability-linked Bonds (SLBs) are evaluated under the following criteria:

- (1) **Ambitious targets that are challenging for the company to achieve and material to the company's business;**
- (2) **A sufficient length of time between observation date and the maturity date;**
- (3) **A meaningful penalty;**
- (4) **A second-party opinion; and**
- (5) **The key performance indicators are measurable, published annually and verified (see Figure 10 below).**

**Figure 10. Beutel Goodman's Sustainable Finance Evaluation Process**



Source: Beutel Goodman, for illustrative purposes only



We also have expertise and experience offering custom ESG mandates. In June 2022, we launched a new private fund available only to our discretionary managed clients, the BG Sustainable Bond Fund. The objective of the fund is to maximize portfolio returns by investing in a diversified portfolio comprised primarily of Canadian-dollar-denominated debt instruments using a responsible investment approach that will seek to deliver a materially reduced carbon footprint compared to the fund's benchmark over time.

The fund's strategy has set interim Scope 1 and 2 GHG emissions target reductions and has committed to the pathway to net zero. The Weighted Average Carbon Intensity (WACI) of the corporate portfolio is actively managed to be lower than that of the benchmark over time, as measured by MSCI. This fund screens companies using socially responsible investment criteria, excluding companies whose primary line of business involves the manufacturing of weapons, alcohol, tobacco and cannabis, or the offering of adult entertainment or gambling. Companies and sovereigns in contravention of the principles of the UN Global Compact are also excluded. The fund will include investments in labelled green, social, sustainable, and sustainability-linked bonds that meet our investment criteria.

Climate scenario analysis helps identify how business strategies might change in response to climate-related risks and opportunities. We use MSCI's third-party models to calculate the Climate Value-at-Risk (CVaR) under different scenarios for all equity and fixed income holdings. The tools are used by portfolio managers and investment analysts in their analysis of where a company is on their journey, and to identify risks and opportunities and help focus engagement. We run the analysis on individual companies, as well as on sectors, so we can gauge how a company compares to its peers.

We have performed climate-scenario analysis on all of our holdings at year-end 2022 using the five Network for Greening the Financial Sector (NGFS) scenarios as outlined below in Table 5 to help us assess the climate risks and opportunities in our holdings. NGFS is an organization consisting of over 100 global central banks and supervisors. The network defines and promotes best practices to be implemented and conducts or commissions analytical work on green finance. Recognizing the difference between the temperature goal in NGFS's Below 2°C scenario (1.7°C), Delayed Transition scenario (1.8°C) and the most relevant, MSCI's scenario (2°C), we have chosen to use a temperature goal of 2°C for the purpose of our analysis.

**Table 5. NGFS Scenario Description**

Scenario	Category	Temperature Goal	Policy Reaction	Technology Change	Carbon Dioxide Removal	Regional Policy Variation
Net Zero 2050	Orderly	1.5°C	Immediate and Smooth	Fast	Medium Use	Medium
Below 2o°C	Orderly	1.7°C	Immediate and Smooth	Moderate	Medium Use	Low
Divergent Net Zero	Disorderly	1.5°C	Immediate but Divergent	Fast	Low use	Medium
Delayed Transition	Disorderly	1.8°C	Delayed	Slow/Fast	Low use	High
Current Policies	Hot House World	3°C +	None	Slow	Low use	Low

