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Manulife Investment Management

Stewardship report 2022

What you'll *find*

All information in this report is as of December 31, 2022, unless otherwise indicated.

A *message* from Paul R. Lorentz

I'm pleased to share the third annual comprehensive stewardship report for Manulife Investment Management. It was a busy year in terms of our stewardship activities, and the full spectrum of our efforts across asset classes and regions is outlined in this report.

Of foremost significance, we deepened our commitment and broadened our engagement efforts around nature and biodiversity. In the spring of 2022, we published our nature statement, in which we articulate our commitment to assess and manage nature-related risks and opportunities across our investments. Over half the world's total GDP—about $44 trillion of economic value generation—is moderately or highly dependent on nature and its services. In appreciation of the depth of this dependency, we continued our work with the Finance for Biodiversity Pledge and the Taskforce on Nature-related Financial Disclosures (TNFD). Through the former, we've committed to collaborating and engaging with companies on biodiversity and assessing our own biodiversity impact. And through the latter, we participate in the TNFD Forum, a multidisciplinary pool of technical experts available to help develop what will be a globally influential, nature-focused disclosure framework.

In 2022, we were also busy across regions responding to developments in standards setting and regulation. We provided feedback to the Canada Securities Association (CSA) on amended standards of disclosure concerning activities by mining issuers. As part of this effort, we collaborated with other investors through the Portfolio Management Association of Canada (PMAC), highlighting the need for miners to disclose information regarding their relationships with indigenous peoples. In June, we responded to a watershed proposal by the U.S. Securities and Exchange Commission (SEC) to standardize greenhouse gas (GHG) emissions disclosure. Further, in ongoing collaboration with the Emerging Markets Investor Alliance (EMIA), we have the opportunity to articulate to governments the need for budget transparency, which may help promote better pricing in sovereign debt markets.

We continued to strive to meet our clients' and beneficiaries' needs through an expansion of our sustainable product offering. Highlights include the launch of our climate bond strategy, a sustainable Asia equity strategy, and the Manulife forest climate strategy.

We believe a commitment to transparency in disclosure is one of the hallmarks of good stewardship. We hope the present report demonstrates this across our global asset management business. We also hope you find it a useful guide to the work we perform on behalf of our clients.

Paul R. Lorentz
President and CEO
Manulife Investment Management

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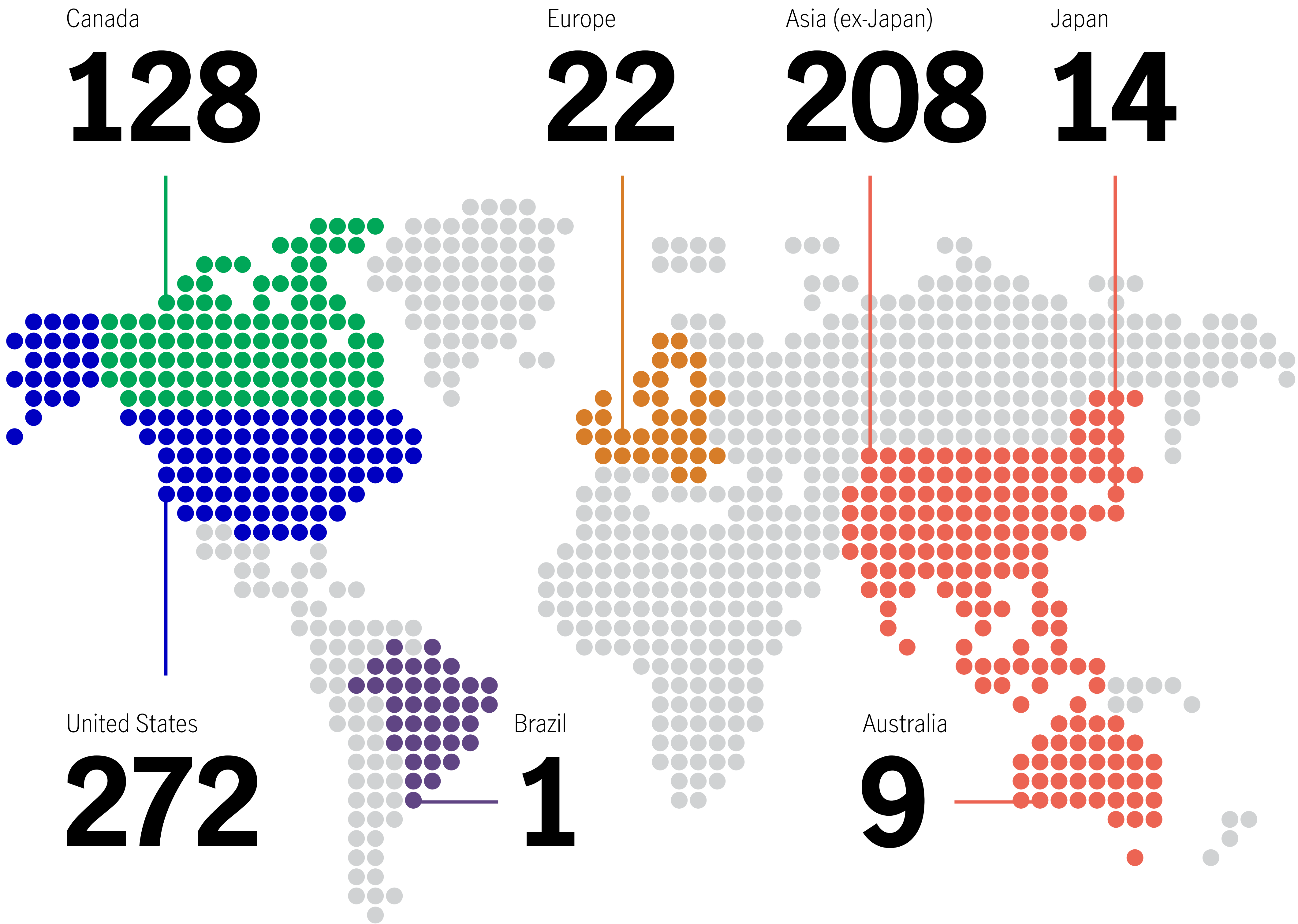
Combining local insight with global reach

More than 600 investment professionals, with offices in 19 geographies



Source: Manulife Investment Management, as of December 31, 2022. Manulife Investment Management's global investment professional team includes expertise from several Manulife Investment Management affiliates and joint ventures; not all entities represent all asset classes.

$600B in AUM

1,000+ institutional accounts

Assets under management (AUM) include assets internally managed by Manulife Investment Management on behalf of external clients, the Manulife general account and other affiliated businesses, but excludes assets under management and administration (AUMA). The methodologies used to compile the total AUM are subject to change and may not reflect regulatory AUM as reported on certain affiliates' Form ADV. Manulife Investment Management AUMA is as of December 31, 2022, and includes CAD$598.9 billion in AUM and CAD$0.7 billion in AUA.

AUM by asset class

AUM in CAD$ millions

Fixed income
239,720

Multi-asset solutions
182,586

Alpha-focused equity
133,215

Real estate
27,123

Private equity and credit
20,987

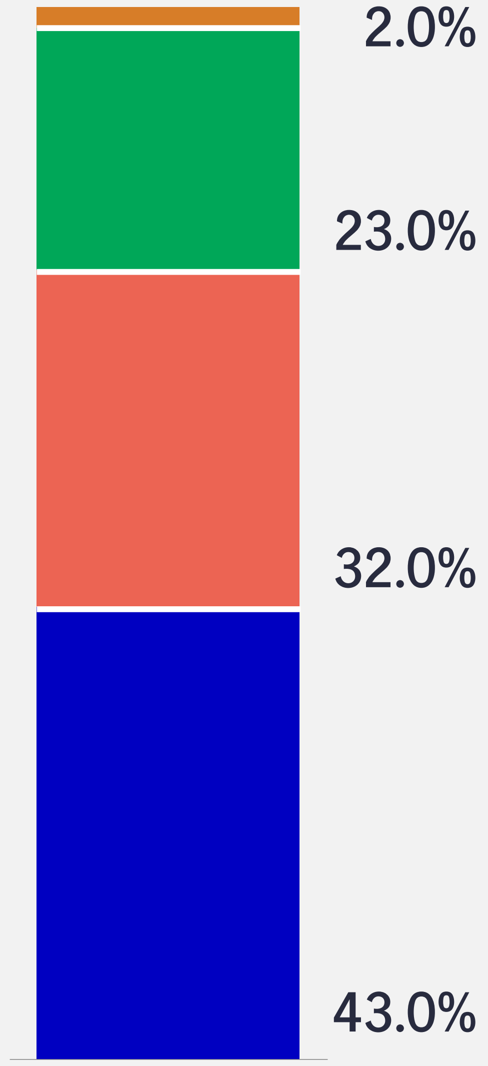
Infrastructure
17,824

Timberland
14,433

Agriculture
5,841

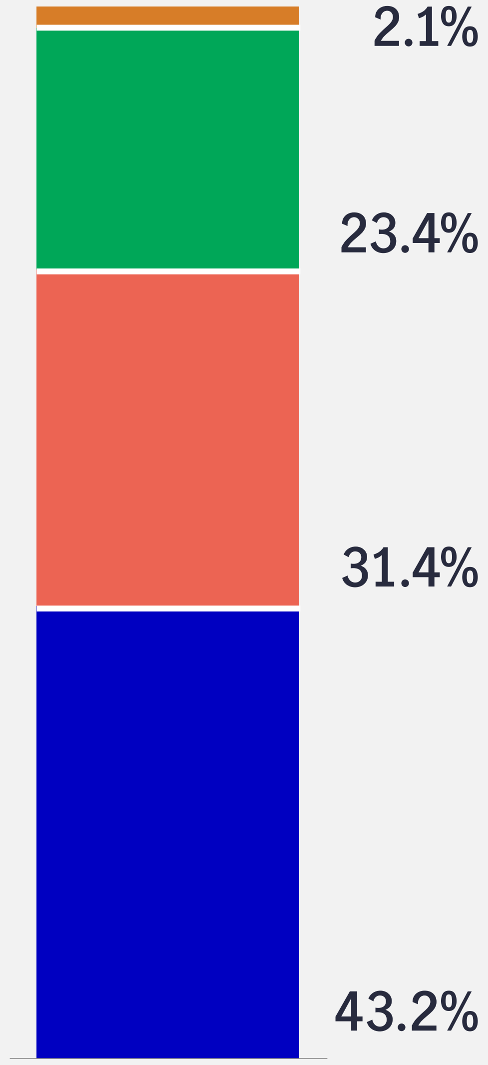
Source: Manulife Financial Corporation, as of December 31, 2022. Excludes subadvised assets under management (AUM). Assets are shown in Canadian dollars. **Fixed income:** AUM excludes liability-driven investing (LDI) assets and includes certain equity and fixed-income portions of balanced investments. **Multi-asset solutions:** AUM includes CAD$3.5 billion in nondiscretionary advice for the Manulife general account by the multi-asset solutions (MAST) index team, and CAD$3.9 billion in external clients' AUM advised by the MAST LDI team, but these funds are managed by other Manulife Investment Management desks. **Alpha-focused equities:** AUM includes certain equity and fixed-income portions of balanced investments. The methodologies used to compile the total AUM are subject to change. **Real estate:** The real estate equity team manages $1.2 billion in AUM on a discretionary basis; AUM is reported on a fair value basis. The methodologies used to compile the total AUM are subject to change and may not reflect regulatory AUM as reported on certain affiliates' Form ADV. **Timberland:** Represents assets of Manulife Investment Management's timberland group managed on a discretionary and nondiscretionary basis for the general account, its affiliates, and third-party clients. **Agriculture:** Represents assets of Manulife Investment Management's agriculture group managed on a discretionary and nondiscretionary basis for the general account, its affiliates, and third-party clients.

AUM for private market asset classes: All AUM is calculated on a fair value basis. Data includes assets managed by Manulife Investment Management and our affiliates on behalf of Manulife's Canadian and U.S. general accounts, as well as certain third-party investors. Investment advisory services to third-party investors and certain affiliated investors are offered by Manulife Investment Management Private Markets (US) LLC (Manulife IM PM (US)) a U.S. Securities and Exchange Commission registered investment adviser with $48.7 billion in AUM.



Client AUM by market

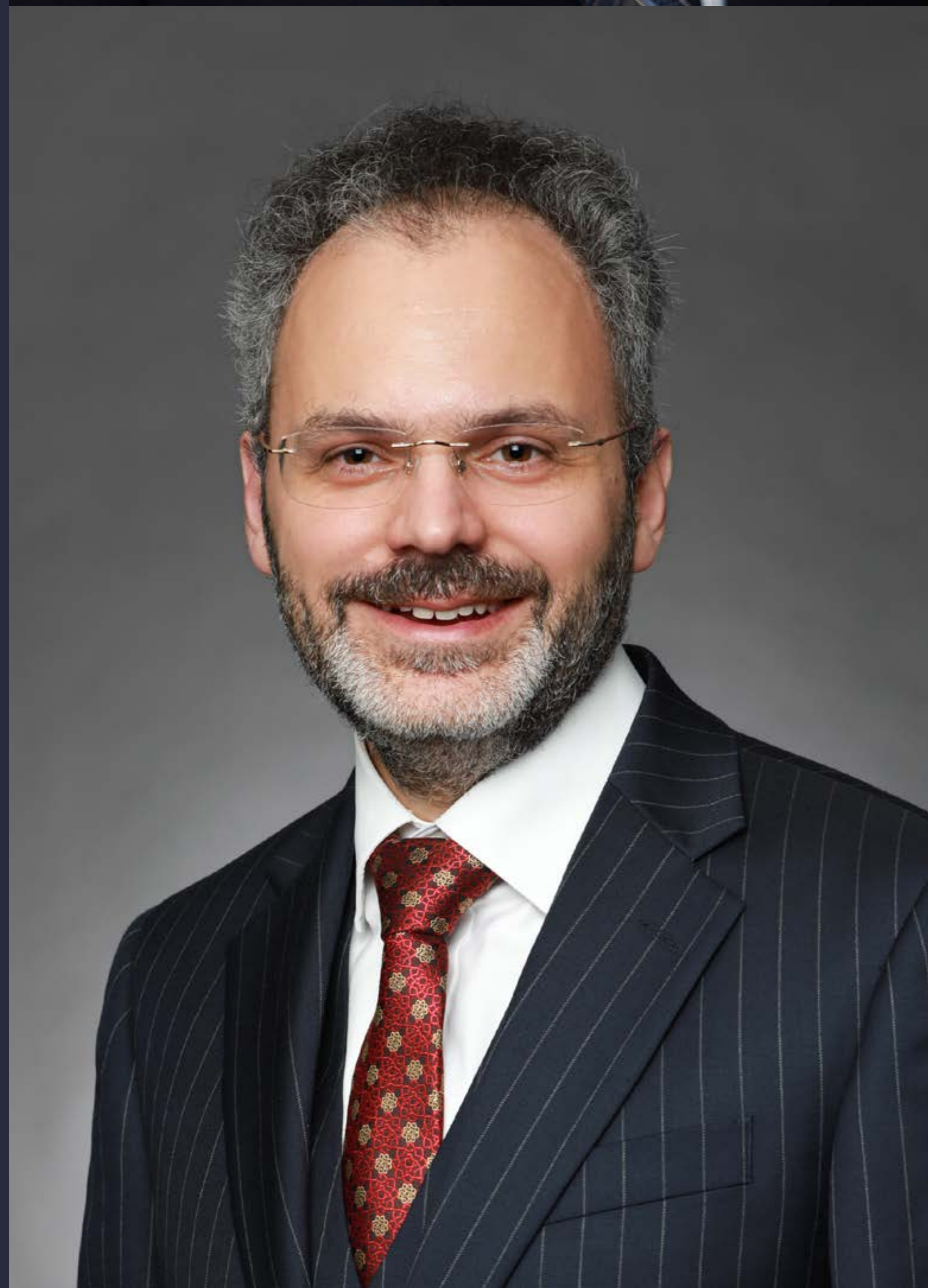
- Europe (includes EMEA and Barbados)
- Canada
- Asia Pacific (includes India and Australia)
- United States



Client domicile by market

- Europe (includes EMEA and Barbados)
- Canada
- Asia Pacific (includes India and Australia)
- United States

Totals may not sum to 100 due to rounding.



Marketwide stewardship for sustainable outcomes

Brian Kernohan
Chief Sustainability Officer,
Private Markets

Peter Mennie
Chief Sustainable Investment Officer,
Public Markets

We face major systemic challenges. In this discussion, we set out how we think about our role in addressing those challenges and how doing so fits into our responsibilities as an asset manager.

Systemic risks are risks that are so material that they threaten the continued smooth and sustainable operation of the economy, our society, and even the planet. Many of the systemic issues we face today have their origins in environmental or social issues. In regard to both climate change and nature loss, the scientific evidence of systemic risk is overwhelming, and there's virtual unanimity in the global scientific community that we look no further than ourselves to find the cause of these risks. The connection between these risks and the health of the economy has also been clearly established, most recently by the Dasgupta Review in relation to biodiversity loss. This has resulted in wide recognition by central banks and financials sector regulators that climate change and biodiversity loss are risks that threaten the stability of the global financial system. This scientific and regulatory consensus has also led to broad agreement among global leaders that these risks are among the most severe risks the world faces over the next 10 years.

What is to be done about environmental systemic risks?

A major challenge with systemic risks is getting a consensus to tackle them swiftly. It's human nature—and a political problematic—to call for more evidence before acting to promote far-reaching change. Some will argue that the overall impact several years out will always be subject to a degree of uncertainty. Others will even suggest that it's better for each company they invest in to leave it to others to resolve and remain content that inaction might be financially advantageous in the short term. But avoidance and myopia are most likely to only speed the materialization of environmental systemic risks.

As investors, we're aware that in addition to assessing the immediate and clear risks we face, we must also assess the knock-on, second- and third-order effects that we can't avoid through diversification and that could carry significant consequences. While we can never be absolutely sure of the future, we're used to assessing the knowns and unknowns and making reasoned judgments. As an illustration, we can be relatively confident of the first-order impact of climate change; for example, a facility by the shoreline in an area with rising sea levels is exposed to substantial physical risk from rising seas. But it can be far more difficult to predict the knock-on effects of climate change: Some parts of the globe may be rendered uninhabitable through desertification and persistent flooding; that makes significant migration a likely fallout, and the systems that support people, companies, and communities are likely to come under significant strain.

It's this type of feedback loop in which the initial impact is supplemented and magnified that makes it systemic. The proliferation of known and unknown risks becomes so complex and challenging to predict that it leads to our conviction that we need to act in a systematic and structured way to prevent a negative feedback loop from starting. Our approach to systemic risks stems from our conviction that it's strongly in the interests of our clients that we act to try and avoid, or weaken, the materialization of those risks as swiftly as possible by using levers at our disposal.

As investors who bear a fiduciary duty to our clients, we believe these systemic risks are highly relevant for the financial health of our clients' portfolios and the long-term preservation of capital. But it's exceptionally difficult—and perhaps impossible—to construct a portfolio that completely diversifies away the impact of environmental systemic risks. The potential impact of these risks is far reaching, and their feedback loops could drive unpredictable additional effects that could be unavoidable in the context of a broad portfolio. This is precisely why central banks are taking action—the European Central Bank, for example, has outlined a detailed climate action plan and acknowledges the "need to assess how climate change and the transition to a carbon-neutral society affect our economy, so that we can account for their influence on our work as a central bank and banking supervisor."

What we mean by marketwide stewardship

Historically, most engagement activities with companies were one-to-one activities focusing on managing risks and opportunities at the enterprise level. This included encouraging companies to manage the implications of systemic risks and to act responsibly, for example, by promoting energy efficiency and reducing GHG emissions and encouraging risk assessment; however, it's now clear that this isn't enough. We believe, therefore, that we must tackle these challenges through stewardship activities focused on addressing systemic risk. As an investment manager, we consider this marketwide stewardship part of our fiduciary obligation.

Over the past years, we and other investors have worked together in a coordinated approach to engagement on climate issues where necessary, and it's something we've committed to as a global asset manager. We're also acutely aware of the importance of managing and trying to reverse nature loss alongside work to address climate-related issues. We know that both of these sources of risk carry severe implications for asset prices, credit conditions, and global economic stability. Therefore, we can support climate mitigation and adaptation along with reversing nature loss by, as examples, encouraging the development of the TNFD, signing the Finance for Biodiversity Pledge, and committing to actions through our business activities.

We not only engage with investee companies, but we also look to encourage a more resilient operating environment for our investments. We believe we can achieve this across multiple pillars of action. We collaborate with regulators and governments to encourage sustainable outcomes for environmentally affected populations and ecosystems. We work with standards-setting bodies and expert groups in an effort to create the most efficient language, metrics, and targets possible to measure climate and natural capital-related risk and performance and then encourage adoption of those frameworks. We engage with environmental, social, and governance (ESG) data vendors on ratings methodologies to ensure accurate and comprehensive data sets. We also believe it's incumbent on us to do our best to offer education to our investor stakeholders, from individuals to institutions, around sustainability principles and practices. Many of these activities are supported through collaboration with investor peers.

In the following sections, we describe the risks we're trying to manage, give a flavor of our work, and point to areas we might seek to address in the future.

Marketwide stewardship helps foster the regulatory and disclosure standards we need for a sustainable future

	Focus	Potential outcome
Encouraging development of robust regulation	Shaping regulatory frameworks intended to help manage systemic environmental risks and/or encourage sustainable investment	Well-structured, well-designed regulation that effectively manages systemic risks can reduce macroeconomic and portfolio risk
Building global standards	Providing investor viewpoints and expertise on the development of robust sustainability standards	Comprehensive, but also cost-efficient, disclosures that reduce uncertainty for investors
Collaborating to address systemic issues	Working with peers to influence systemically important actors	More efficient interaction and representation of a wide group simultaneously
Improving the data environment	Encouraging data providers to expand coverage and improve the breadth and quality of data	More effective metrics to demonstrate impact and materiality enable a better assessment of performance and both realized and potential outcomes
Building sustainability literacy	Educating stakeholders on sustainability principles, practices, and developments	Deeper client and investor understanding results in more effective deployment of capital

Source: Manulife Investment Management, 2023.

In what follows, we highlight selected examples of engagement that, when taken together, exemplify our strategy of marketwide stewardship. This is how we seek to move the dial on managing, mitigating, and adapting to different types of systemic ESG risks. For the full and most up-to-date list of our engagements, readers can refer to the appendix of this stewardship report.

1 Encouraging development of robust regulation

Coming out of the UN Biodiversity Conference meeting of the Conference of Parties to the Convention on Biological Diversity (CBD COP 15) in December last year, we saw broad consensus and understanding regarding the overall benefits to the economy from nature and the fact that our broad level of overconsumption is currently beyond regenerative levels.[1] Nature—including ecosystem services as elemental as water, soil health, and pollinators—are woefully undervalued. These forms of natural capital can even be negatively priced, a perverse market-based assessment that's in dire need of correction.

Governments, however, must now respond through policy development so that companies and investors will be incentivized to act in the right way to preserve the natural environment. As an example, the European Union has acted to prohibit the sale of certain commodities linked to deforestation, which should cause companies to scrutinize their supply chains and encourage more sustainable sourcing practices. The U.S. Inflation Reduction Act of 2022 aims to address several marketwide risks, including emissions reductions, reducing the cost of healthcare, and strengthening taxpayer compliance to fund these and similar risks.