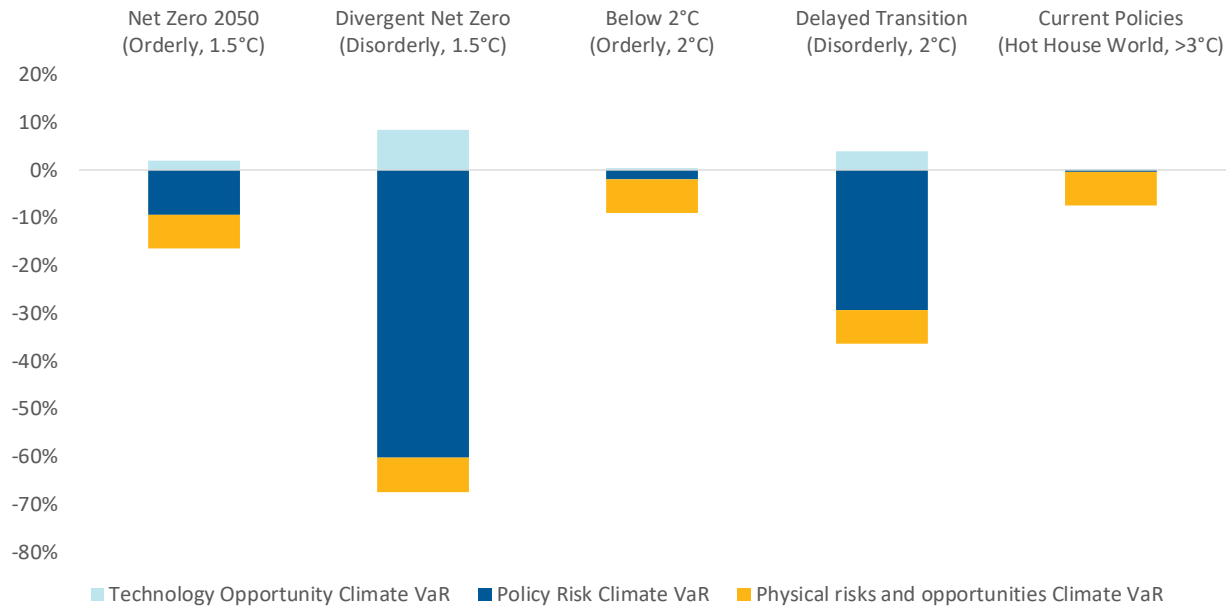
Sources: NGFS

The orderly scenarios assume climate policies are introduced early and become gradually more stringent. In these scenarios, both physical and transition risks are relatively subdued. Carbon sequestration becomes an efficient process towards decarbonization under these scenarios and the electrification of the transport industry paves an orderly path. The disorderly scenarios explore higher transition risk due to policies being delayed or divergent across countries and sectors. These scenarios employ the use of more low-carbon sources of technology. The hot-house world scenarios assume that some climate policies are implemented in some jurisdictions, but globally efforts are insufficient to halt significant global warming. These scenarios result in severe physical risk including irreversible impacts like sea-level rise.

The NGFS scenarios require a significant amount of electricity generation from renewables, averaging 93% in 2050 across all of the scenarios except hot house. Coal-fired generation is completely phased out and nuclear plays only a small role, averaging between 3% and 4% of total generation. The stick required to help achieve net zero by 2050 in the NGFS scenarios is the carbon price, which averages US\$568/tCO<sub>2</sub> (based to 2010) across all scenarios except hot house. For more details on these scenarios, please see the [NGFS website](#).

We calculated the Climate Value-at-Risk for all of our equity and fixed income holdings (aggregated) under all five NGFS scenarios (for a more detailed explanation of the CVaR analysis tool please see under Metrics and Targets). As shown in Figure 11, the largest risk to our portfolios occurs under the Divergent Net Zero and Delayed Transition scenarios.

**Figure 11. Climate Value-at-Risk Under the Five NGFS Scenarios — BG Equity Portfolios**



Sources: MSCI, Beutel Goodman. As at December 31, 2022.

Note: For the above example, we measure only the equity portfolios for illustrative purposes. The MSCI CVaR model assesses risk at the security level, including each individual bond. The model assumes equities exist in perpetuity and models projections to the year 2100. Bonds are modelled to their maturity date assuming that they will not be exposed to the same transition and physical risk as the equity of the same issuer for the same time period. The CVaR for a fixed income portfolio is therefore significantly less than that for an equity portfolio.



# RISK MANAGEMENT





Beutel Goodman has Enterprise Risk Management (ERM) structures and processes in place to identify, assess and manage risks, including setting appropriate governance structures and accountabilities. We have incorporated environmental-related risks and opportunities in our overall risk management framework and approach.

We consider climate-related risks as part of our investment, strategic, reputational, and operational risk categories.

**Table 6. Beutel Goodman's Climate-related Risks**

Risk Category	Climate-Related Risks	Actions
Investment Risk	<ul style="list-style-type: none"> <li>Adverse climate events, transition and/or related operational and reputational risks impacting the valuations of portfolio companies</li> </ul>	<ul style="list-style-type: none"> <li>BG incorporates climate considerations as part of our disciplined fundamental research investment process</li> </ul>
Strategic Risk	<ul style="list-style-type: none"> <li>Inability to meet evolving client expectations around climate-related risks</li> </ul>	<ul style="list-style-type: none"> <li>BG works with clients and industry groups to understand climate and industry developments. We employ a thoughtful approach in meeting client needs and expectations in line with our disciplined value investing principles</li> </ul>
Reputational Risk	<ul style="list-style-type: none"> <li>Negative perception around BG's approach to climate-related risks</li> </ul>	<ul style="list-style-type: none"> <li>BG strives toward open and transparent communication of our investment approach and business practices related to climate risks via ongoing reporting and industry participation (e.g., PRI)</li> </ul>
Operational Risk	<ul style="list-style-type: none"> <li>Rapid change and increased regulatory and industry expectations around compliance and disclosure.</li> <li>Increased risk of regulatory enforcement and/or legal actions</li> <li>Adverse climate events and/or transition risks impacting BG's operations</li> </ul>	<ul style="list-style-type: none"> <li>BG actively monitors regulatory changes and evolving industry expectations</li> <li>BG has implemented robust business continuity and disaster preparedness processes and is committed to proactive risk management and continual improvement to manage climate-related risks</li> </ul>

Source: Beutel Goodman

Our portfolio managers, ESG leads, ESG Working Group and the Head of Responsible Investing form the first line of defense and are primarily accountable for identifying, assessing and managing climate-related risks in our portfolios. Our Compliance, Legal and ERM serve as the second and third lines of defense and are responsible for oversight. Compliance, Legal and ERM are independent from the first line and report directly to the firm's Management Committee. Management monitors climate risks as part of ongoing management reporting.

**Figure 12. Climate-Related Risk Lines of Defense**

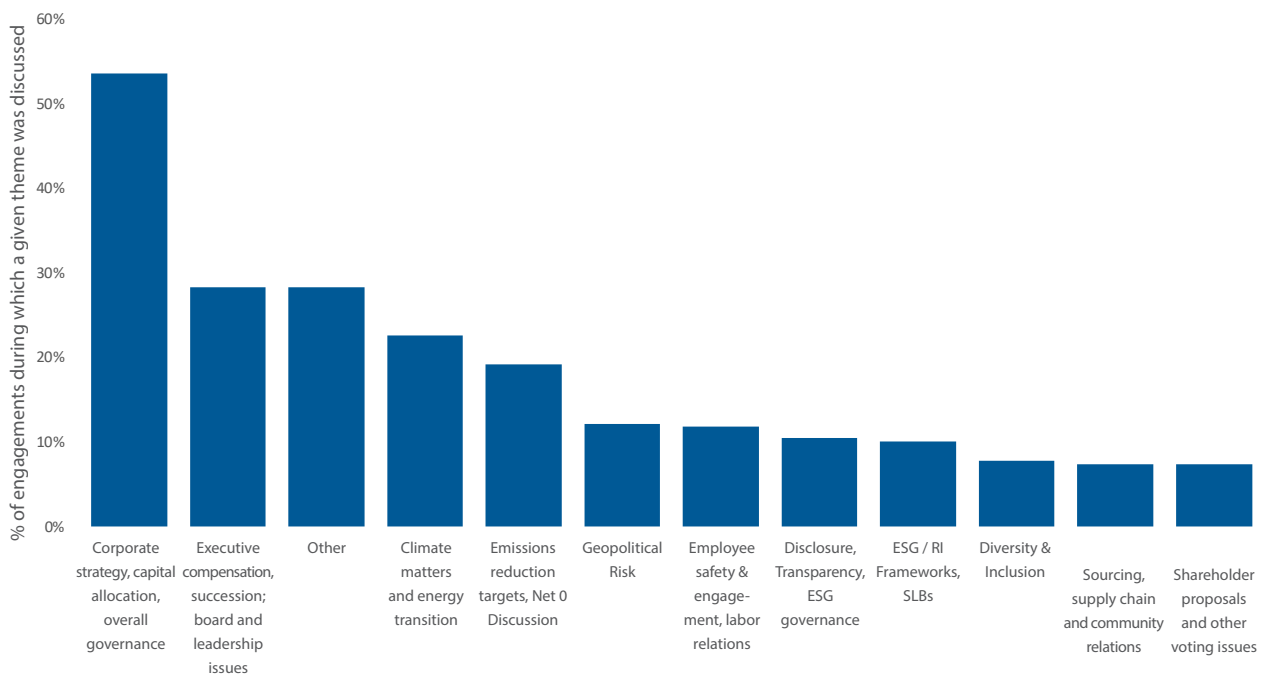


Source: Beutel Goodman

<b>Identify</b>	<ul style="list-style-type: none"> <li>• PMs are the first line of defense in identifying climate-related risks in the portfolio companies.</li> <li>• PMs leverage third-party data such as MSCI to augment proprietary research and help identify the companies most exposed to climate change and the associated highest risk factors.</li> <li>• Head of Responsible Investing and ESG leads actively participate in collaborations and industry events to identify potential new climate-related risks or areas of focus. Relevant information is shared with the investment teams.</li> <li>• The CCO, Head of Responsible Investing, ESG leads and ESG Working Group monitor for changes in regulatory compliance and disclosure requirements.</li> </ul>
<b>Assess</b>	<ul style="list-style-type: none"> <li>• PMs assess the climate-related risks that have been identified and determine the level of materiality for each investment. In determining the level of materiality, applicable physical and transition risks are considered (e.g., location of assets, stranded asset risk, regulatory jurisdiction).</li> <li>• PMs use MSCI's Climate VaR and Implied Temperature Rise metrics to assess the level of climate-related risk exposure within each portfolio company, as well as at the portfolio level.</li> </ul>

<b>Respond</b>	<ul style="list-style-type: none"> <li>Active Ownership is the cornerstone of our climate integration efforts. We directly engage with our portfolio companies, and we thoughtfully vote on our proxies to understand risks in portfolio companies and support long-term financial outcomes for investors.</li> <li>For the companies that are most exposed to climate-related risks, engagements are often focused on the credibility of a transition plan, target setting, disclosure, and the robustness of climate strategies</li> <li>We track our engagements and outcomes of those engagements.</li> <li>See Figure 15 for a summary of our engagements by theme.</li> </ul>
<b>Monitor and Report</b>	<ul style="list-style-type: none"> <li>ESG tear sheets are produced as part of the fundamental research process, at the time of investment initiation and generally updated annually for each company across both fixed income and equity portfolios. These sheets highlight and track the material performance indicators we have deemed important and are categorized by environmental, social and governance factors, including climate considerations and data. See Figures 16 and 17 for examples.</li> <li>ESG summary reports are generated on a quarterly basis using MSCI to track carbon footprint and GHG Intensity of the portfolios compared to the applicable benchmark.</li> <li>Responsible Investing reports are produced quarterly and annually, highlighting our ESG-related activities, including engagements and proxy voting.</li> <li>Investment teams discuss areas of material risk on a company-by-company basis during quarterly ESG Review meetings with PMs and the respective ESG lead.</li> <li>Management monitors relevant climate risks and commitments as a standing item in the quarterly management reporting package</li> </ul>