In our role as investment manager, we believe it's important that we encourage these developments and provide feedback to regulators to strengthen the policy frameworks that will protect investments over the long term for our clients. This is why we continue to engage with governments directly and through collaboration. In 2022, for example, we signed the Global Investor Statement to Governments on the Climate Crisis. This statement calls on governments to take specific actions to address the climate crisis, including adoption of 2030 nationally determined contributions in line with the goals of the Paris Agreement, acceleration and dissemination of technologies that enable the transition to net zero, and scaling up the provision of green finance. In Japan, we've been fortunate to work with peers and several different government ministries on positive outcomes, including the creation of green bond guidelines and a road map for promoting transition finance across seven sectors—iron and steel, chemicals, energy, gas, oil, pulp and paper, and cement.

2 Building global standards

Governments, however, don't need to start at the drawing board to build standards of practice and disclosure. Third-party standards setters such as the International Sustainability Standards Board (ISSB), for example, pave the way for regulatory frameworks. It remains important for us, therefore, to engage with these standards setters as preregulators and to encourage early action from systemically important actors.

1 See, for example, "State of Finance for Nature: Tripling investments in nature-based solutions by 2030," United Nations Environment Programme, World Economic Forum, Economics of Land Degradation Initiative and Vivid Economics, 2022. More than half of the world's total GDP is moderately or highly dependent on nature. Agriculture, food and beverages, and construction are the largest sectors that are dependent on nature, and these generate US$8 trillion in gross value added.

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Compared with action and disclosure on climate risk, for example, we're at a much earlier stage of development for nature. To that end, one of our most urgent engagements on standards setting concerns nature-related risk disclosure and accounting for natural capital. Through both our support of the TNFD and our contribution to the committees of the Finance for Biodiversity Pledge, we've worked with peers to define what we believe will be effective frameworks for disclosure and action around nature-related risks, such as biodiversity loss and natural capital degradation.

There have been many challenges to establishing a global framework for this disclosure and behavior, including, first and foremost, defining what nature-positive behavior looks like. Our work with colleagues at the World Business Council for Sustainable Development (WBCSD) is advancing what it means to contribute to a nature-positive world. In addition, contributors to this effort have been busy devising technical standards and activities that further develop nature-related accounting methods, as well as publishing prototype standards that adequately address the need for comprehensive and comparable data on nature-related risks.

We believe that with the support of market uptake and regulation, disclosure frameworks with well-designed metrics and targets for nature-related risks could act as a powerful corrective to corporate, sovereign, and investor behavior that continues to undervalue nature.

3 Collaborating to address systemic issues

We work to spur action to address systemic risks by collaborating with peers to engage systemically important and influential issuers. While voluntary and regulatory frameworks are a strong catalyst for action, they're frequently not sufficient alone. Not only does such positive action from large operators reduce systemic risk, but it also acts as a catalyst for entire industries to follow suit.

One of the most significant of these engagements has been our work as a founding member and an engagement lead within the Climate Action 100+ initiative. Now in its second five-year phase for engaging with the world's largest GHG emitters, the initiative helps bring together a critical mass of investors, representing $68 trillions in assets under management (AUM), who share the objective of ensuring the world's largest corporate GHG emitters take action on climate change.

The initiative has made strides, as evidenced by corporate commitments for transition-related target setting, board oversight of transition progress, and the fact that 91% of focus companies were aligned with the TCFD recommendations as of December 2022. Climate Action 100+ continues to encourage 168 systemically important issuers to progress toward a net zero future. We continue to believe this collaborative engagement is one of the most powerful global expressions of stewardship activity focused on this systemic risk.

4 Improving the data environment

The global financial system doesn't yet have the comparable, consistent, and reliable data sufficient to enable market participants to correctly price sustainability risks and opportunities. That said, we've seen some acceleration of policy recently with the SEC acting on climate disclosure requirements. The market needs accurate, comparable, and consistent data to price in sustainability risks and opportunities and encourage capital flows to the investments that could be said to be more diligent in their efforts to manage those factors. ESG data, therefore, has risen in importance as an investment tool, with broad applications inside ESG integration, stewardship practices, product development, and investment decision-making. Because this data touches all of these aspects of investing, we engage with data providers to continuously improve their provision of that information.

We engage data providers, for example, to increase the scope of market coverage, to correct erroneous data, and to consider provision of additional data points, as these improvements not only help us make better and more informed investment decisions, but they also provide needed transparency to the market as a whole. In one case, we worked with a data provider to adjust its climate risk temperature gauge model by addressing a category of scope 3 emissions that we believe was being accounted for incorrectly. We engaged another provider to highlight data sources available that demonstrate the societal impact of financial entities, such as regional banks, on small and midsize enterprises.

Each of these engagements represents an incremental improvement in the overall data infrastructure that supports sustainable investment. Ultimately, this engagement with data providers not only ensures that we can make better informed decisions for our clients, but also that the market has the right information to encourage capital flows toward the more systematic and potentially effective practitioners in the management of ESG factors.

In our work with regulators, we've frequently joined peers and industry groups in sharing our opinions on the potential benefits and blind spots of proposed regulation. A recent example was our June 2022 comment letter to the SEC in response to that body's proposed climate-related disclosure rule, in which we stated:

> "Consistent, reliable, and comparable climate data will significantly enhance our industry's ability to measure, assess, and manage climate-related risks and opportunities across client assets over the short, medium, and long term."

In our comment letter, we went on to explain how our investment teams use emissions data in due diligence with investee companies, valuation analysis, product design for climate-themed strategies, and assigning a carbon cost in financial models.

We remain mindful that regulation needs to be developed carefully to ensure that the cost of compliance is managed, that companies are genuinely able to respond to the regulation, and that measurement aligns well to investors goals. We believe that a regulatory framework that leads to the disclosure of the material impacts that companies have on the environment and society will enable investors to make better informed assessments of the risk-reward profile of those companies, and therefore to deliver more effective investment solutions to clients.

5 Building sustainability literacy

We believe that a better understanding of sustainability issues and the systemic risks they present encourages action across the value chain and therefore increases the chances of capital being effectively deployed in consideration of sustainability risks and opportunities. Sustainability literacy, like basic financial literacy, entails acquiring specific knowledge and skills, and we believe it has the potential to advance more comprehensive adoption of sustainable investing strategies given the exigencies of climate change, biodiversity loss, and other systemic risks. We know from our work with institutional and retail investors across the globe that the desire for more education in sustainability is strong, particularly as the actual impacts become more widely apparent as we continue to see climate change affecting our lives in increasingly material ways—not just in investor portfolios but also in live economic and social experiences of the world population.

Our efforts in marketwide stewardship seek to meet the growing need for sustainability training by providing education for asset owners, investors, and the broader investment community. In the past year, we launched an online educational series for Canadian investors covering sustainable investing basics with more advanced topics in development. In addition, we've highlighted some of our engagement activities through a series of sustainable investing case studies, which feature examples of our ESG integration, stewardship, and collaboration. We believe this helps our clients and other stakeholders visualize the actions we've taken and the outcomes we've achieved in the pursuit of sustainable risk-adjusted returns on a more regular and detailed basis than our annual reporting provides.

We're also currently developing a curriculum and content with a third-party education technology company that explores sustainable investing. With this platform, we hope to reach a significant number of secondary school students and adults across North America, Europe, and Asia over the next two years.

This activity is further aligned with that of our parent company, Manulife Financial Corporation (Manulife), which, as part of its impact agenda, is a founding partner and exclusive funder of the National Geographic UNESCO World Heritage site impact mapping and resiliency project. Announced in December of 2022, Manulife formed this partnership with the National Geographic Society to safeguard several historical and culturally significant heritage sites from the impacts of climate change and to protect the physical, cultural, and financial well-being of the communities that depend on those sites for their livelihood and connection to their past.

Looking ahead through the lens of marketwide stewardship

Ultimately, we're dependent on the ongoing health of the planet and the stability of our communities. It's highly unlikely that any company can insulate itself financially from substantial increases in systemic risk driven by significant global upheaval resulting from climate change, biodiversity loss, or other systemic threats we face. As investors, we believe we can help manage these risks for our clients by seeking to address their systemic challenges through multiple channels of investment stewardship. Periods of substantial uncertainty or instability are typically not positive economically, so helping address global challenges isn't just morally but also potentially financially beneficial. We encourage a regulatory environment that promotes action and wider-ranging and more comparable disclosure, and we seek to play our part in educating a wide range of stakeholders on the potentially positive effects of sustainable investing.

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Purpose, strategy, and culture

Purpose, strategy, and culture

Our purpose as an investment manager is to deliver strong risk-adjusted investment returns for our clients over time while having a positive impact on the environment and society. We believe a commitment to sustainable investing is a necessary condition for investors to be successful over all meaningful time horizons.

Our purpose is aligned with that of our parent company, Manulife, which has been focused on serving clients for over 155 years. Consequently, our effectiveness as an investment manager is judged by how well we're meeting the needs of our clients and positively affecting the lives of beneficiaries, particularly through our stewardship practices. These practices constitute a major facet of sustainable investing and involve strategies focused on our direct operations, company engagement, proxy voting, and collaborative efforts that seek to:

1. Strengthen how sustainability challenges are being addressed
2. Promote well-functioning markets

These practices are all grounded in, and made more fully possible by, our corporate culture. At Manulife Investment Management, we value and actively support the robust integration of ESG factors, otherwise known as sustainability factors, into our active ownership strategies and our investment approaches. This holds true across asset classes, geographies, and our business identities—whether we're acting as asset operators, equity holders, or debt holders.[2]

2 Each investment team operates in different markets and with different nuances to its approach to investing. Accordingly, each team integrates ESG factors into its investment process in a manner that best aligns with its investment approach.

Purpose, strategy, and culture

Our culture, values, and beliefs

As a global active investment manager, in-depth research and analysis drive our investment activities and shape our daily decisions.

With a culture steeped in careful and objective analysis, knowledge sharing, and global collaboration, we understand how sustainability principles should inform our investment practices from the bottom up.

In our view, sustainability is an important driver of financial value, while strong stewardship practices help us build strong relationships with all our stakeholders, from clients and employees to tenants, borrowers, and investment partners.

This belief manifests across the different facets of our global business, as owners and operators of private assets, equity holders, and debt holders. These different facets of our identity enhance our stewardship efforts, as they allow us to leverage fundamentally different perspectives in our daily activities.

Our beliefs support our culture of stewardship

ESG factors can have a material impact on financial value

We believe ESG factors can materially affect financial value; therefore, we integrate financially material ESG risks and opportunities into our investing process.

Active managers have a stewardship advantage

We believe active managers are well placed to manage stewardship effectively, as we're able to bring our experience to work with company management to encourage effective change. Where we own and operate assets, we believe it's our responsibility to pursue the best sustainability processes and standards for our firm, our employees, and our clients.

We believe in offering clients sustainable investing choices

We believe in offering choices to investors, from ESG integration to impact investments. A broad range of products enables investors to better meet an equally broad range of goals.

We strive to build a diverse, equitable, and inclusive culture

Across our global offices—and in alignment with the beliefs and practices of our parent company—we focus on a shared set of six core values that helps engender high employee engagement and define who we are and how we work together:

1. **Own it—**We feel empowered to make decisions and take action to deliver our mission.
2. **Think big—**Anything is possible. We can always find a better way.
3. **Share your humanity—**We build a supportive, diverse, and thriving workplace.
4. **Get it done together—**We're surrounded by an amazing team. We do it better by working together.
5. **Obsess about customers—**We predict their needs and do everything in our power to satisfy them.
6. **Do the right thing—**We act with integrity and do what we say.

We strive to live these values daily and incorporate them into our investment decision-making processes.

We value getting things done together as investment teams and believe collective action offers a powerful model for asset management. Through regular collaboration, including across asset classes and investment disciplines, we collectively work toward establishing a sense of shared and individual ownership, as well as a personal sense of involvement, as we strive to meet the needs of clients. This is how we want to operate our business for the long term: fostering a collaborative culture around meeting the needs of our clients. And we're committed to striving to always do the right thing, both by our clients and our broader stakeholders.

We value innovation and thinking big because we believe these modes of thought and action are central to the project of mitigating and adapting to systemic risks such as climate change and biodiversity loss.

We believe our culture is strong, not least because of the value we place on sharing our humanity—which is another way of saying practicing empathy and acting authentically with our colleagues.

Drawing strength from these values, our goals and efforts toward fostering better diversity, equity, and inclusion (DEI) at our firm demonstrate our commitment to our employees' health and professional growth as well as to the strength of the communities in which we live and work. We believe we're stronger when we embrace our differences and that diversity in gender, race, religion, identity, and ability plays a key role in driving innovation and growth within our company.

Our employee resource groups (ERGs), which are founded within the greater Manulife organization and include Manulife Investment Management employees, play an integral role in championing diversity and building an inclusive work environment. These voluntary networks involve employees united by a common identity, trait, or interest and are a much-used resource at the firm. They enable us to work together to address barriers to advancement and provide personal and professional development opportunities.

Our ERGs

ERG	Description
Ability	Building a culture of differently abled inclusion (visible and invisible)—for employees, families, and customers
AMP	Association of Multicultural Professionals (AMP) champions member development, promotes cultural awareness, and advocates for unity through open dialogue and events
Family	A community to share family experiences and support member challenges
GenerationNEXT	Mobilizing our young professionals to be the next generation of leaders through education, networking, and volunteerism
GWA	The Global Women's Alliance (GWA) supports and encourages the recruitment, development, and advancement of women throughout our organization by providing a network and opportunities in which women can be mentored, share experiences, and have fulfilling careers
IPTA	Indigenous Peoples and Their Allies (IPTA) aims to better enable our indigenous employees to advance professionally and have open and honest conversations while increasing the awareness of indigenous peoples for all employees
LatinX	Promoting the education and awareness about Latin American diversity and culture while demystifying myths, misinformation, and unconscious bias
Male Allies	Creates safe spaces to discuss gender issues and raise men's understanding of them and to encourage men and women to be vocal, visible role models for change
MiLE	Military Employment Community (MiLE) is building a strong network of support for all employees who are current service members, veterans, their families, and supporters
PACES	The Pan-Asian Community for Employee Success (PACES) builds the presence, influence, and leadership potential of Pan-Asian employees
PROUD	Aims to promote an inclusive workplace for lesbian, gay, bisexual, and transgender employees in order to promote their full and unencumbered contribution
Sustainability Hub	The Manulife Sustainability Hub is a forum for Manulife employees to engage with sustainability. It aims to provide education about sustainability, employee engagement with Manulife's sustainability strategic goals, and a venue for passionate employees to collaborate and propose ideas to make Manulife a more sustainable place to work
VIBE	Valuing the Inclusion of Black Experiences (VIBE) better enables our black employees to advance professionally, support the aspirations of potential employees, and increase awareness of various black cultures

Building a working environment in which everyone thrives

In 2020, our parent company, Manulife, announced DEI commitments focused on talent, culture, and community and in 2022 made the following progress toward those commitments:

37% achieved toward our goal of 40% **women representation** at the AVP level

32% achieved toward our goal of 34% **women representation** at the VP+ level

19% achieved toward our goal of 30% **BIPOC representation** in North America in director+ by 2025 against a 2020 baseline

0.8% achieved toward our goal of 1% **disability representation** in Asia in 2022 (for 2023, our target is 1.5% disability representation)

Manulife also maintains a DEI microsite available to all employees. It features DEI news, events, recordings, and other learning resources.

Some of the strategic activities focused on talent recruitment, retention, and development include focused recruitment efforts from diverse post-secondary schools across North America; offering our employees trainings on allyship, unconscious bias, and inclusive leadership; and an inclusive language initiative that we launched globally for all employees.

Manulife Investment Management embraces the DEI goals adopted by our parent company, Manulife

An inclusive culture and brand with diverse talent that drives high performance until each one of us feels as though we belong

Talent

Diversity at all levels in the organization that's reflective of the communities in which we serve

Culture

Employees thrive because they feel they belong and can bring their authentic selves to work

Community

Strong partnerships and DEI support in the external communities in which we live, work, and serve

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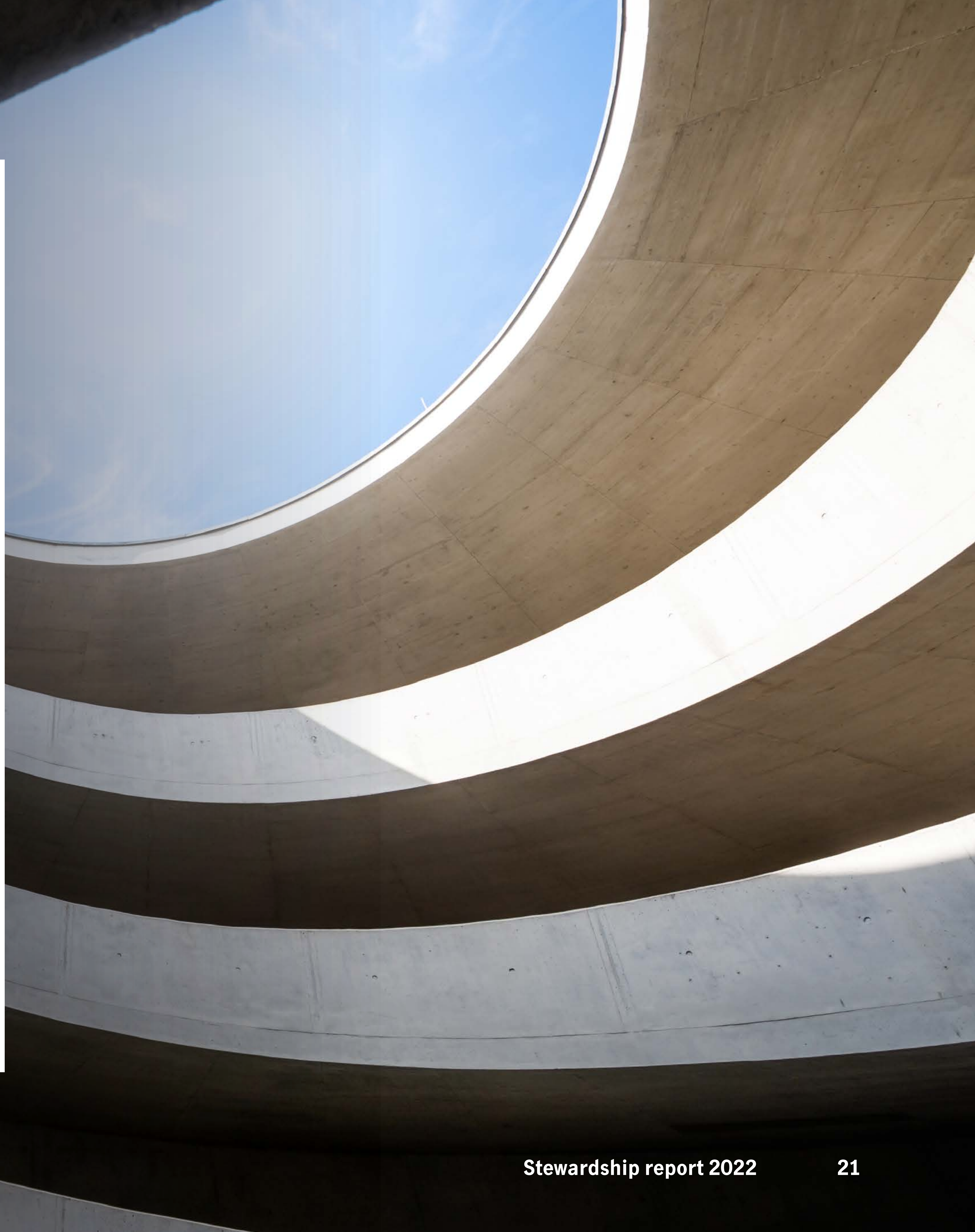
Quarterly global research forum

At least quarterly, we hold our global research forum, which provides a deep dive on pertinent subject matter for our investment teams and investment decision-making. These meetings provide a forum for dialogue with internal and external subject matter experts and see participation across our organization. In 2022, we hosted policy and practitioner experts who led sessions covering:

- Climate science and policy response—a discussion with the Union of Concerned Scientists
- Global macro challenges and their potential connection to bull/bear markets
- Investment training insight from a global interest rates, currencies, and corporate bonds expert with 30+ years of investment experience



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The global engagement research initiative

An example of one of our research, development, and training initiatives is the global engagement research initiative (GERI). This program consists of bimonthly meetings with equity, fixed-income, and sustainable investment professionals. Each GERI meeting has a sector theme, and internal professionals as well as outside speakers are invited to present pertinent research for a given sector. Relevant investment topics in 2022 included:

- Understanding the 15 categories of scope 3 emissions
- Corporate governance concerns around the dual chair/CEO and the presence of unequal voting rights
- Risks and opportunities of cloud computing from an ESG perspective
- Segmenting sources of capital for the oil/gas industry as a result of the commencement of decarbonization pathways toward net zero
- Appreciating and understanding the sustainability effects of e-commerce adoption
- Awareness of greenwashing by peers and companies in sustainability reporting
- U.S. housing, an industry with the opportunity to embrace clean technology, with examples in action
- The European energy situation and the implications of the energy transition

These meetings provide a dynamic learning environment in which decision makers are exposed to, and can challenge, new investment ideas and enhance their active ownership practices. It’s particularly important to us that we provide a holistic perspective across the capital structure; for this reason, we regularly involve equity and fixed-income points of view in these sessions. That, in turn, can help sponsor a higher vantage point from which our investment personnel are able to analyze topically related companies.

How our culture informs our active ownership strategies

Building on our history as a trusted fiduciary, long-term investor, and responsible corporate citizen, we seek input from external and internal stakeholders, reflect on learnings from ongoing engagement with third-party sustainability associations, and evolve our stewardship practices. Our culture of collaboration and innovation allows us to fully leverage the range of knowledge across our platform to drive innovation and enhance our stewardship approach by bringing local knowledge combined with global understanding to engage with companies across the globe.

Our culture of collaboration strengthens and aligns our fiduciary duty to our clients as an asset manager because we seek outcomes that improve portfolio resiliency. For example, when we engage with companies on sustainability issues, it can lead to positive changes in disclosure, more sustainable actions and strategies pursued by company management, and better sustainability and financial performance.

Through collaborative engagement, working with industry partners and sustainability-focused organizations, we seek to amplify our collective impact, reduce the noise of numerous points of view by unifying our message to key corporate management teams, and help companies focus on setting goals with meaningfully positive outcomes.

Through collaboration with stakeholders, we're also able to play an active role in advancing sustainability outcomes not only for the companies and assets in client portfolios, but throughout our industry.

Looking ahead

We believe our culture is strong across the organization and strive to have a stewardship program that's well aligned with best practices in the industry. As a component of this program, we've also embarked on a thematic engagement program focused on biodiversity. We look forward to dialogues with issuers, portfolio companies, and operating teams on these key issues and seek to participate with them in stronger disclosures, management practices, and mitigation action plans. We believe this will ultimately result in benefits for our clients and beneficiaries as well as society at large. We're confident that our focus here will facilitate positive, real-world outcomes while advancing our pursuit of attractive risk-adjusted returns.

Governance, resources, and incentives

Our governance structure comprises sustainable investing committees and working groups that provide oversight, conduct ongoing risk assessments, and help steer our sustainability initiatives across global capital markets.

Our governance approach

Manulife Investment Management has established a governance structure to oversee our investment teams' sustainable investing activities and our ongoing stewardship activities.