**Figure 13. Equity and Fixed Income Engagements by Theme, 2022**



Source: Beutel Goodman

**Figure 14. Example of a Beutel Goodman ESG Tear Sheet (Equity)**

<b>NEW CO.</b>
<b>Overall ESG Assessment</b>
<p><b>Identify Key Material Issues:</b> consider MSCI rating and research, company's sustainability disclosure, proxy information  <b>BG Assessment:</b> assess management of key financially material issues, areas of strength, areas of weakness</p>
<b>Key ESG Metrics</b>
<b>Governance (G)</b>
<b>Alignment with Shareholders and Value Creation</b>
Voting structure, ownership, board quality, independence, diversity Management Compensation tied to returns and ESG targets, capital allocation policy, ROIC
<b>Environmental (E)</b>
<b>Commitment to Climate Strategy</b>
GHG emissions, scopes disclosed, targets, alignment with disclosure frameworks, TCFD, SASB, GRI, CDP Targets, other company specific/sector concerns
<b>Social (S)</b>
<b>Commitment to Good Corporate Citizenship</b>
Diversity, Equity and Inclusion initiatives, compliance with human rights frameworks, SDG alignment
<b>Key ESG Issues and Areas of Engagement</b>
<b>Controversies</b>
<b>ESG Opportunities</b>

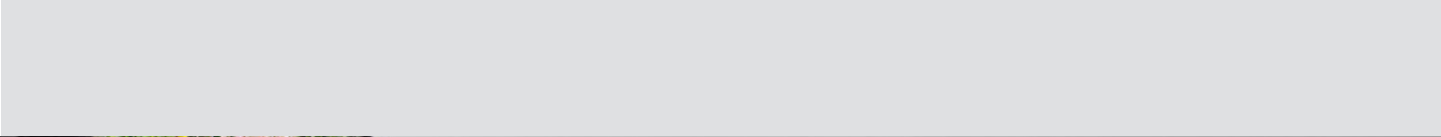
*Note: For illustrative purposes only and may not be representative of all the factors we consider.*



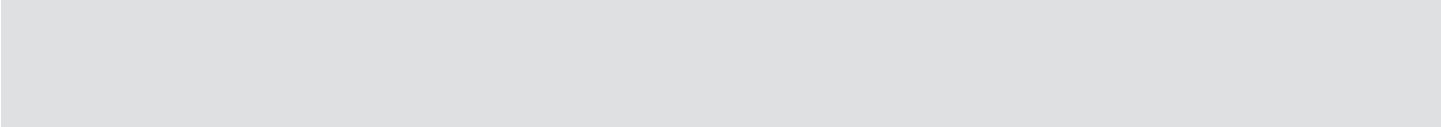
**Figure 15. Example of a Beutel Goodman ESG Tear Sheet (Fixed Income)**

Company ABC	
Overall ESG Risk	
MSCI Rating	
MSCI Previous Rating	
Last MSCI Rating Date	
Quality of ESG Disclosure	
<b>Sustainable Finance (Amount Outstanding; \$mm)</b>	
<b>Environment</b>	
Reports Scope 1,2,3 GHG Emissions	
GHG Emissions Intensity	
Water Stress	
Power Consumption	
Renewable Power Use	
Toxic Emissions Management	
GHG Emissions Reduction Plan	
Clean Revenue	
Clean Technology Opportunities	
Significant Environmental Spills	
Significant Environmental Fines	
<b>Commitment to Net Zero</b>	
Net Zero Status	
Net Zero Target Year	
Interim Targets	
Company Claims Science-Based Emissions Targets	
Carbon Offsets	
Company Aligns with UN SDGs	
Implied Temperature Rise	
<b>Social</b>	
Safety Record	
Workforce Diversity	
Female Executives	
Community Spend and Involvement	
First Nations Relationships	
<b>Governance</b>	
Executive Compensation	
ESG Goals tied to Executive Compensation	
Capital Allocation Policy	
Related Party Transactions	
Board of Directors Quality	
Board Independence	
Female Representation on Board	
Overloaded Board	
<b>Controversies</b>	
<b>Key ESG Factors for Engagement with Management</b>	

*Note: For illustrative purposes only and may not be representative of all the factors we consider.*



**METRICS AND  
TARGETS**



The majority of Beutel Goodman's carbon footprint (Scope 3 GHG emissions) is our investment portfolios. We use several metrics to measure the climate-related risks of our investments:

- Economic Emissions Intensity
- Weighted Average Carbon Intensity (WACI)
- Climate Value-at-Risk
- Implied Temperature Rise
- Percentage of Clean Revenue and Clean Capital Expenditures

These metrics are a tool to measure the climate-related risks and opportunities in our investment portfolios. The analysis helps us assess a company's net-zero commitments, carbon intensity and clean technology opportunities and their impact on long-term value. We also use these metrics to inform our engagements. Companies with the largest WACI and emissions intensity are targeted for priority engagements due to the elevated risks and opportunities to the companies' long-term financial sustainability. For customized strategies that have commitments to net zero by 2050 and interim targets, the metrics help us measure progress.

We also review our investments for other climate-related risks such as biodiversity, water stress, land reclamation, significant spills and fines, as well as climate-related controversies and hazardous waste.



While the metrics we employ allow us to compare and contrast the companies we invest in, we recognize that metrics present challenges. The primary issue is with the data itself. While improving, disclosure of climate-related data is still disparate. According to a report by MSCI, fewer than 40% of MSCI ACWI Investable Market Index constituents reported Scope 1 and 2 emissions and fewer than 25% of MSCI ACWI IMI constituents reported Scope 3 GHG emissions.<sup>xv</sup> Gaps and uncertainty in data remain. The lack of historical emissions data is also a problem as it makes measuring progress and comparability a challenge. The work being done by regulators, industry groups such as TCFD, and investors should help fill the disclosure gap over the coming years. We also look forward to standardization of disclosures to allow for comparability across companies and sectors, as well as audited metrics to improve the level of data confidence.

Aggregating a portfolio-level carbon footprint may not always be possible, especially in fixed income. Stand-alone debt issuers tend to lag their equity issuing peers in terms of disclosure. Additionally, some data services may link an operating company's emissions data (if not disclosed separately, which is not often the case) to the holding company's emissions data. This generally overstates the operating company's carbon footprint and risks double counting if an investment portfolio owns both the holding company and operating company debt.

There are also some challenges with sovereign GHG emissions data when trying to capture the carbon footprint of a fixed income portfolio. For example, when measuring intensity, corporates tend to use revenue or enterprise value. However, a sovereign's intensity is typically based on GDP, which makes calculating the carbon footprint for an entire fixed income portfolio challenging. For now, we are only calculating the carbon footprint for corporates, but we do track GHG emissions for sovereigns, provincials and municipals, and monitor legislation and commitments. We also note the lag in terms of sovereign emissions reporting. For example, the last year that Canada released GHG emissions data (according to Statistics Canada) was 2019.

Scope 3 emissions are also problematic due to issues of comparability, coverage, transparency and reliability. Scope 3 emissions are not widely reported and estimates of Scope 3 emissions vary significantly. Another problem is the double counting of emissions. One company's Scope 3 emissions can overlap with another's Scope 1 emissions. For example, the Scope 1 emissions of a power generator are the Scope 2 emissions of an electrical appliance user, which are in turn the Scope 3 emissions of both the appliance manufacturer and the appliance retailer. Categories can also be double counted within Scope 3; for example, if two companies account for third-party transportation of goods between them. However, even with these issues, Scope 3 is relevant as for some companies, the vast majority of their carbon footprint is Scope 3.

## Economic Emissions Intensity

Economic emissions intensity is a climate impact indicator defined as the absolute emissions associated with investments normalized for the total size of assets under management. This is the calculation recommended by the Partnership for Carbon Accounting Financials (PCAF). Economic emissions intensity helps investors understand the climate impact of the organization's investment activities. It also helps to demonstrate how the emission intensities of different portfolios (or benchmarks) compare to each other per monetary unit. We note that MSCI refers to the economic emissions intensity metric as financed emissions intensity.

**Figure 16. Calculation of Economic Emissions Intensity**

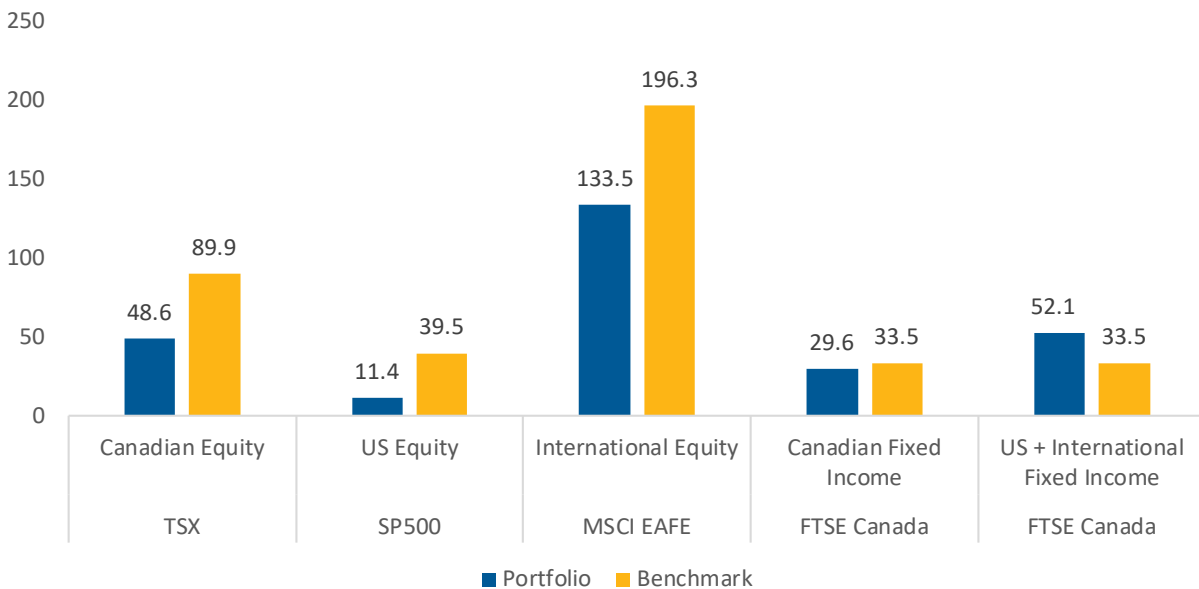
$$\text{Economic emission intensity} = \sum_i \frac{\frac{\text{Outstanding amount}_i}{\text{Investee company's EVIC}_i} \times \text{Investee company's emissions}_i}{\text{Total outstanding amount or assets under management (AuM)}}$$

Source: Partnership for Carbon Accounting Financials

Note: EVIC is defined as the sum of the market capitalization of ordinary shares at fiscal year-end, the market capitalization of preferred shares at fiscal year-end, and the book values of total debt and minorities' interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values.<sup>xvi</sup>  
 Note: the company's emissions are Scope 1, 2 and 3. If Scope 3 emissions are not reported by the company then MSCI estimates the emissions based on the Greenhouse Gas Protocol framework using top down (revenue intensities) and bottom up (company specific information) tools.