We view the involvement of leaders in all asset classes, as well as representatives from functional areas such as operations, legal, compliance, risk, and technology, to be crucial to supporting our sustainable investing activities across the organization and ensuring the buy-in and commitment required for success.

In addition, the sustainability governance structure of Manulife Investment Management is connected to larger sustainability governance at Manulife. The president and CEO of Manulife Investment Management is joined by other senior Manulife leaders on the Manulife executive sustainability council, and the leaders of our sustainable investing teams in Manulife Investment Management work closely with Manulife's chief sustainability officer. In this way, Manulife Investment Management's governance structure is well connected to the broader sustainability community and leadership across Manulife.

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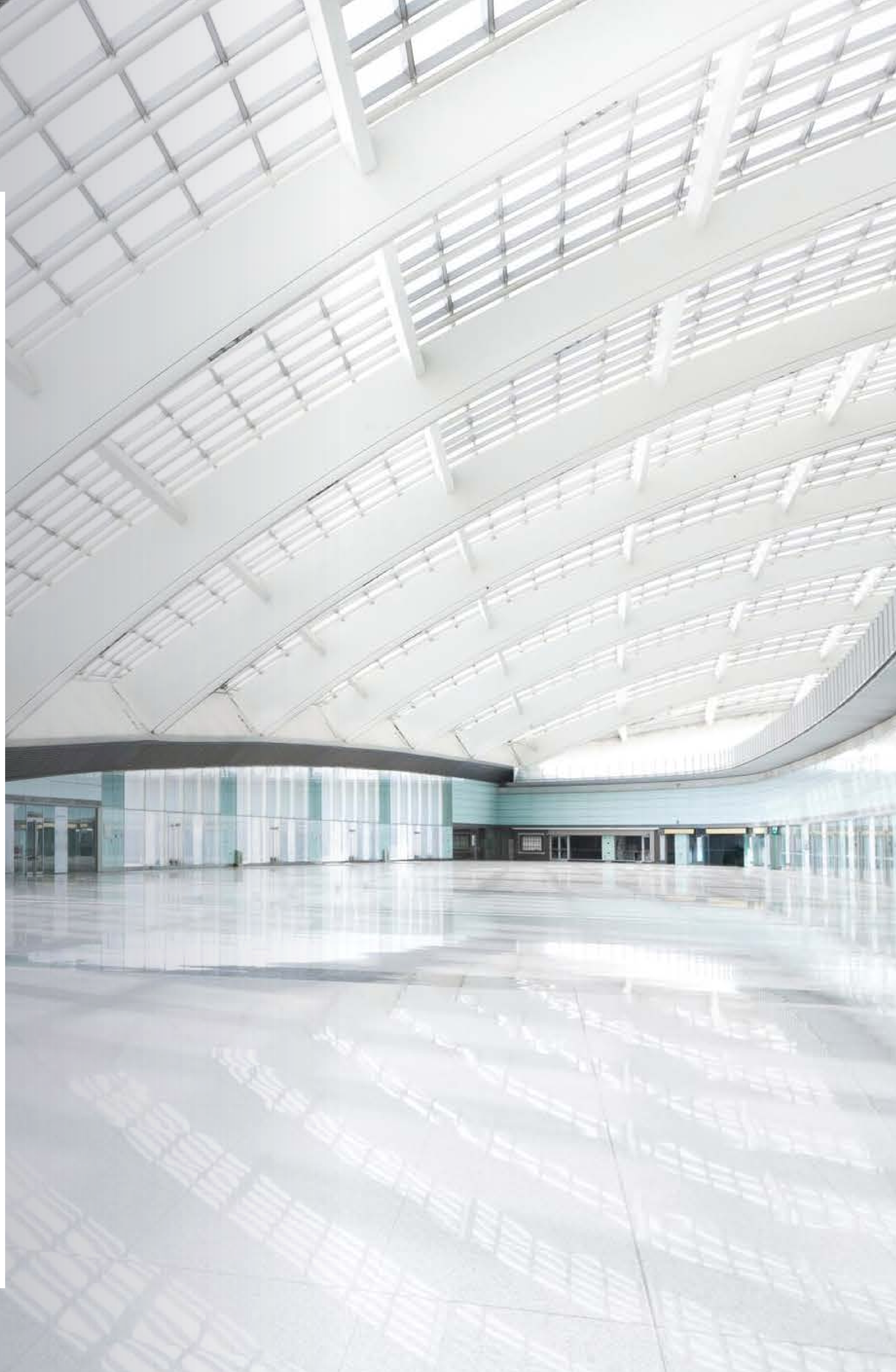
Monitoring the legal and regulatory environment

Issue: The proliferation of legislation, regulations, and rules around both sustainable investing and investment stewardship has created an increasingly complex operating environment for investment managers around those activities.

Action: These developments prompted an internal review at both Manulife and Manulife Investment Management in 2022 to determine whether any changes to our internal governance structure were required to respond to this dynamic legal environment. We conducted a review and solicited input from various stakeholders across the firm and across functions.

Outcome: We've since created a legal and compliance center of expertise at the Manulife level comprising legal and compliance leaders and personnel from across the organization to share information and for consultation on legal and compliance matters related to sustainability. We created the ESG regulatory committee, comprising functional department heads from across Manulife Investment Management, including legal and compliance, to coordinate and advise on the implementation of the different regulations to which our business is subject and to have a cohesive approach globally while ensuring local response to regulatory compliance.



Our sustainability governance

■ Manulife ■ Manulife Investment Management

Corporate governance and nominating committee	Audit committee	Management resources and compensation committee	Risk committee

Executive sustainability council

General counsel	Chief analytics officer	Chief marketing officer—chair	Chief human resources officer	Chief executive officer	President and CEO, Manulife Investment Management	Chief sustainability officer	Chief financial officer	Chief operations officer	Chief investment officer	Chief risk officer

Sustainability center of expertise

- Composed of sustainability leaders across public markets, private markets, the general account, and the Manulife organization
- Provides a forum for information sharing and consultation on sustainability initiatives, performance, and reporting

Legal and compliance center of expertise

- Composed of legal and compliance members from each business unit and region
- Legal, compliance, and regulatory affairs consultation
- Provides a forum for information sharing and consultation on legal and compliance related to Manulife sustainability matters

Our committees and working groups are convened to enable regular decision-making oversight

ESG regulatory committee

- Composed of functional department heads from public markets sustainable investment, private markets sustainable investment, product, operational risk, legal, compliance, and manager research
- Monitors regulatory implementation
- Provides advice and guidance to ESG regulatory change initiatives across the global organization

Public markets sustainable investing committee

- Integral to public markets strategic oversight
- Focuses on key sustainability initiatives and strategy
- Comprises senior cross-functional leads and ESG team members; meets monthly

Proxy voting working group

- Members include cross-functional business heads in public markets
- Reviews escalated voting decisions

Private markets sustainable investing committee

- Supports ESG integration across private markets
- Led by the global head of private markets
- Includes global heads of private asset classes, sustainability specialists, and representatives from strategy, risk, distribution, legal, and marketing

Source: Manulife Investment Management, as of December 2022. For illustrative purposes only.

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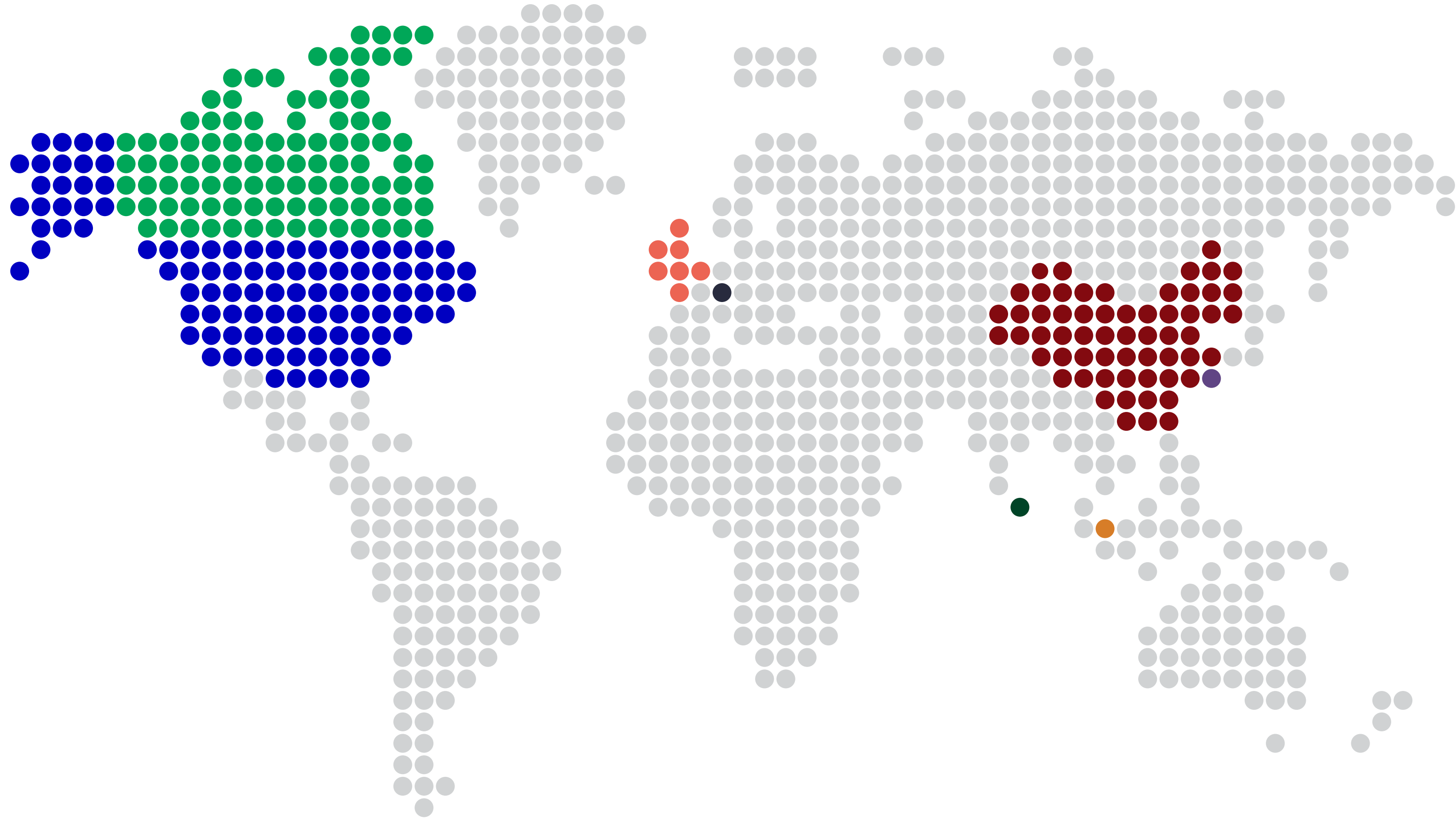
This governance structure is supported by teams of sustainable investing professionals that facilitate the implementation of Manulife Investment Management's sustainable investing agenda. This occurs through a variety of activities and projects, which include preparing annual business plans, identifying and developing sustainable investing best practices, supporting investment teams to develop tools and methodologies to adopt these best practices across the investment lifecycle, advising on product development, and leading the participation in external initiatives or collaborative industry engagement.

Our sustainable investing teams

To better serve our clients, we have two sustainable investing teams—one dedicated to publicly traded securities and asset allocation and another dedicated to supporting private markets asset classes, including real estate, private equity, private credit, timberland, agriculture, and infrastructure. These teams are staffed by professionals with broad and diverse skill sets that make them well suited to address the dynamic and complex requirements of sustainable investing and asset stewardship at a global firm. Some of these professionals have decades of investment experience, while others have worked at sustainable investing data providers, possess legal backgrounds, or bring bonafide scientific credentials to their roles.

These skill sets are complemented by varying degrees of tenure and regional expertise. Taken holistically, our teams have the skill and experience to support complex investment research, robust client reporting, product development, financial modeling, proxy voting decision making, issuer engagement, and collaboration with peers through industry initiatives.

Our sustainable investing teams work across the full spectrum of our investment strategies as well as across geographies. This enables us to ensure that we consistently integrate financially relevant ESG issues into our investment processes, comprehensively disseminate analytical tools and data resources, and provide support to all investment teams in terms of research and stewardship activities.



Canada **13**

United States **6**

United Kingdom **1**

Switzerland **1***

Singapore **2**

Hong Kong SAR **2**

Sri Lanka **2**

Mainland China **1**

* Dual reporting role.

Our sustainability professionals conduct periodic training sessions for investment personnel on thematic sustainability issues such as executive pay analysis, climate change, and ESG integration. Either our teams or external experts, including leading academics, facilitate the training; we also conduct or sponsor training sessions for specific investment teams as needed. Investment analysts are expected to participate in these training sessions as part of their ongoing professional development. The heads of each asset class are fully aligned with our approach to sustainable investing and provide clear leadership and direction.

Our investment teams have access to internal and external ESG data to assess the potential impact of material ESG factors on the valuation and risk/return profile of investee companies. Given that we operate as a community of specialist investment teams, each team incorporates ESG factors into the investment process in a manner that aligns best within its individual investment decision-making approach. Our sustainable investing professionals act as the primary base of support for our investment teams by helping design sustainable investing processes and providing a range of ESG-related decision-useful metrics, as well as working closely on our stewardship activities with the investment teams.

As our investment professionals have worked to integrate financially material sustainability factors into their investment decision-making over the past several years, they've developed a robust understanding of sustainability issues and their impact across portfolios. To consistently help strengthen that institutional understanding, our dedicated sustainability professionals act as subject matter experts focused on critical ESG themes through their presence around the globe.

These individuals make it their business to stay informed at the cutting edge of developments in their respective areas, participating in engagements where their expertise is particularly relevant and contributing to industry collaborations dedicated to the specific matters on which they can bring their expertise to bear. Specifically, we have dedicated ESG team leads in the following areas:

- Agriculture
- Biodiversity
- Climate change
- Climate innovation
- Data privacy
- Governance, regulations, and ethics
- Health and wellness
- Infrastructure
- Modern slavery
- Private equity and credit (PE&C)
- Real estate
- Timberland
- Transportation
- Water management

Our sustainability professionals collaborate with our investment personnel in engagements with public issuers and portfolio company management and operational teams while also engaging with industry associations, nongovernmental organizations (NGOs), and regulators. These professionals also support all of the public markets investment teams in reviewing proxy voting decisions, conducting research and analysis to advise our portfolio management professionals, and escalating critical matters to the attention of the proxy voting working group. The subject matter and stewardship expertise of our sustainability team members remains centrally available across our investment teams.

Our sustainability-focused professionals support our asset management teams globally

27

dedicated sustainable investing professionals

400+

investment professionals are advised on sustainability

with expertise across regions and asset classes

- **ESG research and analysis**
- **Implementation of sustainability practices**
- **Training and education sessions**
- **Proxy voting research**
- **Stewardship practices for operation of real assets**

Investment teams

Integrating ESG factors and stewardship in their investment activities

- Listed equity
- Fixed income
- Multi-asset solutions
- Real estate
- Infrastructure
- PE&C
- Timberland
- Agriculture

Real asset operation teams

Integration of sustainable investing within assets we own and operate in real estate, timberland, and agriculture

Source: Manulife Investment Management, as of December 2022.

Sustainability and compensation structures

Across all asset classes, the contribution of investment professionals to sustainable investing and stewardship is a consideration in the discretionary bonus decision-making process each year. In addition, senior leaders have goals related to sustainability; our asset class leaders, for example, have clear goals to consistently improve our ESG integration practices.

Analysts on our sustainable investing teams for public asset classes are evaluated on a range of annual performance criteria related to the success of our sustainable investing program, including qualitative assessments of the level of ESG integration and awareness across investment teams and the volume, quality, and investment impact of ESG engagements with companies that form part of our stewardship program. Similarly, the sustainable investing team for private asset classes is evaluated on a range of annual performance criteria related to its sustainable investing program. Furthermore, all employees managing timberland and agriculture assets are evaluated annually, in part, on metrics related to stewardship of people and the environment, such as conformance to third-party certification standards. Real estate employees are encouraged to include sustainability objectives in their annual goals.

Looking ahead

We strive to continuously improve our sustainable investing practices and expand our sustainable investment product suite in the face of a dynamic market and regulatory operating environment. Given these conditions, we need to continually review our governance process. We'll continue to review our governance of, and resources dedicated to, sustainable investment and investment stewardship through 2023.

Learn more about our policies and governance

- Sustainable investing and sustainability risk statement
- Climate change statement
- Cluster munitions policy
- ESG engagement policy
- Global proxy voting policy and procedures
- Nature statement
- Real estate sustainability framework
- Timberland and agriculture sustainable investing framework
- Infrastructure sustainable investing framework
- Private equity and credit sustainable investing framework
- Executive compensation statement
- Responsible contracting statement

Conflicts of interest

Manulife Investment Management is fully committed to conducting business with integrity and treating customers fairly and consistently. Our obligation extends to managing conflicts impartially between ourselves and our clients—and between clients. Conflict management can occur in a number of stewardship activities, including engagement, collaboration, and proxy voting.

Our approach to managing conflicts of interest

We always strive to act in the best interests of our clients and seek to actively avoid, identify, and mitigate material conflicts of interest, whether potential or otherwise, across all our business activities, including active ownership. To that end, the firm has established a framework of policies, training, and governance to address real and potential material conflicts of interest and—in adherence to our fiduciary duty—to always put the interests of clients first.

We take a multifaceted approach to conflicts management

Multiple policies, processes, and review bodies help us identify and mitigate conflicts of interest

Governance	**Boards and oversight committees**	**Policies and procedures**	**Conflicts advisory council and conflicts committees**
Oversight mechanisms	**Global ethics** **Trade oversight operations** **Proxy voting**	**Conflicts of interest policies tailored to specific market challenges**	**Identification and mitigation of business-level conflicts**

Global policy network

Manulife Investment Management comprises various affiliated legal entities across the globe. We've established a network of conflicts of interest policies that supports our efforts to identify and mitigate real or potential material conflicts. These policies are further tailored to each entity according to the different legal and regulatory environments in which the entities operate. For example, Manulife Investment Management (Europe) Ltd., our U.K. legal entity, has a stand-alone conflicts of interest policy that's designed to protect the interests of our clients while also meeting the specific expectations of the Financial Conduct Authority Principles for Business and the requirements of the EU Markets in Financial Instruments Directive II.

Individual employee activities related to conflicts of interest inherent in the investment management business are also covered by our code of ethics. The code directs employees to consider situations in which their activities or interactions with clients, vendors, or other employees could present an actual, potential, or perceived conflict and to report such employee conflicts to compliance for further review and action. The code monitors employee conflicts such as personal trading, gifts and entertainment, outside business activities, and U.S. political contributions. The code also emphasizes that potential or actual employee conflicts can often occur within all normal business operations; it's the responsibility of our associates to always act honestly, ethically, and with integrity to protect our clients' interests.

Regarding stewardship specifically, both our global proxy voting policy and procedures and our ESG engagement policy address conflicts in proxy voting and engagement. Associates tasked with engagement and proxy voting responsibilities are required to disclose any real or potential conflicts to their manager and our legal and compliance departments, as needed, to determine appropriate steps to mitigate a given conflict.

We require our teams to follow a program of continual training

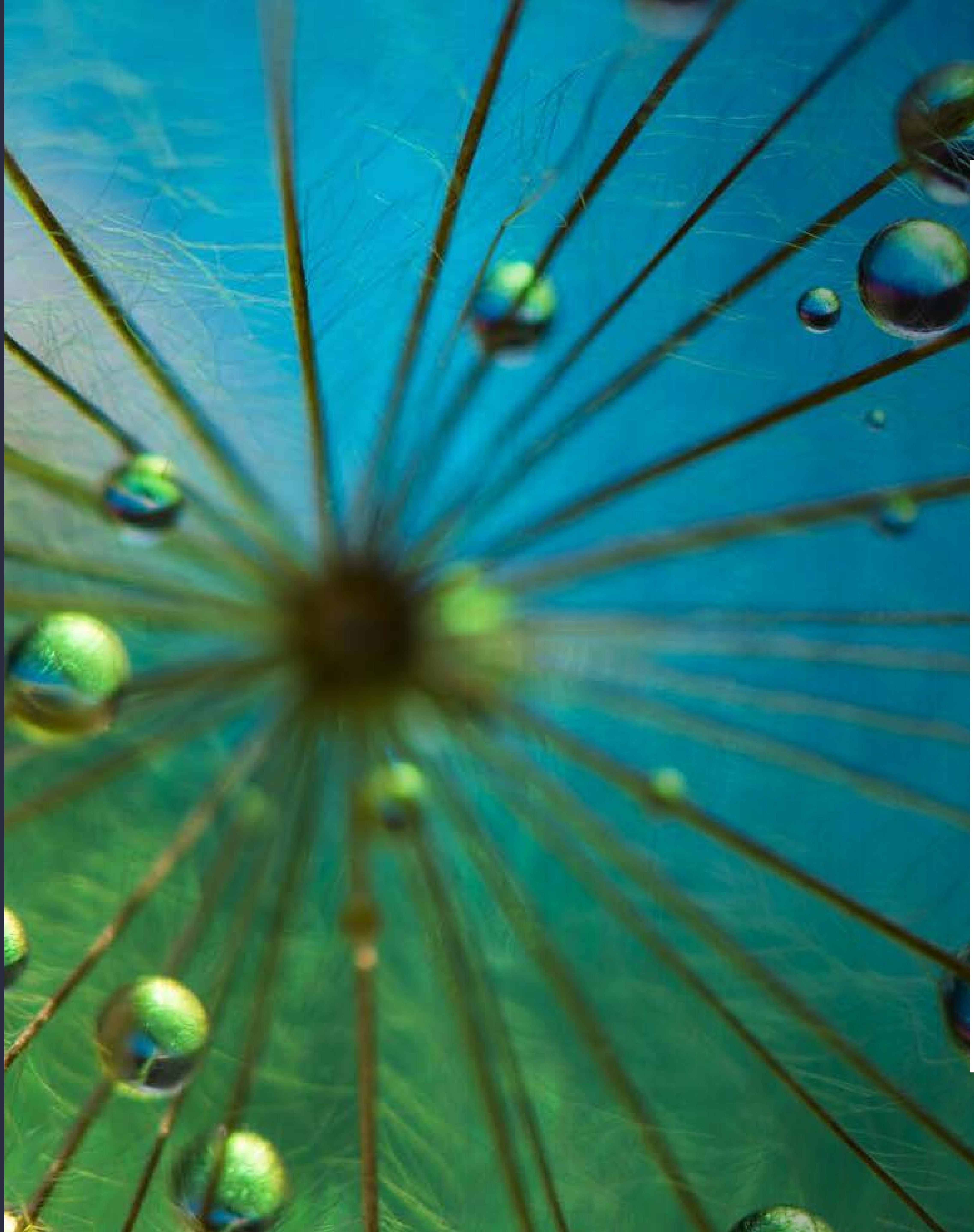
Our employees are required to complete training sessions throughout the year as directed by the global code of ethics administration team. These sessions include content on managing conflicts within gifts and business entertainment, participation in business activities that could benefit an associate or close relative, and outside activities.

Employees learn both how to identify a real or potential conflict and the steps that they should follow when it's identified. Training sessions then test employees to confirm both their understanding of the training and their responsibility to abide by the code.