A challenge when using this metric is that it does not consider climate scenarios, company targets, low carbon opportunities or sustainable finance. In addition, changes in underlying companies' market capitalization can be misinterpreted, as market movements can create significant changes in the footprint measure that are unrelated to actions to reduce emissions. This challenge applies to all metrics that use EVIC in their calculations.

**Figure 17. Economic Emissions Intensity by BG Asset Class versus Benchmark**



Source: MSCI ESG Manager, Beutel Goodman. As at December 31, 2022.



## Weighted Average Carbon Intensity (WACI)

WACI is a climate risk indicator used to measure a portfolio's exposure to carbon-intensive companies, expressed in metric tonnes of CO<sub>2</sub>e/\$M per revenue.

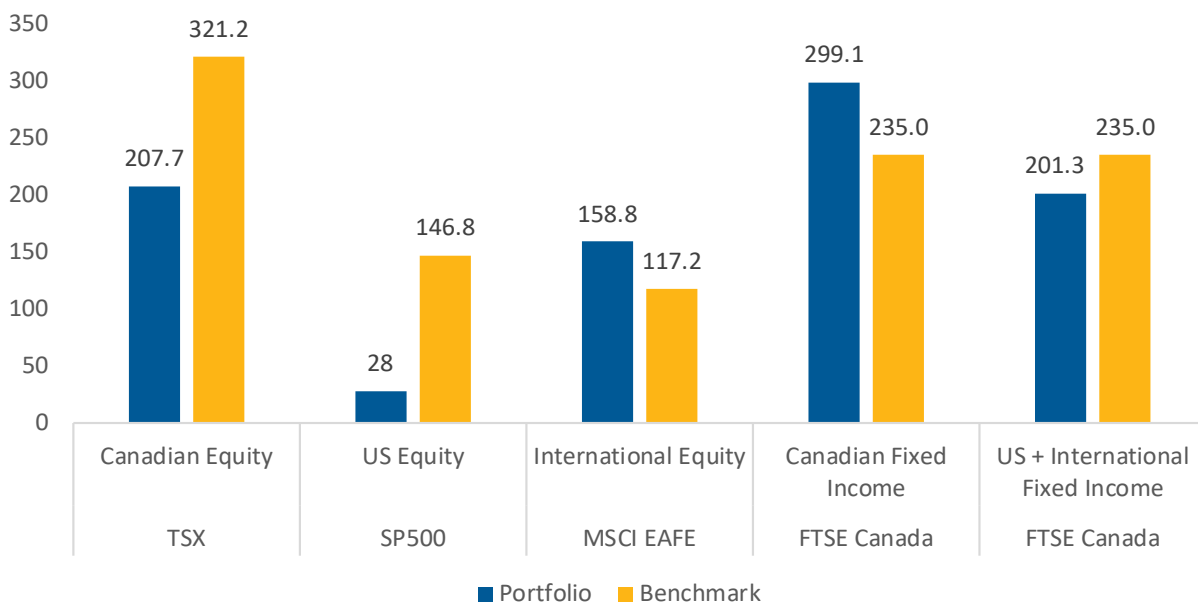
**Figure 18. Calculation of WACI**

$$\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{issuer's \$M revenue}_i} \right)$$

Source: MSCI

This metric normalizes for size and allows for comparability not only across portfolios, but also against benchmarks. It also helps to mitigate any significant changes in absolute GHG emissions due to a company's strategy (i.e., merger, acquisition, divestiture). While this metric is fairly simple to calculate and communicate, it is a point-in-time measure and therefore is sensitive to end dates and does not take into account any of the company's future actions to reduce its carbon footprint. In addition, WACI does not capture the investor's responsibility for GHG emissions like the economic emissions intensity metric does. On a company-by-company basis, this metric is useful for identifying companies with a large carbon footprint that may be exposed to potential stranded asset risk.