Our governance infrastructure and applicable oversight committees are continually evolving

Several standing bodies throughout Manulife Investment Management are tasked with overseeing the network of conflicts of interest policies, training, and mitigation efforts. Our standing oversight committees, for example, comprise senior management and risk and compliance officers from the various entities that make up our firm.

Related to proxy voting specifically, Manulife Investment Management's proxy voting working group acts as a control against conflicts of interest in the proxy voting process. The working group is made up of functional experts from across the organization, including the legal, compliance, risk, investment, and sustainable investing teams. It reviews any potential conflict of interest to determine whether it's material and, where a conflict is present, the working group follows one of several actions, including direct review of the relevant proxy voting decisions to ensure a robust rationale that protects shareholder value over the long term, execution in line with the recommendations of a third-party proxy research provider, or abstention from voting.



Case study

Conflicts review for leadership in Climate Engagement Canada

Issue: Manulife Investment Management joined the Climate Engagement Canada (CEC) initiative in 2022. The initiative is supported in part by the Principles for Responsible Investment (PRI) and has 35 investor participants committed to engaging with some of the largest public issuers in the Canadian market. Manulife Investment Management was offered roles, including a lead position on several engagements, but we needed to review whether any conflicts of interest existed.

Action: Prior to committing to participate in these engagements, we conducted an internal review of any material conflicts of interest related to the issuers in question. We worked across business functions to determine whether either Manulife or Manulife Investment Management had any material relationships with the companies.

Outcome: After a thorough review, no material conflicts were identified, and we're now participating in several CEC engagements.

Addressing potential conflicts in private markets

The primary purpose of the private markets conflicts of interest and investment allocation oversight committee is to carry out investment manager duties relating to oversight of the investment allocation process and address conflicts of interest. This includes conflicts of interest (i) between an investment manager and its supervised persons or affiliates, or its advisory clients, and (ii) between and among an investment manager's advisory clients. The committee reviews conflicts, and potential conflicts, of interest, providing advice and recommendations regarding the mitigation of these conflicts or potential conflicts. Among the potential conflicts, material conflicts of interest could include:

- Investments in the same company at different levels of capital structure
- Financially troubled investments
- Loans or additional equity to portfolio companies
- Purchases or sales at different times or in different proportions
- Investment refinancing or liquidation events
- Financing of real estate purchases

In 2022, our timberland and agriculture board adopted a new conflicts of interest policy in response to a 2021 assessment of our conflicts management across private markets investment operations. The new policy addresses conflicts between Manulife Investment Management and our timberland and agriculture clients as well as conflicts between and among clients themselves. The new timberland and agriculture conflicts policy also has an itemized list of potential conflicts that may arise, and our business teams in timberland and agriculture were trained on the policy. One example from this training included a situation in which one client may wish to sell timberland assets to another client. Our teams involved in timberland and agriculture investments are now better positioned to recognize and manage this and other types of potential conflicts of interest.

The timberland and agriculture property management business uses subsidiary companies (affiliates) to perform services. As these are related party transactions, we have conflict protocols in place to ensure we're not favoring our affiliates to the detriment of our clients. We contract with our subsidiaries to charge at or below market rates for services. These costs vary by region and geography, but our goal is to have one global benchmarking standard for how fees are assessed and charged to our clients.

When conflicts can't be resolved

In exceptional circumstances, an unmanageable material conflict may arise. In these cases, Manulife Investment Management will disclose the conflict to the client in order to agree on the best way forward for the client.

This disclosure is important in circumstances in which other means of conflict management have proved insufficient and provides sufficient detailed information to allow the client to make informed decisions.

Looking ahead

We recognize that our firm is a complex global network of legal entities in which conflicts are inherent, and we operate a wide range of policies and processes, both globally and locally. In 2023, we'll continue our work related to the identification and management of conflicts in the proxy voting process as our operating model and businesses grow, and we'll continue to assess conflicts to ensure we identify new material conflicts and address them accordingly. These improvements will provide more data and information to help mitigate real and potential conflicts as they arise.

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Promoting well-functioning markets

We believe investors can play a central role in helping to address systemic risks in financial markets. Systemic risks are non-diversifiable and therefore may have a negative impact on returns across investment portfolios. As sustainable investors, we've established a multilayered risk management structure to help mitigate systemic risk exposure in our portfolios. In addition, as these risks may affect a well-functioning market, we participate in collaborative actions to help protect the integrity of our financial markets.

How systemic risk evaluation fits into our overall risk management framework

Because we operate across numerous asset classes and markets, we've implemented intersecting processes to identify and respond to different types of risk. In turn, our investment teams are empowered to account for the market and systemic risks in their investment process, which are then monitored at an organizational level.

Manulife Investment Management deploys a risk management approach that consists of three layers, beginning with our investment professionals. This is followed by compliance and risk management teams as the second layer, and our internal audit team constitutes the third layer. All three layers have entirely separate management structures and reporting authorities to ensure independence.

While risk—particularly systemic risks such as climate change—can never be entirely guarded against in investment portfolios and business operations, we believe our intersecting risk management processes help us to effectively manage these risks in our clients' portfolios and for the assets we own and operate.

We rely on both quantitative and qualitative risk management inputs

Portfolio managers

Our frontline risk defense

Investment risk/ESG teams and models

Multilevel risk management functions

Collaborative engagements

Systemic risk identification and mitigation

Different forms of risk are simultaneously addressed and managed

- Liquidity
- Sustainability risks, including climate risks
- Operational
- Market

Across our investment capabilities, portfolio managers are ultimately responsible for managing risks in their portfolios. Our public markets teams are aided by an investment risk group, an ESG team, and models that together help monitor market risk. In connection with a variety of systemic risks commonly defined in terms of ESG factors, we participate in collaborative engagements, which help us amplify our impact across the global capital markets.

Our governance approach to systemic risks

The sustainable investment committees (SICs) for public and private markets provide oversight for our sustainable investing strategies. The sustainable investment teams will bring to the SICs opportunities to address systemic risks, which may include portfolio-specific actions as well as collaborative actions with outside organizations and engagement with regulatory bodies. All of these action plans must be approved by the relevant SIC and generally define an approach to risk mitigation.

Responding to the systemic risk of climate change

We continue to believe that unmitigated climate-related risks present a systemic threat to societal, environmental, and financial stability—and therefore to our businesses and our clients' financial objectives—over the coming decades. In 2022, the World Economic Forum identified climate action failure and extreme weather as two of the most potentially damaging global risks. To understand the impact of climate change on investment decisions, we believe asset managers should assess the transition risk, physical risk, and opportunities posed by climate change to the companies and assets in which they invest. We recognize that climate change could have an economic impact that will vary from company to company and asset to asset and will depend on the exposure level of each sector, industry, and geography.

We believe that the understanding of climate change across the capital markets remains uneven, leading to potential mispricing of assets, and that many companies may be inadequately prepared to respond to the risks and opportunities of this transition. We may take a variety of actions toward managing climate-related risks and opportunities across our businesses and investments to appropriately price climate risk.

Comment letter to the SEC

In June 2022, we provided a comment letter to the SEC in response to the proposed "Enhancement and Standardization of Climate-Related Disclosures for Investors," which would require U.S. listed companies to disclose to investors how their operations affect the climate and contribute to carbon emissions. We articulated how our investment professionals consider and integrate information that's available to them in their decision-making where they deem it material and relevant to their investment process and thesis, including climate disclosures and metrics such as quantities of GHG emissions as well as intensity levels. In addition, we articulated our support for disclosure of scope 3 emissions data and acknowledged how this data could be used as a leading indicator of exposure to revenue risk in the future as customer preferences for lower-carbon products and services change. Reporting scope 3 emissions could encourage industry participants to look at emissions risks across their entire value chain, moving beyond operations-only emissions. We also provided specific examples of how our investment teams have used climate data to:

- Conduct due diligence
- Factor in risk metrics and risk reports
- Build climate-themed investment products
- Assign a cost to carbon in financial models
- Re-weight portfolios based on emissions

Our TCFD-aligned disclosure

In 2022, we released our fourth climate-related financial disclosure, which we designed in alignment with recommendations from the TCFD. The report sought to holistically cover Manulife Investment Management's capabilities and included enhanced disclosure in a number of areas across our public and private markets investments.

Climate Action 100+: a major platform for collaborative change

In 2017, Manulife Investment Management was a founding member of Climate Action 100+. Phase I was a five-year initiative; Phase II has commenced and, as of January 2023, the initiative includes more than 700 investors from around the globe representing US$68 trillion in investor capital. Climate Action 100+ focuses on the world's largest corporate GHG emitters. In 2022, notable climate-related actions from investee companies targeted through Climate Action 100+ outreach were achieved, and we continue to encourage additional efforts for all issuers. We continued in 2022 as an engagement leader in conjunction with one of the world's largest chemical firms and a large Canadian oil sands operator. Through these efforts, we're looking to influence these companies to adopt more expansive emissions reduction targets and we're supporting the production of a climate lobbying report, among other objectives.

In 2022, we also provided feedback to Climate Action 100+ regarding Phase II strategy and expectations in order to support investor engagements with focus companies.

CDP Science-Based Targets Campaign

The CDP's campaign encourages the world's largest and highest-impact companies from a carbon emissions standpoint to set science-based emissions reduction targets in line with the 1.5°C warming scenario defined by the Paris Agreement. We're a proponent of this campaign, as companies who set science-based targets see an average emissions reduction of 6.4% annually.

Climate Engagement Canada

We support this initiative's goals to encourage Canadian corporate issuers to manage, and report on, their transition to a net zero economy. As part of this collaboration, we're the co-lead investor for a Canadian mining company; in addition, we provide support to other company engagements, including a Canadian airline and a fertilizer company.

Signatory to the Ceres Canadian Oil and Gas Working Group to the Canadian Ministry of Environment

The Ministry of Environment in Canada solicited feedback on proposed regulatory action to reduce the scope 1 and scope 2 emissions of Canadian oil and gas producers. The Ministry is considering either a new cap-and-trade system or a higher carbon price. Our involvement with the working group convened by Ceres aligns with our activities and commitments with organizations, including Climate Action 100+, CEC, and the Asia Investor Group on Climate Change (AIGCC). The communications sponsored by Ceres reflect our shared concern around the current path of industry emissions levels and that meeting Canada's 2030 and 2050 climate goals will be challenging without more aggressive and urgent actions by the government of Canada.

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Climate risks: silviculture research

Issue: In many ways, trees are like people. If they have enough food, water, light, and protection from the elements, they're usually healthy. If they're dehydrated, malnourished, starved of light, or exposed to extreme temperatures or winds, staying healthy is more difficult. The point is that while a changing climate can affect forest health, so can an experienced forester, and there are strategies for fostering an environment that's conducive to growing healthy and resilient trees. This is called silviculture and, fortunately, we have highly qualified silviculturists on our team to enable us to engage on innovative practices.

Action: Our silviculture approach is adaptive to both current and future climate-related risks—and opportunities. We belong to eight university cooperative research programs related to forest tree improvement, productivity, health, and growth and yield, all of which inform our management practices using the most current science.

Outcome: This work enables us to tailor our species selection and management approach for each property in order to provide healthy forests, yielding the highest degree of adaptation and resilience. It also enables us to identify opportunities of climate adaptation: Evidence suggests that forests may benefit from higher CO_2 levels (carbon fertilization) and longer growing seasons.

Our investments are aligned with our broader climate risk mitigation efforts

We may take a variety of actions toward managing climate-related risks and opportunities across our businesses and investments to appropriately price climate risk. Broadly summarized, our available actions relate to asset allocation and selection, investment analysis and research, proxy voting, mitigating direct GHG emissions, deploying robust sustainability management practices for operated assets, and participating in collaborative industry climate initiatives. In general, our preferred position is to engage directly with companies to encourage effective implementation of climate risk mitigation and adaptation strategies, reserving the right to divest from any investment.

In 2020, our timberland and agriculture business launched its inaugural climate disclosure report. Specific to timberland and agriculture, the 2020 climate report provides details on our approach to climate-related governance, strategy, risk management, and metrics and targets. It also outlines how we've scaled up our capabilities for investments that optimize and prioritize carbon removal and how we're incentivizing climate stewardship to drive our efforts. The report outlines why adapting to and addressing climate-related impacts is one of our business imperatives.

Since 2019, our real estate business has implemented a specific program to learn more about our portfolio's physical climate change risks and our resilience in the face of these risks. We conducted a climate risk and resilience assessment across our global portfolio[3]; following that effort, we implemented a new building standard required for our properties to address climate risk and resilience.

We also address systemic risk through our thematic offerings. In our public markets business, we currently have, for example, a global climate equity strategy and a global climate bond strategy. Each strategy offers investors the opportunity to align their portfolios with the overarching goal of reducing GHG emissions and achieving real-world decarbonization while investing in companies we expect to outperform through climate action. In 2022, we launched our private markets forest climate strategy, which provides investors with the opportunity to promote climate change mitigation through sustainably managed forests in which carbon sequestration is prioritized over timber production.[4]

Expanding nature and biodiversity efforts

We continued our work with the Finance for Biodiversity Pledge because we recognize the close links between climate risks and biodiversity issues. By signing on to the pledge, we're committing to collaborate and engage with companies on biodiversity and assess our own biodiversity impact in order to set targets and disclose appropriate reporting on biodiversity factors by 2024. As an entity with a deep heritage in agriculture and forestry, biodiversity is particularly relevant to our business. The pledge focuses on protecting and restoring biodiversity through finance activities and investments.

3 Risks and opportunities are subject to change over time and are ultimately addressed on a case-by-case basis depending on the individual characteristics of each property. **4** Our investment strategies may not be available in all markets and to all types of investors.

Supporting the TNFD

The climate crisis must be tackled in tandem with the nature crisis. The TNFD is an important initiative that aims to provide a risk management and disclosure framework for organizations to report, and act on, nature-related risks.

Recognizing the nature crisis as relevant to financial institutions, Manulife Investment Management is a member of the TNFD Forum, a multidisciplinary pool of technical experts available to help develop the disclosure framework. Forum participants represent a broad range of institutions, including corporations; financial institutions; public sector entities such as regulators, pension funds, and sovereign wealth funds; academic and research organizations; business associations; and intergovernmental organizations, as well as conservation and civil society organizations. The forum provides an opportunity for us to expand our understanding of biodiversity risks and opportunities around the world while sharing our expertise in operational and strategic management of real assets.

Working with the CISL on nature risk assessment methodologies

Manulife Investment Management is a member of the Investment Leaders Group at the Cambridge Institute for Sustainability Leadership (CISL). A significant focus of our work with the group involves building subject matter knowledge and methodologies to assess nature-related risks across portfolios. We support the continued development of CISL's "Handbook for Nature-related Financial Risks," which extends the work of the Dasgupta Review to identify various nature and biodiversity risks with resultant financial risks for issuers. This work also contributes to the work of TNFD with CISL as a knowledge partner of that organization, committed to providing the TNFD with "expertise across scientific disciplines, market practice and the development of nature-risk scenarios."

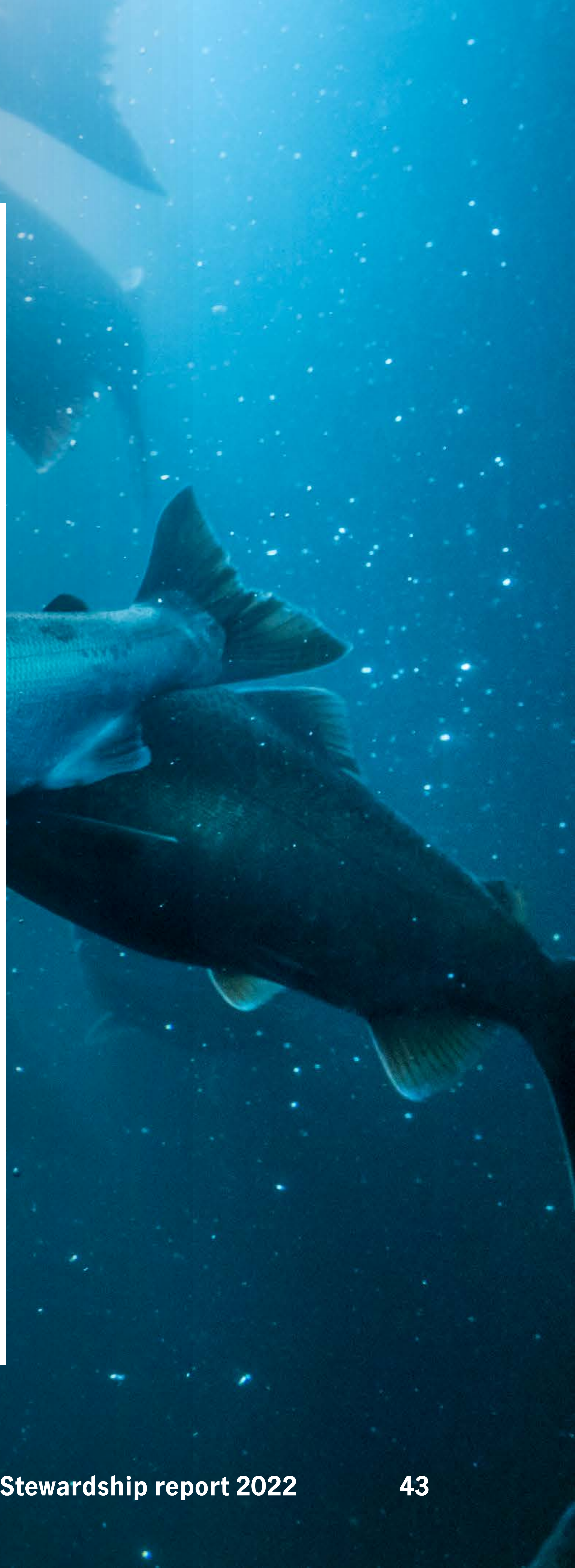
Case study

Breaking conservation records

Issue: Some asset managers might consider sensitive lands a liability; we consider them an asset. Whether it's the marbled murrelet, Kirtland's warbler, prairie chickens, Louisiana pine snake, gopher tortoise, or limestone prairies, we recognize the unique ecosystem roles that varied species—and their habitats—play, and we actively look for opportunities to conserve them.

Action: In 2021, we succeeded in moving 4,600 acres of critical big game habitat and recreation land in Oregon's Minam River Valley into public ownership. The valley's unique environment, which is the gateway to the federally designated wild and scenic Minam River and adjacent to the Eagle Cap Wilderness area, supports a wide variety of species, including salmon, steelhead trout, bull trout, Pacific lamprey, wild turkeys, ruffled grouse, and black bear. Deer, moose, and elk rely on this area to find shelter and browse in the winter when the surrounding mountains are covered in deep snow. This unique and culturally significant ecosystem could have been lost to future private development if not for our significant collaboration with the Oregon Department of Fish and Wildlife (ODFW) and the Rocky Mountain Elk Foundation (RMEF) in designing, funding, and completing this conservation project.

Outcome: It took five years of close collaboration with the ODFW and RMEF to permanently conserve this land at an attractive price. We currently intend to move an additional 11,000 surrounding acres to the ODFW in 2023, and its total acreage would become the largest single conservation project in the agency's history. There are some landscapes that are so special that they should be in the public trust and managed on the public's behalf to increase public enjoyment and wildlife value. We believe this is one such shared natural treasure.



Case study

Encouraging consideration of indigenous communities in minerals projects

Issue: In 2022, the CSA sought feedback from the market on amended standards of disclosure concerning exploration, development, and production activities by mining issuers.

Action: We collaborated with other investors through our membership in PMAC and highlighted the need for miners to disclose information regarding their relationships with indigenous peoples. We deem this information important to gauge the strength of a company's social license to operate. We also saw this as an opportunity to highlight the need for indigenous representation on boards to preserve that license.

Outcome: We expect the CSA to update the standards in 2023 after its review of comments and hope the new standards encourage disclosure around community relations with indigenous peoples.

Case study

Monitoring evapotranspiration for precision agriculture

Issue: To grow a healthy crop, we need to give our crops the water they need—no more, no less. To do this, we need to know how much water a crop needs and how much water the environment is providing through precipitation by measuring evapotranspiration (ET)—how much water is transferred back into the atmosphere through evaporation from the soil and transpiration from plants. When we monitor precipitation and ET, we can then make up the difference through irrigation. Knowing how much water the plant has used as an output enables us to apply the precise amount of water needed as an input to keep the crops healthy.

Action: Our global operations team uses satellite and fixed-wing aerial imagery, as well as ground-based calculations, to measure ET. In our California platform, we have weekly local ET updates to inform our irrigation schedules, helping to ensure our water application and use are precise and effective. In addition to demand-based irrigation, we've also invested in and installed flow meters on the majority of our water extraction points. In our Australian platform, we use weather-based irrigation scheduling, satellite imagery, and other in-field technologies (such as dendrometers) to determine the appropriate volumes of irrigation based on crop needs and the prevailing climate.

Outcome: These technologies allow us to use water efficiently, ensure the application of water is effective, and generate the highest value outcome possible for our water use.

Case study

Encouraging government budget transparency with peer sovereign bond holders

Issue: Through our collaboration with EMIA, we have the opportunity to articulate to governments the need for budget transparency by sovereign debt issuers; the quality of fiscal transparency varies greatly from one country to another. We believe the lack of transparency is a potential systemic risk based on the size of the sovereign debt market.

Action: By engaging through EMIA with sovereigns, we articulate the potential benefits of fiscal transparency, such as better pricing in financial markets, which would reduce borrowing costs for those governments. In addition, stronger transparency may increase the attractiveness of foreign direct investment into a country while reducing unexpected fiscal events and valuation impairments for investors.

Outcome: We believe that, over time, the sovereign issuers with which we engage will be encouraged to provide greater transparency around their budgeting activities.

Looking ahead

We're proud of the work we do to identify and address systemic risks to protect and enhance value for our clients' portfolios. In 2023, we'll continue to promote well-functioning markets through various initiatives focused on addressing systemic risks, including climate change and biodiversity loss. In particular, we intend to expand the depth of our TCFD report and focus on biodiversity. With respect to the latter, we'll continue to engage with standards setters and regulators, embark on a thematic engagement process with issuers across multiple industries, and explore new tools, practices, and technologies for assessing, managing, and mitigating nature and biodiversity impacts across our global business.

Review and assurance

Manulife Investment Management provides regular updates on improvements to our investment and stewardship processes. We believe that full transparency of our policies and practices ensures that our clients and stakeholders have a clear and accurate understanding of our activities and decisions.

Our approach to review and assurance

In 2022, Manulife Investment Management continued to review stewardship practices, primarily by way of internal working groups with a spectrum of functional expertise, which scrutinized and gave input to improving our stewardship practices over time. For example, with the complex and ever-evolving regulatory environment in which we operate with investment capabilities across the globe serving international clients, we recognized a need for coordination and collaboration in addressing local regulatory requirements while managing a global sustainable investing strategy. This led to our creation of our ESG regulatory committee, which provides guidance in navigating that environment and optimizing our operating model.

Internal compliance testing

The compliance function provides regulatory advice and guidance, monitors our investment activities, and provides independent assessment and testing to validate that we have reasonably designed policies and procedures. Our compliance program is designed to ensure our disclosures accurately and adequately describe our sustainable investing practices and is being enhanced to align with our operating model. In 2022, we appointed a head of ESG compliance to oversee and enhance our ESG compliance program.

Moving our policies forward

Manulife Investment Management reviews policies on a formal basis at least every three years as a matter of course; however, our compliance, sustainable investing, and investment teams constantly seek to improve sustainable investing practices. Consequently, our stewardship policies are reviewed more informally on an annual basis to ensure that we hone our best practices in active ownership. We strive to remain aligned with the evolving expectations of the PRI and market-specific stewardship codes of which we're signatories, and we review our stewardship policy framework through the lens of those expectations.

Following these reviews, we may recommend changes to the relevant policies. These changes can be reviewed and approved by working groups, such as the proxy voting working group, before ultimate approval by either our public or private markets SIC for implementation within our business functions.

Policy	Change	Year
Nature statement	**Adopted** to frame our general approach to nature and biodiversity in our investment processes	2022
Executive compensation statement	**Adopted** to articulate our approach to assessing executive compensation for public issuers	2021
Global proxy voting policy and procedures—public market equities	**Modified** to support more shareholder proposals that address ESG risks	2021
Private equity and credit sustainable investing framework	**Adopted** to support our approach to sustainable investing in our private equity and credit investments	2021
Infrastructure sustainable investing framework	**Adopted** to support our approach to sustainable investing in our infrastructure investments	2021
Responsible contracting statement	**Adopted** to clarify our commitment to responsible contracting practices and support our differentiated approaches across asset classes	2021
Sustainable investing and sustainability risk statement	**Updated** to align with Sustainable Finance Disclosure Regulation (SFDR) requirements	2021

Leveraging functional expertise for accurate reporting

Manulife Investment Management's major reporting initiatives are supported by working groups comprising functional experts from across the firm. Over the past year, we've created groups to support our PRI assessment, our sustainable investing report, our climate-related financial disclosures, and this stewardship report. These groups are made up of representatives from our compliance, legal, risk, marketing, and sustainable investing teams, among others, to ensure a comprehensive review of drafted content. These groups met regularly during the drafting process to provide feedback, provide additional substance, or recruit additional experts for their input and review of draft materials.

Draft reports are circulated to the firm's leadership through the public and private markets SICs, comprising executive-level leaders. The respective working groups then incorporate feedback into a final draft before ultimate approval by the public and private markets SICs.

Additional checks to this progress are provided by our internal compliance team, which is trained to assess documents intended for a public audience. With their assistance, the team can work to ensure that materials are fair, transparent, and not misleading, using processes that ensure all data and claims are both valid and verified by internal stakeholders.

Looking ahead

We'll continue leveraging functional expertise across the firm as we report on, and develop, our stewardship and sustainable investment activities. In 2023, we'll continue to conduct a review of our sustainable investment and stewardship activities and practices through our internal risk and audit functions.

Client and beneficiary needs

We seek to support our clients' needs by leveraging our sustainability and investment expertise across a broad range of public and private asset classes, as well as by offering multi-asset solutions. We continuously seek to enhance our product offerings and our reporting in line with industry standards and best practices. We take a consultative approach to meeting our clients' sustainability objectives.

Our approach to client and beneficiary needs

One of our core Manulife values is that we obsess about customers. This value drives us to collaborate with our clients and beneficiaries to understand and meet their needs and to work with them on accessing that part of our sustainability offering that's most suitable for pursuing their objectives.

The spectrum of our sustainability offering

ESG integration (including active ownership)	Negative (and norms-based) screening*	Positive or best-in-class (and norms-based) screening*	Thematic/ sustainability-themed investments
Consideration and analysis of financially material ESG factors as part of investment decision-making	Industry sectors or companies excluded/ divested from to avoid risk or better align with client values	Investments that target companies or industries with better ESG performance	Investments that specifically target sustainability themes (e.g., clean energy, green property, climate mitigation, Sustainable Development Goals (SDGs) aligned solutions)

* Applicable to public markets strategies.

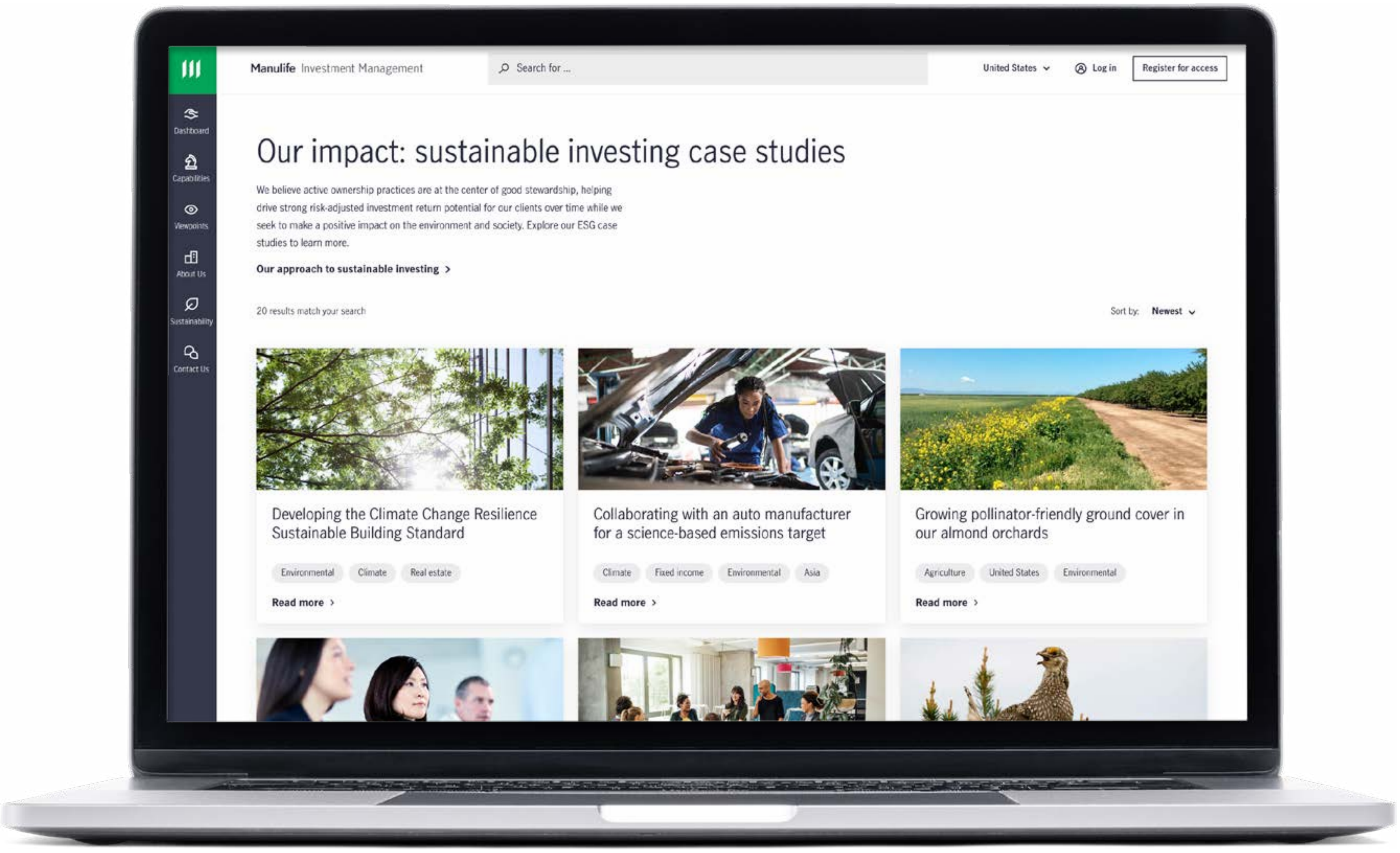
Regular feedback from clients

We work hard to understand the needs and objectives of our clients through regular interactions. At a minimum, we speak directly with each client on an annual basis. In these discussions, we elicit clients' feedback on their investment goals and will specifically review sustainable investment goals as directed by individual clients. We're a global asset manager investing not only across multiple asset classes, but also serving clients across geographies, and the awareness and understanding of sustainable investing for clients varies. Some clients are very knowledgeable about sustainable investing and integration and may request specific actions or ESG data metrics or ask us to fill out a questionnaire on our ESG practices. Others will articulate requirements in an investment policy statement that can cover preferences ranging from investment objectives and time horizons to risk tolerance and asset mix. We use this to better inform our client reporting and ensure that we're continually educating as well as being transparent.

While clients remain keen on understanding how ESG factors are integrated into our investment decision-making and asset management, clients are increasingly interested in our role as an active steward on their behalf and as a responsible operator of assets. We discuss the engagement activities we undertake with issuers and, where we're owner-operators, the types of improvements we're making to the assets.

We believe active and engaged ownership practices are at the center of good stewardship, helping drive strong risk-adjusted investment return potential for our clients over time while we seek to make a positive impact on the environment and society. To help clients better understand the outcomes of our active engagements with issuers and operational ESG initiatives and improvements of our assets, in 2022, we created a webpage with case study examples and will continue to add case studies on a regular basis.

In 2022, we also launched the Manulife Investment Management Sustainable Investing Academy for our institutional investors and retail advisors in Canada. This education program was designed to provide institutional asset owners with the tools to stay current and gain insight on how to incorporate sustainability into their investment practices. Introductory (101) and intermediate (201) content provides a framework that asset owners can use to develop and implement their sustainable investment approach and navigate the deep change transforming capital markets today.



Our clients are advancing on sustainable investment and stewardship

Our clients continue to ask more sophisticated questions about our approach to sustainable investment and stewardship. In addition, we've seen recent requests for proposal (RFPs) with questions on environmental risk management, as well as a survey by asset owners on stewardship activity reporting. We're also observing more client interest in assessing investment managers' sustainability operational excellence. In this area, asset owners are focusing in particular on DEI initiatives and climate strategy; in addition, our private markets clients have started asking more questions about sustainability metrics and key performance indicators.

Following are samples of some recent client questions.

ESG integration into the investment process

- How are you using ESG factors to drive better outcomes for your clients?
- How do the sustainable investing team and the investment teams collaborate?
- Can you please provide an overview of your strategy for, and governance of, data management through the investment process?
- How do you measure the portfolio's sustainability profile? Please provide data on specific performance metrics. (Requests have included carbon footprinting, health and safety, and DEI data.)

Active ownership and stewardship

- How do your active ownership practices affect investment decisions? How do you attempt to influence companies to improve their sustainability? What's the escalation process with regard to engagement?
- How do you measure if you've met your active ownership objectives? Who's responsible for evaluating if you've met your active ownership objectives?
- Do you report on voting and engagement activities? Please attach an example and indicate frequency/depth of reporting.
- To what extent are third-party certifications of sustainable management satisfactory in demonstration of sustainability in the context of the SFDR and the associated taxonomy?

Firm's operational sustainability practices

- Can you please describe your organization's strategy for addressing climate-related risks and opportunities and provide at least three examples of how the strategy is implemented in investment decisions?
- What does DEI mean to your organization more broadly and for the investment team managing the fund/strategy?

More information about our sustainable investing practices can be found on our institutional website.

Public reporting

We publicly report information about our sustainable investment and stewardship practices through several avenues on an annual basis. These are available to clients and other stakeholders and include:

- **PRI assessment—**As signatories to the PRI, we publish our annual assessment report in line with the PRI's reporting cycle. Clients will sometimes use this report as a springboard to a deeper dive into our active ownership and investing activities.
- **Sustainable and responsible investing (SRI) report—**This annual report provides data and examples of our sustainable investment philosophy, policies, and approach across public and private markets. The report provides a holistic view of Manulife Investment Management's sustainability-focused research capabilities, active and responsible engagement activities, and concrete steps taken to integrate sustainability considerations into investment decision-making, as well as our metrics of success.
- **Asset class-specific sustainability reports—**We publish annual reports for our agriculture, real estate, and timberland asset classes.
- **Climate-related financial disclosures report—**This annual public report uses the TCFD framework to report on strategy, governance, risk management, and metrics and targets related to climate change in our business.
- **Case studies website—**We regularly publish new case studies on our corporate website that highlight the impact that we're making through our sustainability and stewardship efforts.

Our clients routinely request customized reporting to supplement our public reports. On request from a client, for example, we'll provide more detailed information of the engagement and proxy voting activities we undertake in relation to holdings in that client's portfolio. We may share specific engagement outcomes or a review of votes on shareholder proposals to provide information as to how we practice stewardship on behalf of an asset owner. For private markets assets, we provide ESG data collected from our sponsors and portfolio companies to the ESG Data Convergence Initiative.

Considering investment time horizons for clients

There's no set rule for investment time horizons across all asset classes. For Manulife Investment Management, time spans can change by client mandate, asset class, and the degree of materiality of sustainability factors for a given investment. Some examples include:

- **Pension plans—**We manage pension plan assets that are intended to run in perpetuity.
- **Private infrastructure—**Our private markets infrastructure funds consider up to a 50-year operational timeframe, with returns generally expected to mature at about 10 years after investment.[5]
- **Climate risk exposure—**When reviewing investments with particular exposure to transition and physical climate risk, we look at short-, medium-, and long-term time horizons.

5 The investment term of private funds will vary from fund to fund depending on a number of factors, including asset class and fund structure.

Diligence by clients

Due diligence questionnaires are another vehicle through which our clients articulate what aspects of responsible investment are critical to their goals. These questionnaires may seek greater detail on sustainable investing efforts and results or inquire about our exposure to specific risks. The frequency of these questionnaires is typically annual; however, we do have some clients who make inquiries more often.

We track the questions we receive in these due diligence questionnaires from clients and use that data to determine whether there are any larger trends in client expectations. Any trends that we identify may help us prioritize our updates for sustainable investment and stewardship over time.

Looking ahead

We continue to expand our education resources for clients, including our Sustainable Investing Academy education program. We believe this can help asset owners and advisors with important information on how to incorporate sustainability into their investment practices. We'll also continue to grow our impact case studies and communicate these to clients, evolve our reporting practices across asset classes, and offer new sustainable investment solutions. Overall, we believe transparency and accountability—which we see as facets of our sustainability efforts—will benefit our clients, strengthen our approach, and contribute to real progress on important sustainability issues.

Stewardship, investment, and ESG integration

We recognize the critical connection between deciding to invest and maintaining a strong program of stewardship to protect each of our investments. The central objective of our approach is to strengthen the potential risk/reward profile of our clients' portfolios.

Our approach to ESG integration

We seek to incorporate material ESG considerations throughout the stages of our investment and lending lifecycles, considering the characteristics of the asset class and investment process in question as well as industry and geography, among other factors. In our capacity as stewards of capital, our investment approaches go beyond conventional financial statement analysis. Our investment strategies that have fully integrated ESG analysis monitor a company's strategy, capital structure, and management of ESG risks and opportunities on an ongoing basis. In our operating activities, we hold ourselves to a high standard of sustainability. We do this to both protect and grow the value of the assets as we create long-term value for our stakeholders.

Centralized support from sustainable investment professionals

Our group of 27 sustainable investment professionals reinforces and strengthens ESG integration and stewardship activities across our investment teams and in all asset classes. This support extends across the investment, product, and asset class lifecycles and includes:

- **Analysis of sustainability risks and opportunities—**Our investment teams integrate ESG factors into their valuation strategies across portfolios through both ESG data sets and qualitative analysis of the firm's reports and governance mechanisms. The sustainable investment teams work with investment professionals to understand and leverage this information in their investment analysis.
- **Development of tools to aid sustainable investment—**Our sustainability professionals identify tools that help investment teams assess ESG risks and opportunities, and we develop new tools where we see an opportunity to add value. In 2022, for example, the public markets sustainable investing professionals developed a tool to evaluate climate risk at a portfolio and issuer level. This tool is housed on a central global research platform to which all investment teams and professionals have access. On the private markets side, we've added, Measurabl, a tool that provides a portfolio view of our sustainability data for real estate, updated to our sustainable building standards framework for real estate, which defines requirements and best practices for our third-party property managers and encourages improvement while addressing the need for advancement, guidance, tools, and consistency. We've also added a new physical climate risk tool within our infrastructure, timberland, and agriculture businesses.
- **Frequent communication on ESG information—**We've established regional ESG task forces; for example, the Asia equity ESG task force, North America ESG fixed-income task force, and Asia fixed-income ESG task force—to discuss ESG-related research, news, and ideas; similarly, ESG themes, emerging trends, and salient topics are shared with investment teams. For example, for our public markets teams, we establish recurrent GERI meetings, which enable us to coordinate research efforts and promote idea generation that leads with ESG factors. Our sustainable investing professionals in private markets have recurring and ad hoc meetings with investment teams to disseminate ESG-related updates and to communicate updates to ESG business plans.
- **Engagement with management teams—**Today, engagements between Manulife Investment Management and issuers and investments consistently involve discussions of material ESG factors. Our sustainability investing professionals support these engagements by identifying and informing on these material issues. This group also supports our investment teams in working to influence company management to pursue outcomes that we believe will improve its risk/return profile.
- **Training and education—**The sustainable investment teams provide training to our investment professionals throughout the year. In 2022, training included topics in ESG materiality, carbon standards, emerging sustainability regulation, and climate science and policy. The sustainable investment teams also support an internal ESG information hub in which they collect research and related discussions of sustainability topics.
- **Guidance on exercising rights—**As our investment teams review the exercise of certain rights associated with an asset class, our sustainability professionals will advise our investment colleagues on the intersection of sustainability factors and the exercise of their rights. Support can range from research in proxy voting decisions for equity to the identification of sustainability factors that may help us exert influence through a credit event in our fixed-income holdings. To support decision-making in these areas, we've published our guiding principles and statements, including our proxy voting principles, our climate change statement, our nature statement, and our executive compensation statement.

ESG analysis in our investment process

For more information on our ESG integration processes, please see our sustainable and responsible investing report.

A message from Paul R. Lorentz

Firm overview

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Public asset classes

Each investment team operates in different markets and with different nuances to its approach to investing. Accordingly, each team integrates ESG factors into its investment process in a manner that best aligns with its investment approach. Each team bears responsibility for the evaluation of ESG factors throughout the due diligence and decision-making processes in the pursuit of risk-adjusted returns and capital preservation.

How we use third-party ESG data

ESG integration across different public asset classes includes the integration of third-party vendor data; this is a preliminary step in our process. Manulife Investment Management receives and reviews ESG scores, ratings, and data from a number of external data vendors. While this data isn't determinative of investment decisions, it helps create a more comprehensive assessment of actual and potential portfolio constituents.

Decisions to include or terminate positions aren't based solely on single ESG ratings; there may be instances in which we review companies with less favorable ratings. Rather than serve as grounds for exclusionary measures, we review and examine third-party data to understand the drivers behind such ratings, which creates an opportunity to engage with companies to further understand the underlying sustainability characteristics of their businesses.

This is particularly true in emerging markets where third-party ESG data gaps are quite common and company-specific ESG disclosure is relatively poor. We think our long history in investing in emerging markets enables us to engage with those companies efficiently to close the data gap. In 2022, we continued to interact with emerging-market issuers and investors as a member of the EMIA.

Internal assessments of our ESG integration efforts

Manulife Investment Management has developed a proprietary, internal system to assess and monitor the level of each team's ESG integration efforts. Over 90% of our AUM in public equity and public fixed-income strategies were fully integrating ESG factors under our proprietary assessment framework. We understand that sustainable investing requires ongoing change and improvement, and we look forward to implementing a number of additional assessment criteria to assess and measure our investment teams' progress.

Fixed income

Our approach to fixed-income ESG integration is adapted to identify the material issues within each industry. In addition to the materiality of ESG risks, our investment professionals seek to assess the timing of likely impact. Credit analysts are responsible for completing an ESG risk assessment and can use the ESG risk profile to adjust the relative value ranking of names within a given industry.

Across our fixed-income strategies, our investment teams have access to a variety of tools that support their ESG integration processes. Examples include our:

- **Proprietary sovereign ESG risk model—**A unique product of collaborative work between our global ESG research and integration team and veteran sovereign debt and multi-sector fixed-income professionals
- **ESG credit risk analysis template—**Helps our teams assess the potential impact of ESG factors on spreads and default risk
- **Risk intensity ranking—**Proprietary method used in our Asia fixed-income investment process

Listed equity

In addition to using internal and external ESG data to identify higher- and lower-risk stocks, our teams actively engage with company management to assess a company's exposure—and potentially help enhance its resiliency—to different types of ESG risks. This insight can help shape the teams' modeling and define sensitivities around their estimates of fair value. Examples of ESG integration in listed equity include:

- Using known or perceived ESG risks to identify potential risk over- or understatements
- Using carbon risk data to flag the level of climate risk exposure for an individual issuer and to develop a range of potential risk outcomes for the company in question
- Adjusting company valuations (e.g., through cost of capital assumptions) based on quantitative ESG risks/opportunity profiles

Multi-asset solutions

Generally speaking, the industry has been slower to integrate ESG factors in multi-asset versus public equity or fixed-income asset classes separately. We believe, however, that value can be attained through targeted integration. Our multi-asset team achieved our highest level of ESG integration in 2022 and uses a framework for evaluating aspects of ESG risk and opportunity that align with their investment process that consists of the following:

- Partnership with the internal sustainable investing team
- Coordination across the equity, fixed-income, and multi-asset solutions teams to share sustainable investment views, enabling the multi-asset solutions team to develop fundamental top-down viewpoints of risks and opportunities across industries
- Collaboration with the internal global manager research (GMR) team to assess depth and quality of ESG integration for managers of individual actively managed asset classes used in multi-asset solutions
- Research into, and publication of, macroeconomic analyses on ESG topics and their potential impact on the capital markets
- Incorporation of ESG adjustments and scenarios into economic and fundamental market inputs driving asset class forecasts
- Enhancement of data aggregation and analysis, quantitative approaches, and portfolio construction tools to incorporate ESG considerations

ESG integration in multi-asset is different

Notable differences between security selection and asset allocation

Security selector ESG integration

- Bottom-up security analysis
- Analysis of disclosed financial and sustainability-related statements
- Analysts directly engage with corporate management related to ESG intiatives
- Ability to impact investments through active ownership
- ESG impact incorporated into relevant price targets/discount rates

Asset allocator ESG integration

- Incorporation of ESG within top-down macro research and forecasting
- Build-out of ESG data infrastructure for cross-asset analysis
- Inclusion of ESG into the multi-asset solutions team's research framework
- Stewardship of capital through engagement with underlying managers
- Portfolio construction that incorporates ESG factors

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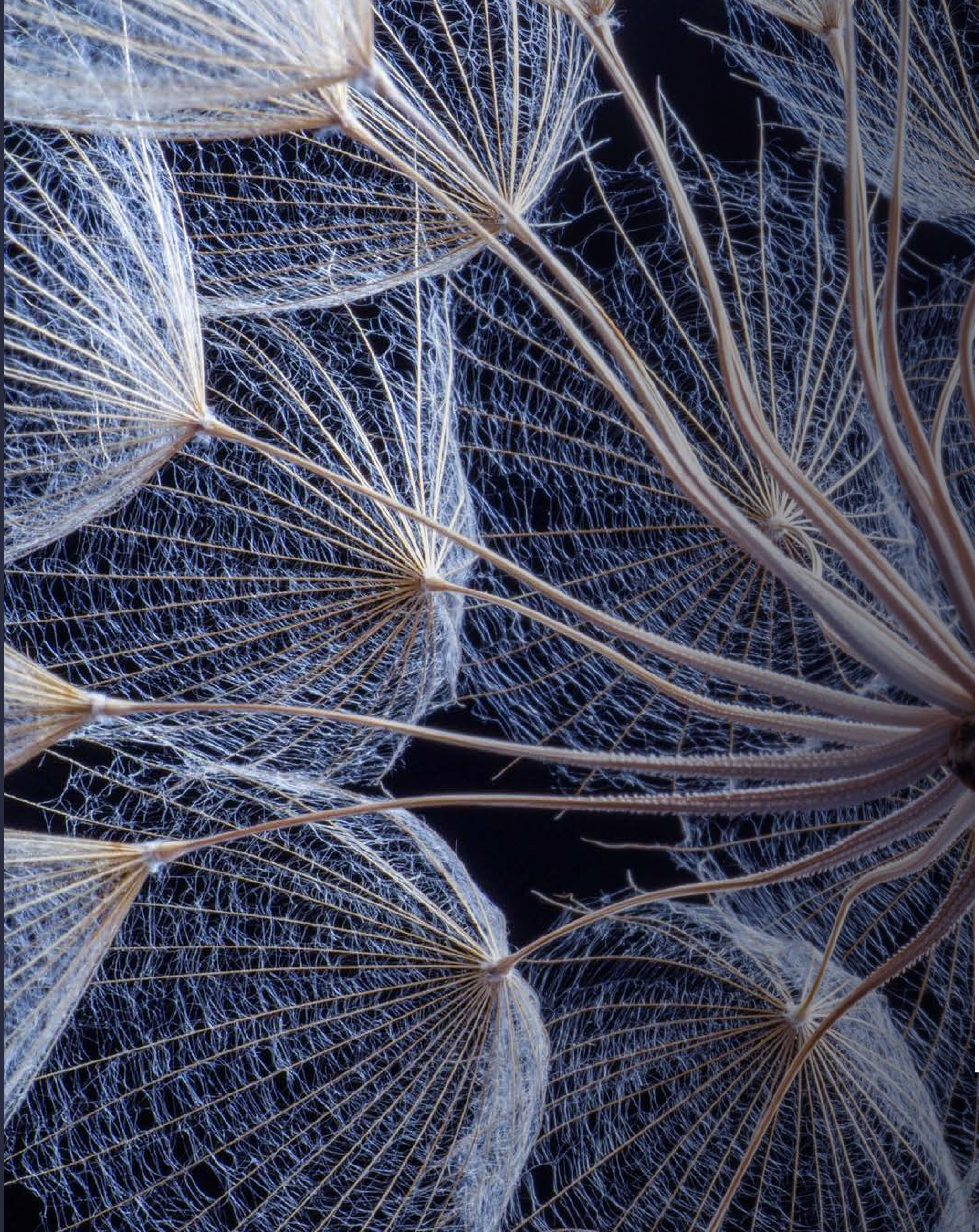

Case study

Managing ESG risks in the healthcare sector

Issue: Our investment staff considers sustainability throughout the investment process, starting with idea generation. ESG analysis adds value to our issuer research from the start by enabling our analysts to avoid risks.