**Figure 19. WACI by BG Asset Class versus Benchmark**

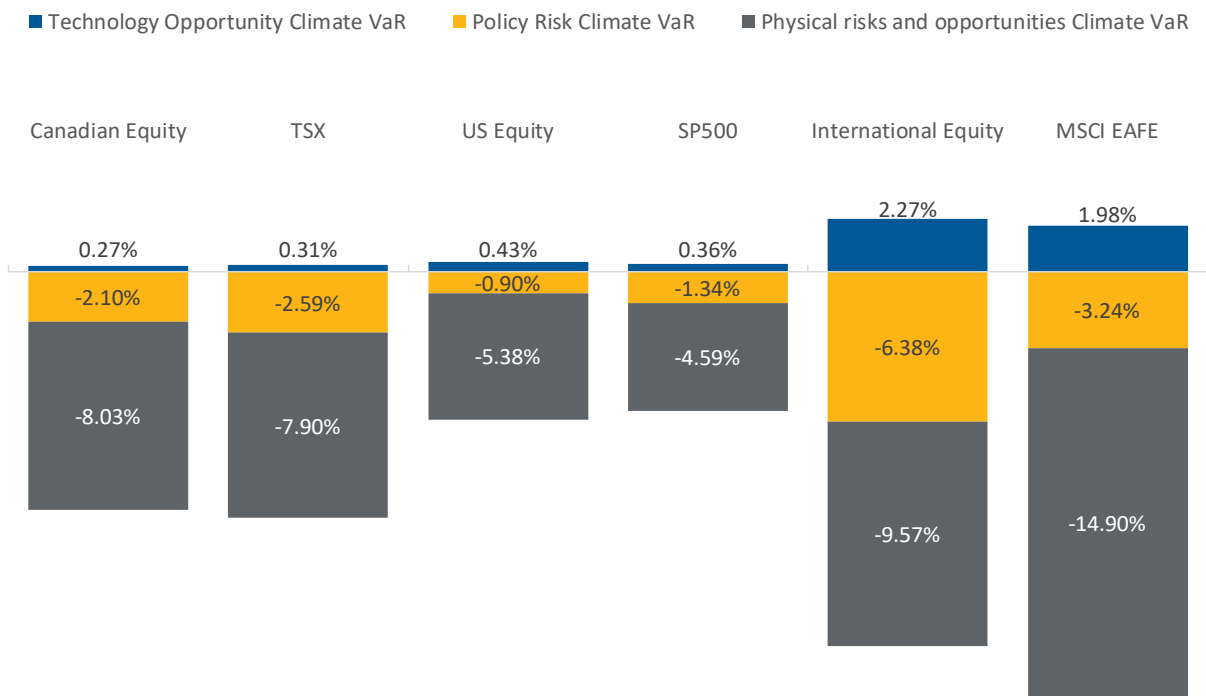


Source: MSCI ESG Manager, Beutel Goodman. As at December 31, 2022.

## Climate Value-at-Risk (CVaR)

CVaR aims to assess potential financial sensitivity to climate-related risks and opportunities. The metric is forward-looking and assesses both the transition and physical risk for a company and/or portfolio. The calculations are complex and require many methodological choices and assumptions. We use MSCI’s methodology and tools for calculating the CVaR of our companies and our investment portfolios. MSCI calculates the present value of aggregated future policy risk costs, technology opportunity profits, extreme weather event costs, and profits expressed as a percentage of the portfolio’s market value. The metric is used as a risk-measurement tool as it estimates the risk of loss for investments. The metric does not consider climate risk management and is sensitive to changes in a company’s market value and cost of capital.

**Figure 20. Climate Value-at-Risk for BG Equity Asset Classes versus Benchmark**



Source: MSCI ESG Manager, Beutel Goodman. As at December 31, 2022.

Note: For illustrative purposes we used the NGFS below 2°C scenario whereby the stringency of climate policies are gradually increased giving a 67% chance of limiting global warming to below 2°C.

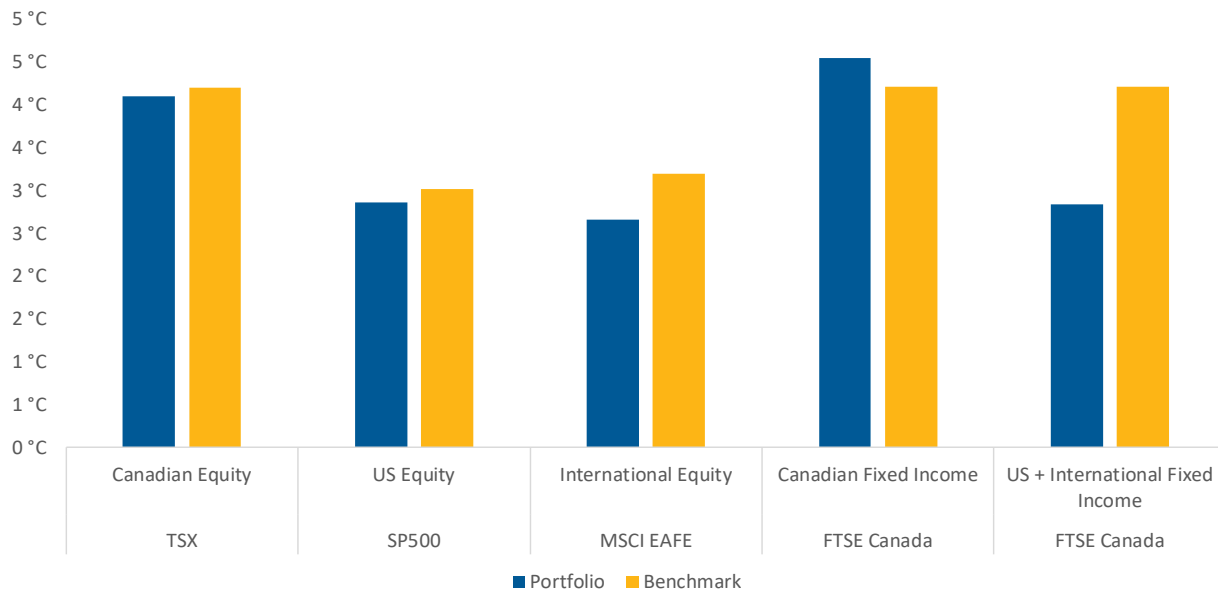
For the above example, we measure only the equity portfolios for illustrative purposes. The MSCI CVaR model assesses risk at the security level, including each individual bond. The model assumes equities exist in perpetuity and models projections to the year 2100. Bonds are modelled to their maturity date assuming that they will not be exposed to the same transition and physical risk as the equity of the same issuer for the same time period. The CVaR for a fixed income portfolio is therefore significantly less than that for an equity portfolio.