Action: Over the last few years, one of our equity analysts covering the healthcare sector monitored a provider of medical sterilization equipment and services. In regular operations, we learned the firm used ethylene oxide (EO), a known carcinogen. After some reports about a potential leak at one of the issuer's sites, our investment analyst recommended that we avoid the company as an investment, despite the fact that more traditional valuation methods seemed to suggest the company could be an attractive investment in the near term.

Outcome: In 2022, the first verdict of nearly 800 lawsuits regarding management of this company was reached, which significantly affected the company's valuation. Our strong ESG integration practices and analyses led us to avoid risk on behalf of clients in this instance.

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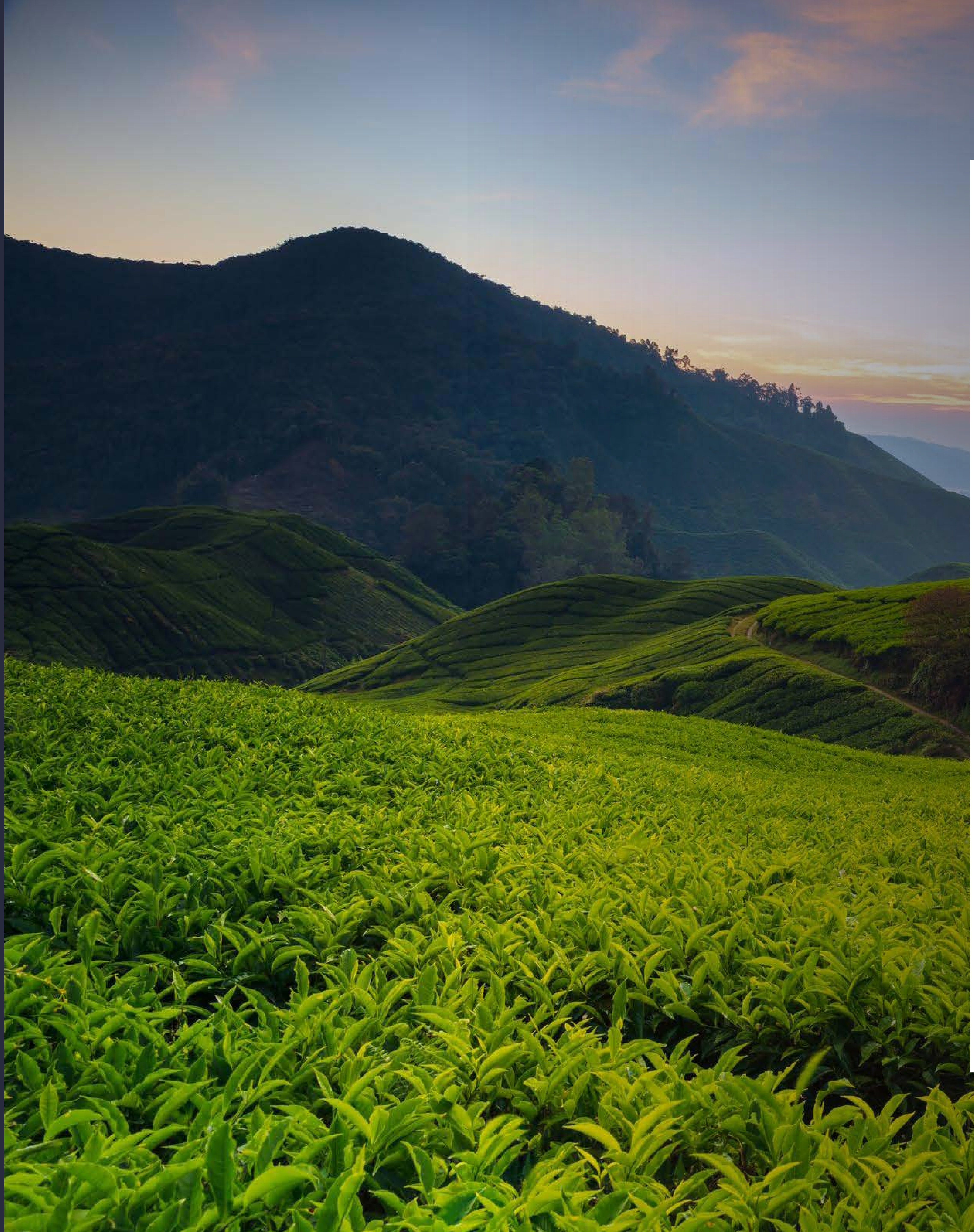


Case study

Manulife Investment Management global climate bond strategy

In meeting client demand for investment in climate change solutions, we've developed our global climate bond strategy, which takes an advanced approach to the intersectionality between climate action and ESG integration. Understanding that the world's path to net zero needs capital expenditure and green infrastructure, clean technology solutions, and other initiatives by corporate issuers to reduce emissions, the strategy generally focuses on what we believe are climate leaders that either:

- have low GHG emissions intensity relative to the portfolio benchmark,
- have a science-based emissions reduction target, or
- derive at least 20% of revenues from green solutions and clean technology.

In addition, the strategy may invest in thematic bonds where the use of proceeds has climate-related objectives.

Private asset classes

In our private markets portfolios, we're frequently investors in and simultaneously operators of assets, which we believe gives us a unique perspective on sustainable business practices and concerns. For example, where we invest and operate assets in our real estate, timberland, and agriculture portfolios, we seek to enhance the value of our assets and have a positive impact on all our stakeholders. In our infrastructure and PE&C investments, we focus on building strong relationships with companies, sponsors, and co-investors, which enables us to take a meaningful approach to sustainability and enhances our influence over key assets and portfolio companies.

Moreover, as long-term investors and as a steward of our clients' capital, we're able to use our broad experience with sustainability implementation, research, governance, and collaboration to manage sustainability risks and opportunities over extended time horizons in all our asset classes.

Infrastructure

The importance of sustainable investing in infrastructure is particularly apparent due to the long-term nature of the assets and investment horizon. As such, we believe that good management of sustainability risks and opportunities in our infrastructure investments can lead to long-term sustainable returns.

Our team's ESG integration practices include the following key steps and are applicable to all of our investments across all geographies:

- We use an ESG due diligence process focused on materiality that was developed using a combination of external resources from Sustainability Accounting Standards Board (SASB) and the PRI and our own expertise.
- We document the outcomes of our ESG due diligence in the investment memorandum that's evaluated during the investment committee approval process.
- Once an investment is made, the infrastructure team continues to monitor all material aspects that might affect an asset or company, including ESG factors. The infrastructure team typically seeks board representation, strong protective controls, and/or strong protective governance positions in its portfolio companies. This enables the team to exert influence or veto power regarding key decisions made with respect to a company's commercial or financial operations and, at times, the management of relevant ESG factors.

Real estate

As building owners and asset managers, we follow five sustainable real estate commitments:

1 Minimize our environmental impact
2 Support health and wellness
3 Engage our stakeholders on sustainability
4 Promote responsible business practices
5 Be accountable for our performance

Our approach to sustainability in real estate is based on responsible property investment and aligns with global standards and benchmarks, including GRESB.

We incorporate ESG considerations into all of our investment management, asset management, and operational practices across the real estate value chain, from development and acquisition of an asset through all aspects of asset management and finally divestment. In addition, we've formalized sustainability practices for investments, operations, property management, and leasing. These practices are all summarized in our real estate sustainability program guidebook and supported by resources such as our sustainability in investment and due diligence tool, sustainability clauses in our standard lease, and our building operations' proprietary Sustainable Building Standards. In cases in which third-party managers are responsible for managing properties on our behalf, we require them to adhere to our standard practices.

Across our global portfolio, we set energy reduction targets, as well as targets for water use and waste diversion; in 2020, we set a GHG emissions-reduction target.[6] We report on progress toward these targets annually in our publicly available real estate sustainability report.

Private equity and credit

Within PE&C, the ability to analyze potentially material sustainability issues prior to making an investment allows us to properly account for potential downside risks.

For all investments, across all geographies, the PE&C teams conduct an ESG assessment of each investment during due diligence and incorporate findings into their fundamental analysis; for our co-investments, secondaries, senior credit, and junior credit, an ESG assessment is done of the sponsor as well. To inform their assessments, the teams use an internally developed ESG due diligence tool, which is based on external resources from SASB and the PRI as well as our own expertise.

The outcomes of ESG due diligence are documented in the final investment memorandum, which is presented during the investment committee approval process. ESG documentation in the investment memorandum includes a summary of material sustainability factors, identification and discussion of red flags, areas for improvement, the sponsor's plans to address any gaps, and areas in which the portfolio company is already well advanced.

Once an investment is made, the teams work closely with their investment partners to monitor all material items that might affect the investment or company, including sustainability factors. The investment teams leverage a variety of tools such as shareholder rights, board seats, and our broader relationships with investment partners, who typically control the underlying portfolio companies, to ensure material sustainability issues aren't overlooked.

6 Target is an intensity-based reduction of scope 1 and scope 2 emissions (from a 2018 baseline) for the properties that are within our operational control.

A message from Paul R. Lorentz

Firm overview

Marketwide stewardship for sustainable outcomes

Stewardship code principles and our practices

Stewardship, investment, and ESG integration

Case study

Climate resilience through an adaptation and management approach in real estate

Issue: Climate resilience can be best thought of as the ability to prepare for, endure, and recover from the shocks and stressors of climate change, including the long-term effects of climate change and business risks associated with it.

Action: In our real estate business, we've built a three-step approach for resilience management:

1. **Raise awareness**—To arm our teams with the right information and build internal capacity to manage climate risk and improve resilience
2. **Evaluate risks and opportunities**—To identify and understand climate risks and opportunities
3. **Integrate best practices**—By embedding resilience into our business through tools and processes to mitigate and manage climate risks

Resilience is about more than just property operations. We also focus on embedding resilience into other aspects of our real estate businesses. Within our portfolios, we conduct physical climate risk evaluations during our standard due diligence process. We've also started to incorporate climate risk and resilience into our real estate development process, are looking to incorporate physical climate assessments when evaluating site selection, and are in the process of identifying standard resilience measures to include in the design process.

Timberland and agriculture

The guiding principle of our timberland and agriculture businesses is that good stewardship is good business. As managers of major forest and agricultural holdings throughout the world, we have an opportunity to contribute to solutions to global sustainability challenges.

We consider all factors that we believe may have material financial implications for those investments—including sustainability factors. Sustainability factors are particularly salient for land-based real asset investments, and our timberland and agriculture businesses are built around five pillars of sustainability:

1 Climate stability
2 Ecosystem resiliency
3 Watershed protection
4 People empowerment
5 Community prosperity

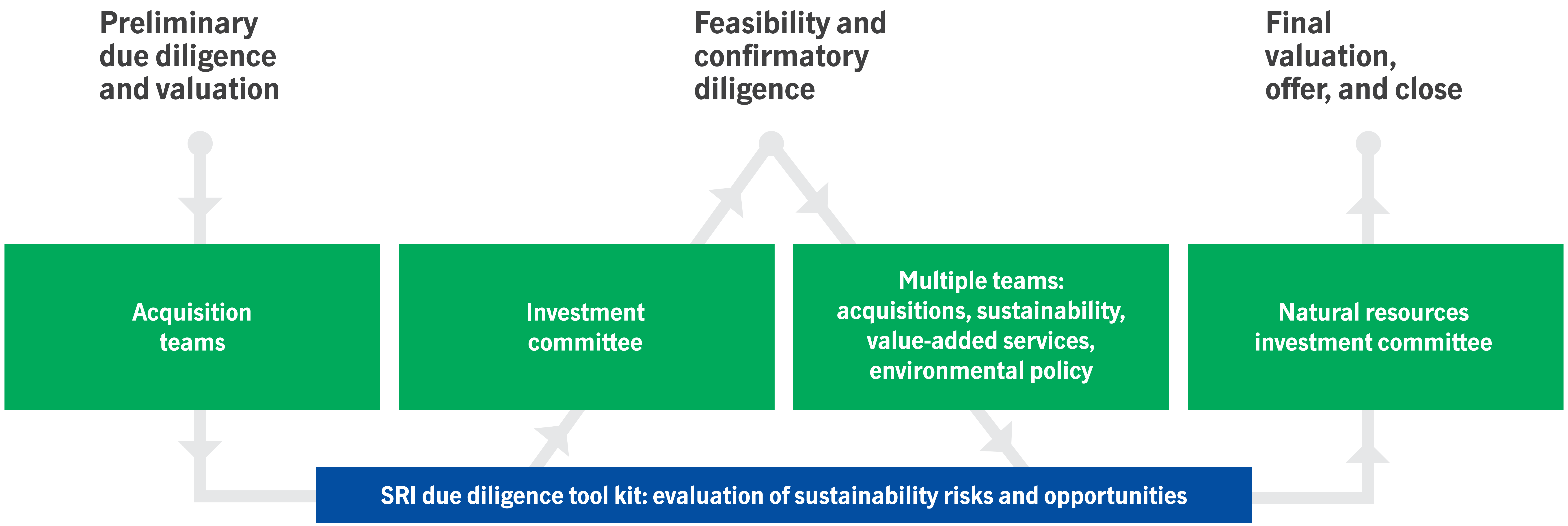
To ensure that all relevant ESG risks and opportunities are considered in a standardized way across every possible deal, our acquisition teams use our SRI tool kit, which has been developed to enable a consistent and structured approach to assessing the characteristics of an investment opportunity. The tool kit is structured based on our five pillars of sustainability and documents relevant assessments undertaken to address each of them.

We manage our forests and farms not only to secure competitive financial returns, but also to achieve key environmental and social objectives set out by third-party sustainability standards. In forestry, this includes the Sustainable Forestry Initiative and the Forest Stewardship Council, and in agriculture, this includes Leading Harvest and others; for example, GlobalG.A.P., USDA Good Agricultural Practices, LODI RULES, and SAI-FSA.

In order to ensure that we operate consistently with the standards, we follow a comprehensive set of stewardship principles that integrates the development, management, and operation of working lands for useful products with a commitment to conserve soil, air, and water quality; biological diversity; wildlife habitats; and participation in vibrant, healthy communities. These principles inform more granular stewardship policies that guide our property management professionals in day-to-day asset management decisions.

Timberland and agriculture SRI tool kit

How we incorporate sustainability into the investment process



SRI theme	Climate stability	Ecosystem resiliency	Watershed protection	People empowerment	Community prosperity
Risks and opportunities	• Climate change impacts • Emissions • Deforestation • CO_2 sequestration	• Sensitive lands • Protected areas • Biodiversity • T&E species • Mitigation banking	• Water quantity/quality • Flood, drought risk • Groundwater depletion • Water banking	• Health and safety • Training and development • Labor practices • Human rights	• Community relations • Indigenous peoples • Job creation • Research, internships
Dimensions	Likelihood x Impact x Mitigation x Resources				

T&E refers to threatened and endangered.

Connecting investing and stewardship

Active ownership is a key component of our investment and ESG integration processes. Through our stewardship activities, we exemplify sustainable management—or influence the management—of assets to preserve and unlock value within our portfolios.

As investors, we exercise our rights and engage with stakeholders to influence the adoption of best practices in operations, reporting, oversight, and governance of material sustainability risks and opportunities. Our investment teams execute active ownership rights and responsibilities in collaboration with partners in and outside the firm.

In the case of proxy voting, to take an important example, multiple functional areas collaborate with our investment and sustainability teams to execute our clients' rights in accordance with voting policies while seeking to arrive at decisions that will serve the best interest of clients. Active ownership in our private markets business looks different but is no less important. As an example, we directly operate a majority of our timberland and agriculture investments, meaning that we have farmers and foresters on staff to actively manage these assets in a way that creates value for our investors while maintaining or enhancing the sustainability of the assets themselves. These stewardship practices are vital to the successful performance of our portfolios.

Looking ahead

Since adopting our inaugural ESG policy in November 2015, we've rapidly embedded sustainability factors into our investment processes and operations and demonstrated innovation and commitment in what continues to be an evolving field. We anticipate organizing more thematic training work in 2023 to focus more specifically on various emerging areas of sustainability, and we anticipate publishing further statements to assist clients in understanding our approach to a number of sustainability issues.

A message from Paul R. Lorentz

Firm overview

Marketwide stewardship for sustainable outcomes

Stewardship code principles and our practices

Monitoring managers and service providers

Monitoring managers and service providers

Manulife Investment Management is committed to ethical business practices and good governance, both of which are integral to how we want to do business and to our long-term success. Achieving this requires a commitment to integrity and consistent high standards from all partners, including our vendors and external managers.

Our approach to working with providers

A vendor code promoting integrity and performance

To best ensure that our vendors act with integrity and meet our high standards consistently, we ask them to adhere to the requirements of Manulife's vendor code of conduct:

- **Full compliance with applicable laws and regulations,** including with anti-money laundering, antitrust, and anti-corruption laws
- **Robust security of firm and client data through adherence** to all privacy and nondisclosure agreements and policies, processes, and controls to ensure that all information provided by Manulife Investment Management remains confidential and secure
- **Commitment to its employees** through fair labor practices, a culture that treats associates with dignity and respect, and a workplace that provides protection against workplace harassment, abuse, discrimination, and violence
- **Processes to identify human rights violations in the supply chain,** first through compliance with all applicable antislavery and human trafficking laws, statutes, regulations, and codes, and then through due diligence processes across its operations

- **Safe workplaces** that provide healthy environments for its employees, with practices to minimize or eliminate any hazards
- **Limited impact on the environment** through documented policies and procedures that minimize, or mitigate, the environmental impacts associated with business activities

Ongoing evaluation and oversight

We monitor vendor risk and performance throughout the life of a partnership with a vendor through both formal and informal avenues. Our procurement team partners with local business units to conduct regular reviews of service provider capabilities. Each review provides a snapshot of a vendor's performance at a specific moment. Aggregated over time, these snapshots reveal performance trends over the term of the business relationship. We score vendors through these assessments on:

- Quality of products and services
- Knowledge and technical expertise
- Data integrity
- Billing and invoicing
- Focus on generating efficiencies
- Timeliness of services and reporting
- Incident response
- Relationship management
- Adequacy of staffing and resources
- Commitment to collaboration

We also communicate with our vendors—sometimes daily—regarding their products and services, and we frequently share best practices and, as necessary, offer suggestions to help our vendors make improvements to products and services. This communication creates more dynamic partnerships that allow us to respond quickly to the changing business environment and our clients' needs.

We reserve the right to monitor, assess, and audit all vendors according to our vendor code of conduct, and we may discontinue business with any vendor that doesn't comply with our code's provisions.

Supplier diversity

An important aspect of vendor procurement is supplier diversity. We're in a world in which historically underrepresented groups and their allies are challenging the status quo, and we believe more equitable wealth generation opportunities will help pave the way toward a sustainable future. Supplier diversity is one way to combat inequities when engaging with suppliers. Our supplier diversity program recognizes companies owned and operated by those who are part of traditionally underserved groups, including—but not limited to—minorities, women, LGBTQ+, persons with disabilities, veterans, service-disabled veterans, and Canadian indigenous peoples.

In cases where we operate assets in real estate, timberland, and agriculture, Manulife Investment Management's procurement teams representing the asset classes listed above oversee the specific procurement activities. They're supported by sustainable investing professionals who seek to ensure observance of responsible contracting practices and assist in integrating responsible contracting terminology into contracts. These professionals also guide updates to responsible contracting practices and provide training on this approach to procurement professionals, as needed.

We remain focused on the integrity of ESG data

The quality, breadth, and delivery of ESG data and research are directly tied to our success as a firm, given our belief that ESG integration drives performance across the spectrum of our products and services. The dynamic nature of sustainable investing requires us to identify and partner with vendors that provide robust data and research today and also demonstrate the ability to innovate and anticipate the needs of tomorrow.

We regularly assess new products, emerging data sets, and tools to ensure that we continue to engage providers that best match the needs of our clients, our firm, and our stakeholders. In 2022, we continued to see emerging data providers in the ESG space, especially around biodiversity. We also expect to see more data disclosed by companies in relation to the EU taxonomy, and we continue to seek further data to enhance our ability to review against the SFDR framework and other emerging standards.

We also work regularly with our existing ESG research and data providers to help them improve their services; we've generally found, for example, that ESG data and research are more widely available for public equities than for public debt. We're working with our providers to expand debt issuer coverage, especially for smaller issuers, emerging-market issuers, and issuers that don't have equity shares listed on a public exchange. We perform regular data quality assessments of our vendors and provide input on proposed methodology changes.

Confronting data errors

As data providers rely on a number of sources of information to generate their data, and with corporate disclosures still evolving with respect to sustainability reporting, we may find that some data is inaccurate or incomplete. When we identify such issues with third-party information, we may engage with the vendor to have the data updated or corrected. We may also seek assurance from the service provider that its processes are improved to prevent similar issues in the future. We track all such vendor engagements and requests for improvement for regular review so that we can address any substantial issues during the contract renewal process. In 2022, we had 35 interactions with service providers, some of which included requests for data updates, coverage expansion, or corrections.