## Implied Temperature Rise

Carbon footprints rely on historical and backward-looking data, limiting their applicability for forward-looking scenario analysis. The Implied Temperature Rise (ITR) attempts to estimate a global temperature rise associated with the GHG emissions of a company, expressed as a numeric degree. Again, we use MSCI to calculate the ITR for individual companies as well as on a portfolio basis. MSCI estimates the global rise in average temperature by 2100 and later if the global economy were to overshoot (or undershoot) its remaining carbon budget to the same extent as the company or portfolio in question. MSCI uses Scope 1, 2 and 3 GHG emissions in its calculations.

Similar to CvaR, the ITR is a complex calculation that is sensitive to its multiple assumptions. While attempting to use forward-looking data disclosed by a company, there are limitations in factoring in technological or strategic change. We use this metric as one of our tools to help determine where the company is in its decarbonization plans.

**Figure 21. Implied Temperature Rise for BG Asset Classes**



Source: MSCI ESG Manager, Beutel Goodman. As at December 31, 2022.

With the exception of our sustainable bond strategy or custom client mandates, Beutel Goodman has not set carbon intensity targets at the firm level nor at the investment portfolio level. We will continue to evaluate potentially setting targets in the future. We believe it is important for any commitment to net zero by 2050 in our investment portfolios to be serious, thoughtful and measurable, as well as in accordance with our value investing style and client commitments.

<sup>i</sup> Nationally determined contribution (NDC): Submissions by countries that have ratified the Paris Agreement which presents their national efforts to reach the Paris Agreement's long-term temperature goal of limiting warming to well below 2°C. New or updated NDCs are to be submitted in 2020 and every five years thereafter. NDCs thus represent a country's current ambition or target for reducing emissions nationally.

<sup>ii</sup> "The Closing Window", *UN Environmental Programme Emissions Gap Report 2022*, 2022.

<sup>iii</sup> Carbon neutrality is achieved when an actor's net contribution to global CO<sub>2</sub> emissions is zero. Any CO<sub>2</sub> emissions attributable to an actor's activities are fully compensated by CO<sub>2</sub> reductions or removals exclusively claimed by the actor, irrespective of the time period or the relative magnitude of emissions and removals involved.

<sup>iv</sup> Beutel Goodman serves as the sub-investment manager to the BA Beutel Goodman US Value Fund, a sub-fund of Brown Advisory Funds plc, an undertaking for collective investment in transferable securities (UCITS), domiciled in Ireland, which is distributed by Brown Advisory LLC.

<sup>v</sup> CDP: "Major Risk or Rosy Opportunity: Are Companies Ready for Climate change?", 2019.

<sup>vi</sup> Munday, Paul, Amiot, Marion and Sifon-Arevalo, Roberto, S&P Global Ratings: "Weather Warning: Assessing Countries' Vulnerability to Economic Losses from Physical Climate Risks", April 27, 2022.

<sup>vii</sup> "World Metrological Organization Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970 – 2019)", *WMO-No.1267*, 2021.

<sup>viii</sup> IPCC, 2022: "Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change" [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844.

<sup>ix</sup> The International Energy Agency: "Net Zero by 2050 A Roadmap for the Global Energy Sector", October 2021.

<sup>x</sup> "Net Zero Investment Framework Implementation Guide", *The Paris Aligned Investment Initiative, Version 1.0*, March 2021.

<sup>xi</sup> Ibid.

<sup>xii</sup> "Missing the Mark 2022: Analysis of Global GDP Temperature Ratios", *Climate Disclosure Project*, September 2022.

<sup>xiii</sup> Ibid.

<sup>xiv</sup> <https://climateactiontracker.org/countries/canada/>

<sup>xv</sup> Borken, David: "Reported Emission Footprints: The Challenge is Real" MSCI Research, March 9, 2022.

<sup>xvi</sup> Partnership for Carbon Accounting Financials (PCAF): "The Global GHG Accounting and Reporting for the Financial Industry", November 2020.

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The information provided is as of December 31, 2021. Beutel Goodman has taken reasonable steps to provide accurate and reliable information. Beutel Goodman reserves the right, at any time and without notice, to amend or cease publication of the information.

Please note Beutel Goodman’s ESG and responsible investment approach may evolve over time. This report refers to progress made during the calendar year 2021 and our approach as of December 31, 2021. Also note that the integration of ESG and responsible investment considerations does not guarantee positive returns. Past performance does not guarantee future results.

For more information on our approach to ESG and Responsible Investing, please visit <https://www.beutelgoodman.com/about-us/responsible-investing/>.

Certain portions of this document may contain forward-looking statements. Forward-looking statements include statements that are predictive in nature, that depend upon or refer to future events or conditions, or that include words such as “expects”, “anticipates”, “intends”, “plans”, “believes”, “estimates” and other similar forward-looking expressions. In addition, any statement that may be made concerning future performance, strategies or prospects, and possible future action, is also forward-looking statement. Forward-looking statements are based on current expectations and forecasts about future events and are inherently subject to, among other things, risks, uncertainties and assumptions which could cause actual events, results, performance or prospects to be incorrect or to differ materially from those expressed in, or implied by, these forward-looking statements.

These risks, uncertainties and assumptions include, but are not limited to, general economic, political and market factors, domestic and international, interest and foreign exchange rates, equity and capital markets, business competition, technological change, changes in government regulations, unexpected judicial or regulatory proceedings, and catastrophic events. This list of important factors is not exhaustive. Please consider these and other factors carefully before making any investment decisions and avoid placing undue reliance on forward-looking statements. Beutel Goodman has no specific intention of updating any forward-looking statements whether as a result of new information, future events or otherwise.

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