Due diligence of our proxy voting vendor

Manulife Investment Management holds a due diligence review of our proxy vendor on an annual basis. Functional specialists from across the firm attend this meeting, including leaders from procurement, compliance, legal, operations, information security, and investments, to ensure that various aspects of the proxy vendor's operations and business are closely scrutinized. We review ethics and conflicts of interest policies, regulatory updates, holdings management, vote execution, research, policy development, information security, service updates, and material changes to the vendor business over the past year. Items from this meeting can drive dialogue between Manulife Investment Management and the proxy vendor over the following months as we gather relevant information and work toward service enhancements. In addition to our annual due diligence, in 2022, our equity and sustainable investment teams met with our proxy vendor to discuss gaps we found in their issuer research at specific company annual meetings. The vendor subsequently updated its processes for reviewing research to ensure consistency across its work through a new approval process.

Centralized ESG materiality framework

At Manulife Investment Management, we have a central research platform that our public markets investment teams may use to track issuers, keep research and engagement notes, and review relative performance, among other functions. We partnered with the vendor that provides the platform to create a custom application within the research platform that houses our proprietary ESG materiality framework into our central research database. In collaboration with our vendor, we launched this application on our research platform. This enhances our ESG integration by highlighting material ESG risks and opportunities for specific issuers.

Requirements for our real estate managers

In 2021 and 2022, we migrated our North American real estate platform to third-party property managers. Included in both the RFPs and the property management agreements are ESG requirements and sustainability reporting. We require our third-party property managers to adhere to our own sustainability policies, to provide updates annually according to our own Sustainable Building Standards, to provide utility bills on a monthly basis, and to provide requested ESG metrics for information on, for example, waste audits and diversion reports, energy audits, refrigerant or diesel consumption, tenant engagement activities, and occupancy counts.

Selection and oversight of third-party managers

Our public markets GMR team is responsible for investment evaluation, decision-making, and oversight of assets where Manulife Investment Management has delegated some, or most, investment management functions to a third-party manager. This team applies a combination of quantitative and qualitative processes to monitor and assess our delegated management of client assets. The GMR team responded to industry demands by continuing to expand and refine its ESG oversight process in 2022. This included conducting an industry survey of stewardship practices to enhance oversight of how the delegated investment managers vote proxies on behalf of our investors; additionally, the team developed tools to keep up with the rapidly changing global climate risk disclosure environment. The team has conducted a review of its processes to ensure it's able to provide the same rigorous standard of investment manager oversight to all delegated managers.

- **ESG-dedicated sessions—**Held with portfolio teams during annual due diligence meetings; for larger strategic partners, the team will also meet with dedicated ESG-focused roles where applicable
- **Quarterly calls—**Coverage of ESG integration in the context of fundamental drivers of portfolio positioning during quarterly calls with investment teams
- **Due diligence questionnaire—**ESG-specific questions in the annual due diligence questionnaire sent to managers
- **Access to ESG data—**Team analysts have access to ESG reporting tools and data through several vendors and sources
- **Formal internal assessments—**Holds formal ESG assessment discussions between analysts and the regional heads in which the regional heads check analyst reviews against a broader market perspective

Our PE&C group maintains a rigorous process for selecting, evaluating, and monitoring third-party managers. The investment teams have developed a robust process and set of tools for evaluating third-party manager ESG practices and performance throughout the investment cycle. The approach leverages industry-leading practices, including resources from the SASB and the PRI. The process focuses on several key areas: screening and due diligence, investment decision and documentation, active ownership and monitoring, measurement and reporting, and management of incidents.

Case study

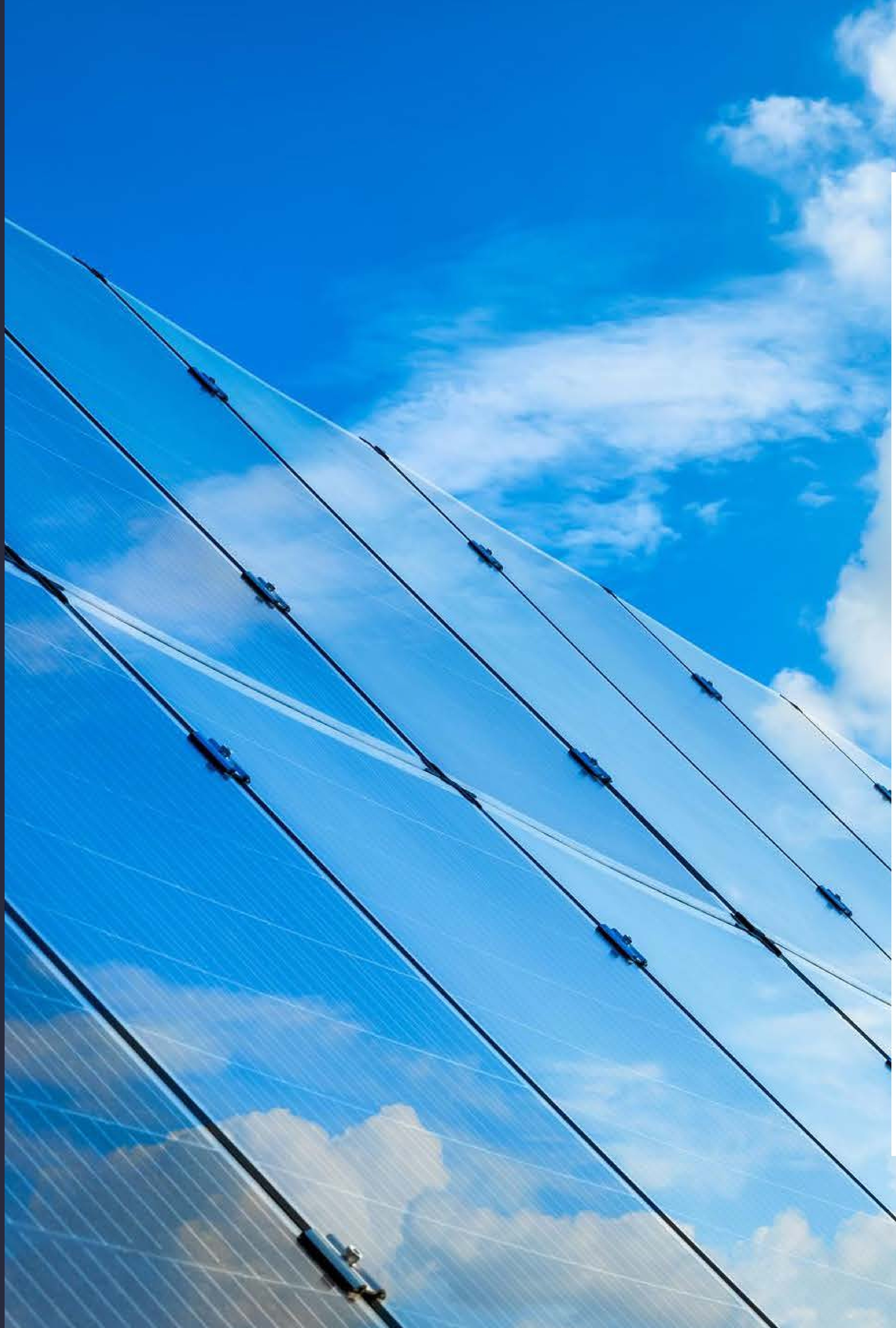
Promoting sovereign fiscal transparency through credit ratings

Issue: Ratings providers routinely solicit stakeholders for input whenever they amend their methodologies given that small changes to those methodologies can have an impact on capital flows. We therefore seek to provide input where we can in relation to such proposed changes whether directly or through a collaborative group.

Action: In 2022, we joined several peers through the EMIA to respond to a proposed ratings methodology amendment for sovereigns at an influential credit ratings provider. We expressed our support for the inclusion of a fiscal transparency metric, specifically a reference to the Open Budget Index, as it would provide greater insight on the quality of sovereign governance and creditworthiness.

Outcome: The credit agency noted in its final methodology that it may consider the Open Budget Index in its qualitative review of sovereign fiscal policy.

In 2022, we also evaluated several biodiversity data providers and ran data quality analysis. In the emerging biodiversity data space, there are a variety of metrics and methodologies available for modeling impacts and dependencies on biodiversity and nature. As investors and businesses start to acknowledge biodiversity loss as a systemic risk, we expect the company disclosure and data quality to improve in the future, particularly following the finalization of the TNFD framework in 2023.



Case study

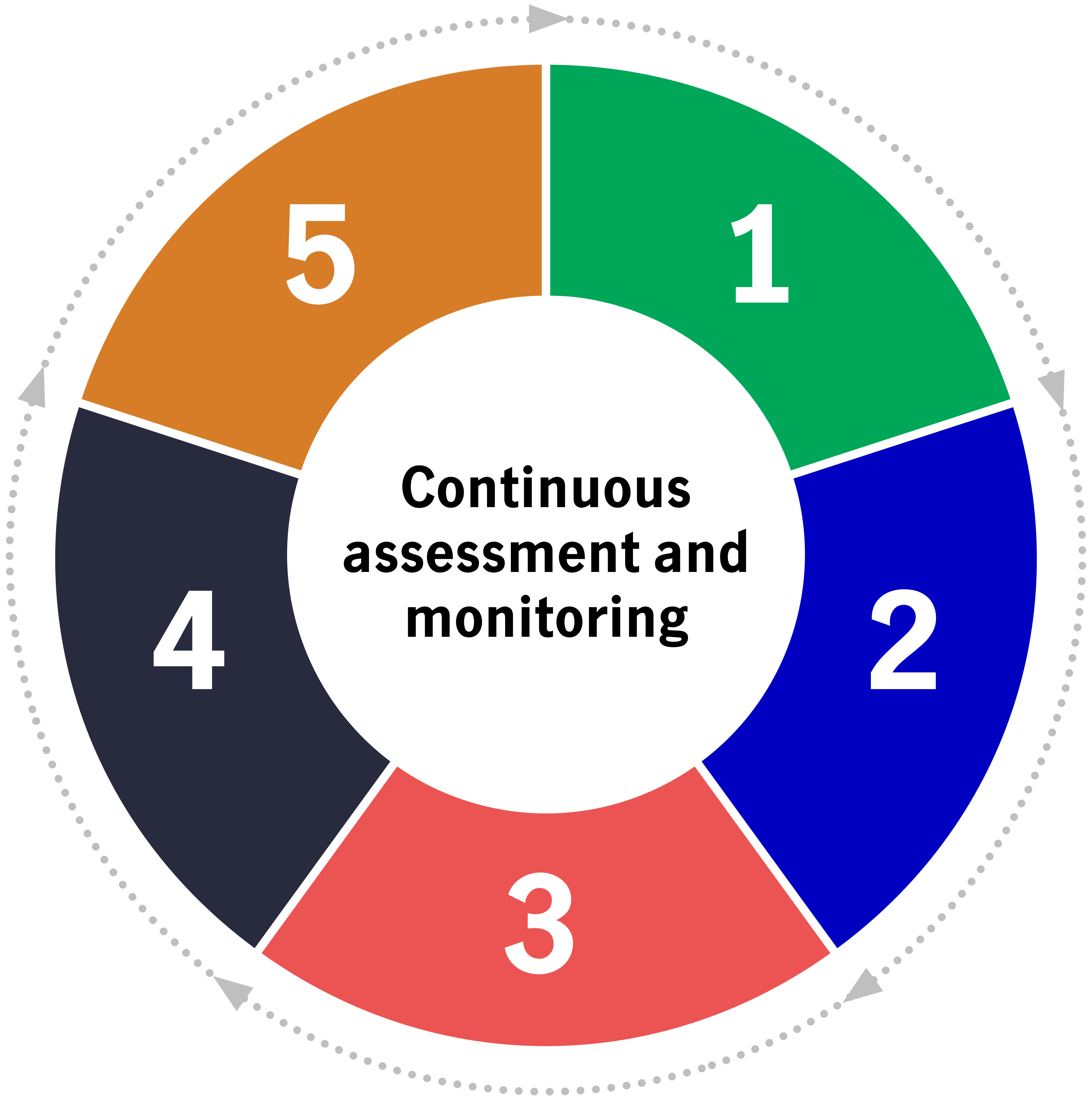
Vetting third-party vendor data

Issue: When evaluating investment opportunities for our thematic sustainable portfolios, we review several data points covering the sustainability characteristics of issuers in the investment universe. This past year, for example, we identified a renewable energy producer in India that builds and operates wind, solar, and hydro projects at scale for potential inclusion in our sustainable investment universe. Our third-party vendor, however, flagged a high amount of GHG emissions for the issuer, which would have eliminated it as an investment opportunity under our proprietary screens. This didn't seem correct to us as the issuer was focused completely on renewable power generation and distribution.

Action: We engaged with the third-party vendor regarding the issuer's emissions data. We determined with the vendor that during the company's transition from a private issuer to a public issuer, the vendor incorrectly attributed certain revenues to natural gas power generation and was also associating estimated emissions with that revenue.

Outcome: On our request, the third-party vendor corrected the error. The company is no longer flagged under our proprietary screening processes as having high emissions and is now eligible for investment in our suite of sustainable products.

Robust manager oversight process



1 Daily
- Monitor performance and positioning
- Interactions

2 Weekly
- Team meetings
- Sharing of best practices

3 Monthly
- Global research meetings
- Investment risk oversight committee

4 Quarterly
- Board and investment committee meetings
- Strategy investment reviews

5 Annually
- Due diligence meetings with portfolio managers, risk managers, and key executives
- Annual manager risk questionnaire

Looking ahead

The ESG data, research, and ratings provider space is highly fragmented. No one company provides the coverage, quality, and solutions that meet the diverse investment exposures that Manulife Investment Management has through our portfolios. At the same time, vendor and data service offerings continue to evolve at a rapid pace, and we look forward to evaluating new vendor capabilities and functionality over the coming year. We hope to identify new features and providers that will help us best integrate biodiversity data into our investment processes and support our product suite. We may also implement changes to third-party manager proxy voting practices depending on the findings from our reviews.

Engagement

We believe that engaging with companies on their most material sustainability issues can enhance their long-term competitiveness and profitability, generating collective prosperity for investors, companies, and society as a whole.

Reflecting on our ability to mitigate systemic risks, we believe we've met with some success while we also recognize that more work needs to be done. In 2022, we launched an initiative in which each of our investment teams identified two issuers in their portfolios with which to engage on climate risk. It's early days in this initiative, and it's primarily focused on due diligence and garnering an in-depth understanding of how the issuers are addressing climate risks and opportunities specific to their own operations. Over time, as we work with these issuers, we hope to encourage improvement in practices. Through this engagement process, we hope to influence issuers to increase their public disclosures, which will in turn reduce risks to the companies while increasing our portfolios' resilience to climate change risk. We've also begun to engage with a subset of issuers on deforestation risk to understand our exposure across portfolios and company progress on the issue.

Our approach to engagement

We use engagement as a tool to both gather information and influence other stakeholders to adopt best practices. Engagement with companies helps to deepen our understanding of the sustainability issues underpinning their strategies while providing opportunities for them to better understand our investment process and objectives. As investors, we also play a key role in encouraging companies to adopt sustainable business practices that promote stable long-term growth and reduce the potential impact of material sustainability risks over time. We engage with companies on a range of substantive corporate, strategic, and ESG matters that could alter their valuation, fundamental standing, or strategy.

The diversity of our engagement approach

Given our boutique structure, engagement priorities will differ from investment team to investment team depending on their portfolios' focus and/or holdings profile. The size of a holding within portfolios and the varied nature of any given emerging risk or severe controversy are among the factors that can prompt and shape these engagements.

Goals can also change by region; for example, disclosure of ESG information might be a focus for emerging markets where this regular disclosure isn't common practice, whereas improvements in ESG management and performance may be more commonly scrutinized in developed markets, given their stronger record on sustainability disclosure. Given the varied composition of both our portfolios and assets, each investment team drives its engagement priorities alongside consideration of any of these relevant factors in consultation with our sustainability professionals.

Dividing audiences by asset class

We're aware that, in our engagements with public markets, we may be having similar conversations across portfolios but with representatives that vary by asset class; in listed equities and corporate bonds, for example, we seek to interact with senior management teams. When engaging sovereign bond issuers, we look to speak with a government representative in an environmental or financial role. In the case of municipal bonds, we open a dialogue with local finance and elected officials. In private markets, where we own and operate the assets and businesses, we have a direct line into the business and can influence it directly through our board seats and management teams. For private investments where we don't have control or board seats, we seek to interact with the sponsor or general partner.

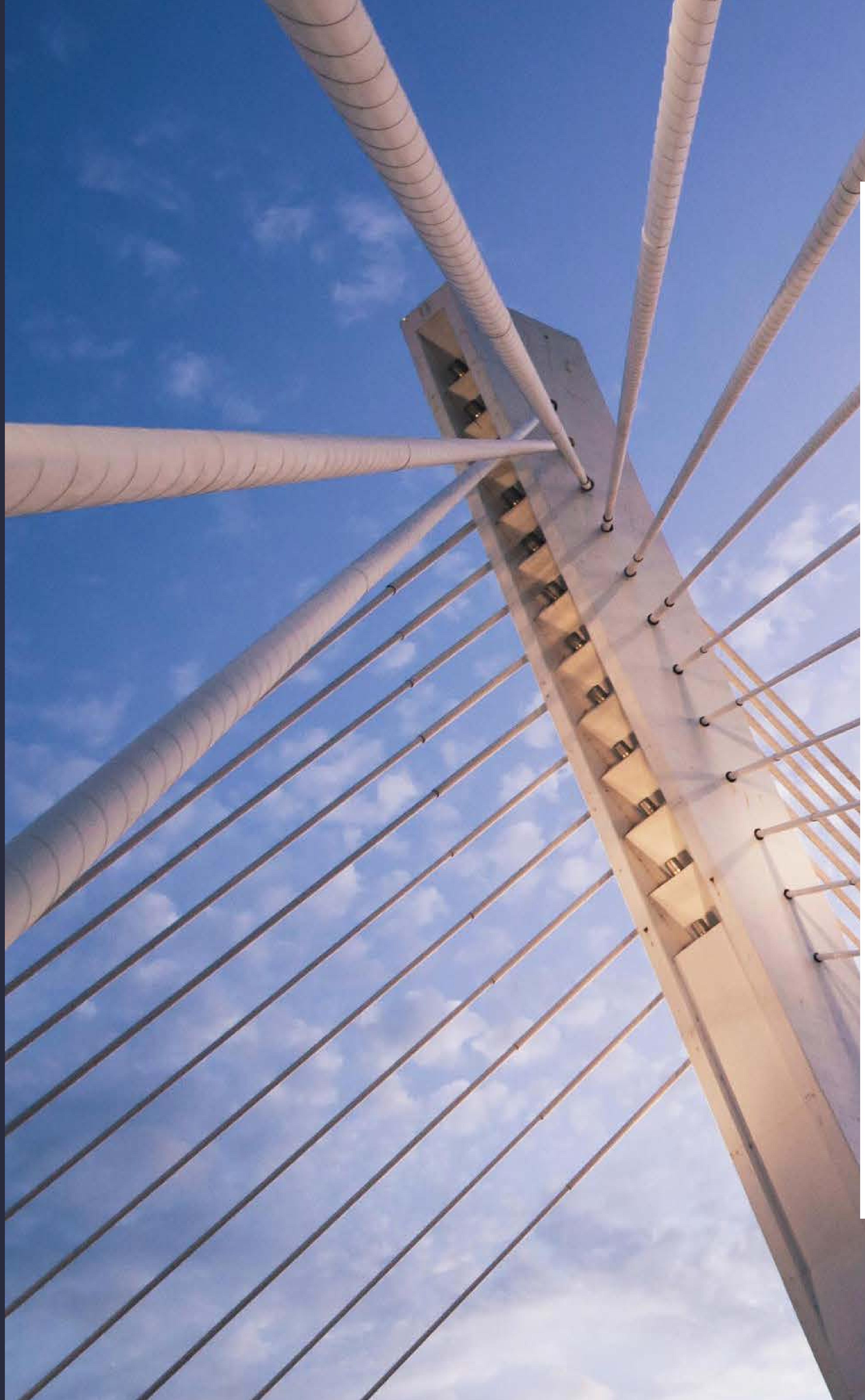
In-house engagements focused on outcomes

Manulife Investment Management conducts all engagements using internal staff; we don't delegate the responsibility of engagement to a third party. We take this approach because we believe that what we learn from our engagement efforts is an important component for determining intrinsic valuation, which results in an improved risk/reward profile for our portfolios. In public markets, we prioritize individual engagement with companies when our assessment suggests that sustainability factors are potentially material to an investment's risk/reward profile. We may also consider the significance of the investment within a given portfolio, our degree of influence, or the expected contribution to long-term value creation derived from successful engagements.

We often establish objectives in our engagement efforts. Once we've identified a material issue, we aim to collaborate with the company to address it. We then track that company's progress toward resolving the issue over a reasonable timeline, regularly evaluate improvement, and, in the event that we're unsatisfied with progress, may escalate any given issue.

All public markets investment staff contribute to a centralized recordkeeping and tracking system maintained by the sustainable investing team. Using this system, we track requests to companies to check that management progress is meeting our outcome expectations against a defined timeframe. This internal portal is open and collaborative to encourage discussion among investment staff across strategies.

Highlighting engagements for clients through the year—In 2022, we launched a case studies webpage populated with examples of recent engagements and their associated outcomes. We believe this provides clients and other stakeholders with insight into our activities in a dynamic format as we update the page through the year.



Case study

Addressing worker safety

Issue: One of our investment teams held a position in a large North American integrated oil and gas company. In addition to ongoing monitoring of climate risk, the investment team was concerned that the issuer had several worker accidents in its operations over the past several years; many of the safety issues revolved around contract employees. The CEO was removed in 2022 in response to the most recent safety incident, but it was generally unclear as to how the company planned to improve its safety management practices to prevent further incidents.

Action: Our team reviewed safety practices versus peers and consulted with our internal sustainable investment team to identify engagement points and suggestions with the company. We then engaged with the company to identify our concerns around safety culture and reporting as well as to encourage the company to review compensation incentives around employee safety throughout the organization.

Outcome: This remains an ongoing engagement and we're monitoring progress. At the end of 2022, however, the company announced that it was planning to reduce the number of contract employees and to bring more positions in house for increased control and oversight over employee safety. The company also announced compensation incentive reform to increase alignment with performance on worker safety.

Case study

Retaining talent in technology

Issue: The market for skilled labor across technology companies is highly competitive, which makes retention of employees a priority to compete in that sector. In our review of a U.S.-based semiconductor holding company with a $1 billion market cap, we noticed that the issuer didn't have any disclosure regarding annual performance reviews for employees. We view annual employee performance reviews as a best practice for human capital development, specifically continuous improvement, retention, and risk oversight, and we appreciate any broader company disclosures related to those practices.

Action: In early 2021, our team engaged with executive leadership to inquire about the issuer's employee performance management and oversight. The management team indicated that it had performance review processes in place, but as a fairly young public issuer, they could improve both the regularity and disclosure around performance oversight. We articulated our desire to see more reporting regarding the establishment of employee review procedures and cited industry peers with robust processes.

Outcome: In 2022, the company subsequently dedicated a portion of its sustainability report to an explanation of the employee performance review process and indicated that it now conducts performance reviews of employees at least annually, and in some cases, quarterly. The company believes the performance review process will foster employee growth, enable the recognition of employee achievements, and enhance communications.

From engagement volume to a focus on impact

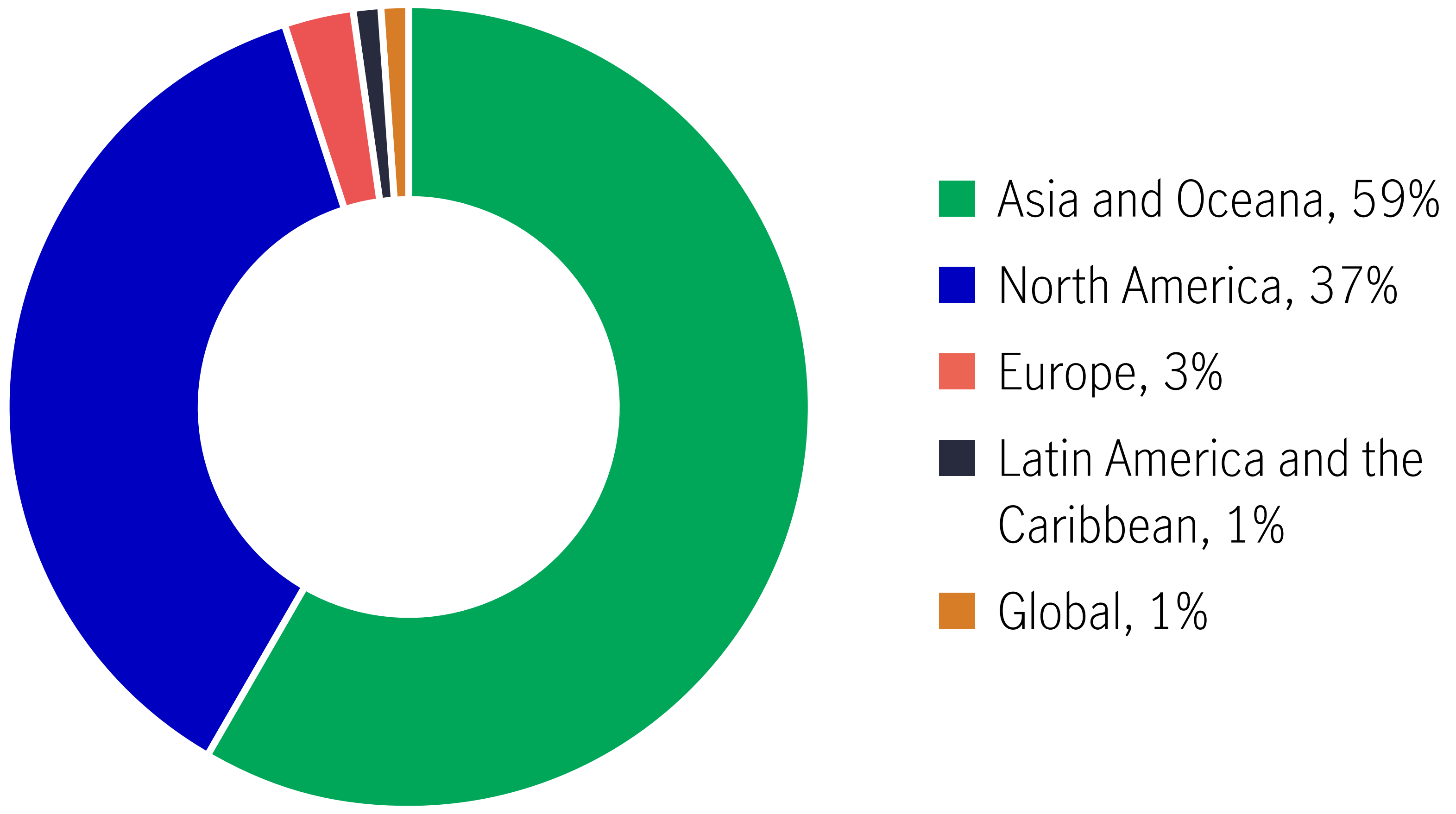
Both the investment professionals and sustainable investment team members at Manulife Investment Management have conversations with issuers across our holdings. We shifted our focus from scaling up the volume of conversations to outcome-oriented engagement and seeking to influence firms to enhance their practices and mitigate the impact of material sustainability risks. Although we recognize that this focus on outcome-based engagements can take months—if not longer—to achieve our desired results, we believe our focus on collaboration with firms to mitigate risk is beneficial to our portfolios and clients over the longer term.

1,271 total engagements in 2022[7]

781 unique issuers engaged

38 unique influencers, regulators, NGOs, governments, and vendors engaged

All engagements by region[8]



NGO refers to nongovernmental organization.

7 May have multiple engagements with a single party. **8** The global category includes vendors, NGOs, and influencers with a worldwide focus and coverage. Mexico is included in the Latin America and Caribbean category. Percentages may not add up to 100% due to rounding.

Case study

Building a diverse pipeline of talent with a semiconductor company

Issue: One of our equity teams invested in a developer and manufacturer of automatic test equipment in Malaysia to gain exposure to the growing global need for semiconductors. The issuer specialized in equipment that tested semiconductor wafer and packaged devices. As part of our due diligence, we held a dedicated meeting with the company to discuss its sustainability strategy and governance structure. While the investment outlook was promising, the board lacked any gender diversity, which can potentially enhance board performance. We also preferred to see a greater number of independent directors to better ensure objective decision-making at the board level.

Action: We continued to engage with the issuer with an 18-month timeframe, requesting that it appoint at least one woman to the board of directors; we also expressed that we preferred any nominee be independent under the local standards. The management team was receptive to our views given its growing focus on sustainability factors. The founder, for example, explained that he had taken it on himself to write the company's 2021 sustainability report and completed sustainability coursework. While we had several opportunities to vote against directors to express our concerns, we refrained from doing so, choosing instead to give our engagement time to achieve results.

Outcome: In April 2022, the issuer appointed an independent female director, committed to training internal female director candidates, and is now an advocate for female entrepreneurs in the community. We believe the company isn't only building a diverse pipeline of talent, but also taking steps to improve management of sustainability risks and opportunities more generally.

Top engagement discussion topics in 2022[9]

Discussion topics	Engagement
CEO/management team	33%
Board structure	31%
GHG emissions	26%
ESG disclosure	19%
Energy management	16%
Physical impacts of climate change	8%
Labor practices	7%
Executive compensation	6%
Material sourcing and efficiency	5%
Management of the legal and regulatory environment	5%
Employee engagement, diversity, and inclusion	4%
Human rights and community relations	4%
Product design, lifecycle management, and/or packaging	4%
Access and affordability	4%
Water and wastewater management	3%
Board diversity (gender/ethnicity)	3%
Employee health and safety	3%
Data security	3%
Biodiversity	3%
Product quality and safety	3%
Waste and hazardous materials management	3%

9 This list relates to engagements with public markets issuers and was compiled using data from our proprietary engagement tracker, as of December 31, 2022. A single engagement may be represented across multiple topics as a single engagement often covers a range of issues. The list above reflects topics that we track that were discussed in at least 3% of our total engagements.

Engaging partners in private assets

Throughout the investment lifecycle of all private asset classes, we continuously engage with our co-investors, investees, and business partners to encourage adoption of best practices, and we monitor the ESG-related data available to help ensure the efficacy of our approach. In private markets, where we directly operate our assets, we weave sustainability into our operational strategies and execution.

Where we don't operate assets ourselves, we build meaningful partnerships with leading operators and sponsors. Once we invest, our team maintains a close relationship with the management teams of companies and our investment partners to continue monitoring material aspects of the investment, including ESG factors. In some cases, we may take a position on a board; in other cases, we may request protective governance rights and controls.

Looking ahead

In 2023, we'll continue to focus on outcome-based engagements. We'll continue to set goals for investment teams that ensure sufficient outcome-focused engagements are always in progress. We're also planning to review our tracking and recordkeeping tools and processes associated with engagements with a view to enhancing our data analytics and reporting.

Collaboration

Around the globe, we participate in a wide variety of collaborative engagements with industry peers, nonprofits, NGOs, and supranational entities. This work allows us to expand the scope of our sustainability-focused activity while helping us build more resilient portfolios. Our collaborative engagements may focus on individual investments or systemic risks—and sometimes both.

Our approach to collaborative engagement

Collaborative initiatives allow us to share perspectives with, and to learn from, peers and third parties while also amplifying our influence as we encourage improvements across issuers, markets, and policymakers to build investment resiliency. These collaborative engagements have proven to be a valuable aspect of our stewardship activities.

Our collaborative efforts take various forms but typically focus on the identification and mitigation of systemic risks that may have an impact on performance across our portfolios over a longer timeframe. Common topics for collective engagement include climate change, governance, risk management, human rights, diversity, and appropriate sustainability disclosures. The collaborative action we may take to address these risks can be an effective pathway to leverage influence and enact change with the goal of reducing risk and capturing opportunities. Our activities may target change at a systemic level through our influence with standards setters as they create and update frameworks, or we may engage with issuers through collaborations to encourage best practices in management of sustainability issues. Through either avenue, we're working to build iterative resiliency across our portfolios.

Amplifying our impact through collaboration

Market education

We engage with a wide range of industry participants and seek to be a leading voice

Regulator/policy focus

We support regulators' efforts to formalize the sustainable investing industry

Issuer focus

Our collaborative leadership helps us steer markets and the economy

Engaging on systemic risks one investment at a time

Several initiatives to which we belong work to address systemic risks but do so by working toward singular outcomes at individual issuers. We believe that addressing some risks through focused action will gradually lead to a strong sustainability profile across our portfolios.

As part of our evaluation of various initiatives, we consider the size of our investments covered by the initiative, the materiality of a given issue, and the resources we'd need to dedicate to the collaboration, among other factors. Once we decide to join a collaborative engagement, we often look to lead discussions with those investments in which our holdings are most affected. Apart from outcomes achieved through our efforts in engaging individual management teams, we also deepen our expertise on issues by learning from our peers and other market participants across a range of sustainability issues and stewardship practices.

Engaging with the market through collaboration

We work through peer collaborations to encourage the development of sustainability standards. Rather than focus on a single issuer in a given engagement, we work through these initiatives to encourage entire industries or markets to adopt best practices in governance, operating, or disclosure standards. We find that these initiatives help us articulate what practices and information we find most valuable in our investments while learning from peers and third parties about the most recent research and thinking on current and emerging risks.

2022 collaborative activity

We continued to participate in collaborative initiatives where we believe we can have a substantial impact. Our work with Climate Action 100+ continued, and we also executed with peers on new engagements. We began dialogue with a mining company as part of the CEC initiative and with a software company as part of an engagement initiative with the 30% Club Canada. We also continued to work with the AIGCC, where we currently chair the Physical Risks and Resilience Working Group. We were active as a member of EMIA in engaging with sovereign debt issuers to improve transparency and management of sustainability matters. As members of WBCSD, we co-led development of a Forest Sector Nature-Positive Roadmap that provided a shared definition of nature positive for companies to use. We also joined the Ecosystem Services Market Consortium (ESMC) and partnered with the U.S. Cotton Trust Protocol and Forum for the Future to launch the Eco-Harvest pilot project. In 2022, we increased our commitment to the PRI Infrastructure Advisory Committee by taking on the committee chair role.

Real estate

We sponsored a collaborative industry initiative led by the Urban Land Institute to review the use and coverage of the available ESG certifications and reporting frameworks across the real estate investment value chain to create more transparency and enhance understanding and sharing of market practice.

We're also chair of the Real Property Association of Canada (REALPAC) Zero Carbon Working Group, which convenes Canadian real estate owners and managers to advance industry knowledge on carbon reduction in real estate.

The following examples of collaborative engagements provide additional context of our involvement in the intended benefits.

A partnership with Climate Action 100+

We joined Climate Action 100+ as a founding member in 2017 to encourage firms to improve climate-related governance and disclosure and to reduce emissions across the value chain. We've led, and continue to lead, several issuer engagements. Over the past year, we continued to engage a large oil sands producer in Canada in collaboration with several asset manager and asset owner peers. After several years of engagement with the issuer and associated requests for assurance and robust targets, the issuer demonstrated some progress in 2022 by conducting a third-party audit of emissions data and by setting new scope 1 and scope 2 targets. We'll continue to engage with the company in 2023, with a focus on encouraging the issuer to demonstrate climate competency on the board and progress on reducing methane emissions in its operations.

We also continued as co-lead on an engagement with a large, global chemicals company. We focused in particular on reviewing third-party standards with the company and encouraging improved transparency across those frameworks.

Forest Sector Nature-Positive Roadmap

As a member of the WBSCD, we collaborate with other members to advance sustainable development. Last year, we co-led a project with other forest sector companies to develop the Forest Sector Nature-Positive Roadmap.

ESMC for Southern cotton farmers

In 2022, we joined the ESMC and partnered with ESMC as well as the U.S. Cotton Trust Protocol and Forum for the Future to launch the Eco-Harvest pilot project in Alabama, Arkansas, Texas, and Tennessee. The project will work with cotton farmers, including some of our own tenants, to generate high-quality carbon credits for corporate buyers.

Trillion Trees initiative

Through a partnership with the World Economic Forum, Manulife has made a pledge to 1t.org and the Trillion Trees community to provide nature-based solutions to mitigate climate change, partner to scale financial investments, and preserve the social and environmental benefits of forests, agriculture, and biodiversity. We pledge to conserve and restore trees and forest landscapes both directly through sustainable forest management, reforestation, assisted natural regeneration, and permanent conservation and indirectly through nursery and seedling development, education and capacity building, and data collection and technology tools.

Encouraging board gender diversity

We continued our involvement with the 30% Club in 2022 as a lead and supporting investor across several engagements. The 30% Club Canada seeks to encourage greater gender diversity on boards and in executive leadership at issuers across Canada as well as encouraging racial and ethnic diversity across positions of leadership. We took the lead on an engagement with a payment technology company in 2022. Before our initial conversation with the issuer last year, we met with supporting investors to review the state of diversity in leadership at the issuer and identify engagement topics for discussion. We then had a conversation with the company about gender diversity in the technology space and encouraged more transparency around recruitment and retention and the talent pipeline for diverse leadership candidates. We look forward to continuing this discussion in 2023 and hope to see progress in disclosure and in the composition of the board.

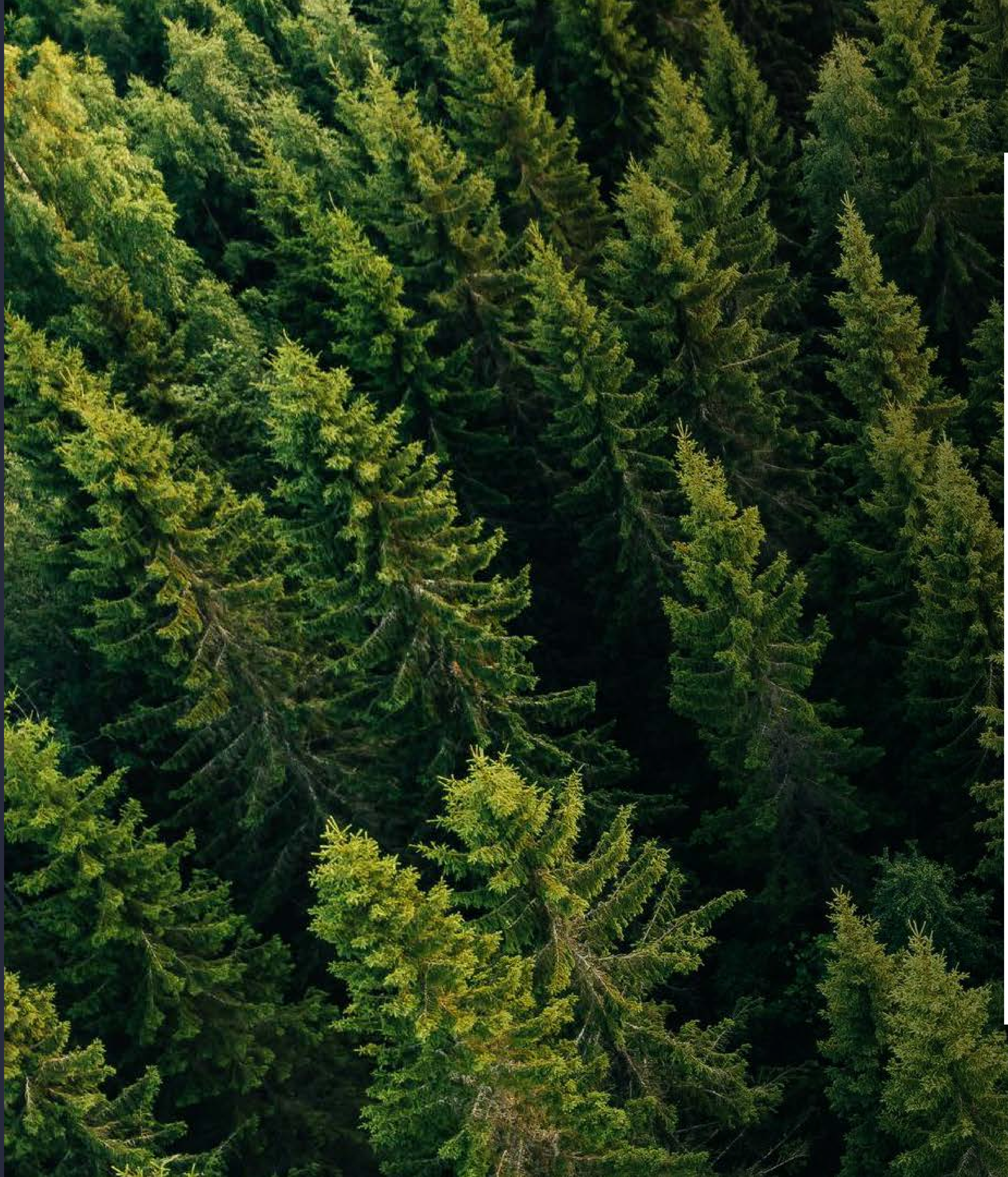
Focusing on the physical risks of climate change in Asia

As part of our work with the AIGCC, Manulife Investment Management chairs the Physical Risks and Resilience Working Group. The working group is a member body that focuses on investor solutions to integrate physical risk, resilience, and adaptation considerations into investment management and develops tools and resources toward this end. In late 2022, for example, the working group published “Investor Expectations of National Adaptation Plans in Asia,” which outlined a list of key requests from governments on the National Adaptation Plan (NAP) process, a framework used to develop strategies to address major vulnerabilities to climate change. These requests included suggestions to:

- Outline a consistent, national view of physical climate risk
- Base NAPs on scenario analysis
- Identify and prioritize vulnerable systems, groups, and communities in NAPs
- Ensure corporate disclosure on physical risks
- Consult with members of the financials sector as part of the NAP process
- Include interregional effects in developing NAPs
- Include action-oriented points on implementation and financing strategies in NAPs

Taking climate action in Canada

We're a founding member of the CEC, a finance-led initiative that facilitates dialogue between the financial community and Canadian corporate issuers to promote a just transition to a net zero economy. The CEC is akin to Climate Action 100+, with the purpose of driving more substantial conversations with issuers on the risks and opportunities deriving from the climate transition. As a global asset manager headquartered in Canada, we feel confident that we can bring a wide range of viewpoints and suggestions to this critical topic for the benefit of issuers and investors. In 2022, a number of engagement discussions were launched through the initiative. Manulife Investment Management led a collaborative engagement with a Canadian mining company, with our initial conversation focused on setting emissions targets, performing scenario analysis, and integrating climate risk metrics into executive compensation. We look forward to continuing this engagement throughout 2023.



Case study

Supporting a common framework for nature-positive forestry

Issue: In 2022, the WBCSD started work to develop a Forest Sector Nature-Positive Roadmap with the ultimate aim of supporting businesses to halt and reverse nature loss.

Action: We collaborated with peers to quickly identify the need for a common definition of nature positive on which subsequent work could follow. We co-led an effort to draft a definition that encompasses a comprehensive set of actions that companies should take to halt and reverse nature loss across the value chain.

Outcome: This work with our peers led to the publication of the first guidance under the Forest Sector Nature-Positive Roadmap, "Phase I: A Shared Definition of Nature-Positive." We hope this work provides a strong foundational understanding of the steps involved in being nature positive in operations.

Working with peers on policy

The regulatory environment and momentum around sustainable investing have shifted significantly over the last several years. As we navigate these regulatory developments, we work to influence policymakers and advocate for an operating environment that encourages sustainable business operations, protects and enhances investor rights, and encourages better disclosure of material nonfinancial data and information. We find that our views on these matters often align with those of our peers, and we've found significant benefits in partnering through investment manager associations, including the Securities Industry and Financial Markets Association (SIFMA) and the Investment Company Institute (ICI Global). Our industry associations facilitate peer dialogue on developing regulations and disclosure frameworks that provide a forum to deliberate over the potential impact of certain proposed policies and ultimately provide constructive feedback to regulators and other standards-setting bodies through comment letters and related engagement.

In 2022, Manulife Investment Management demonstrated support for responsible investment activities as investors with other asset managers and asset owners; we signed, for example, the 2022 Global Investor Statement to Governments on the Climate Crisis. We also continued contributing to several working groups organized by various ministries of the Japanese government focused on building guidelines on climate transition in finance, green bond guidelines, and a code of conduct for ESG evaluation and data providers, among other focus areas.

In 2022, we contributed to and supported many collaborative initiatives in our capacity as lead investor, founding member, supporting member, or group participant. Following is a nonexhaustive list.

Climate

- **Climate Action 100+**—Founding member, co-lead several engagements across North America and Asia
- **Asia Investor Group on Climate Change (AIGCC)**—Member and chair of the Physical Risks and Resilience Working Group
- **Ceres Paris Aligned Investment Initiative**—Working group participant
- **Hong Kong Green Finance Association (HKGFA)**—Member
- **Japan Task Force on Climate-related Financial Disclosures (TCFD) Consortium**—Member
- **Climate Engagement Canada (CEC)**—Founding member
- **CDP**—Member
- **Climate Smart Land Network (CSLN)**—Member

Corporate governance

- **Asian Corporate Governance Association (ACGA)**—Member and participant in the China and Korea working groups
- **Canadian Coalition for Good Governance (CCGG)**—Member with representation on the environmental and social committee
- **International Corporate Governance Network (ICGN)**—Active member of the stewardship committee

Nature and biodiversity

- **Sustainable Forestry Initiative (SFI)**—Member, engaged on the resources committee
- **Leading Harvest**—Board of directors
- **Finance for Biodiversity Pledge**—Signatory
- **Farm Animal Investment Risk and Return (FAIRR) initiative**—Network member
- **National Alliance of Forest Owners (NAFO), United States**—Representation on the board of directors, operating committee, and climate change and environment task groups

- Taskforce on Nature-related Financial Disclosure (TNFD)—Member, The TNFD Forum
- Programme for the Endorsement of Forest Certification (PEFC)—Involvement on the board of directors
- World Business Council for Sustainable Development (WBCSD)—Member, involved in the Nature Action and Scaling Positive Agriculture programs and the Forest Solution Group
- Australia Forest Products Association (AFPA)—Member
- New Zealand Forest Owner Association (FOA)—Member
- The Longleaf Alliance—Member

Policy development

- Securities Industry and Financial Markets Association (SIFMA)—Member
- Investment Company Institute (ICI)—Member
- Real Estate Roundtable—Member of the Sustainability Policy Advisory Committee (SPAC)
- Real Property Association of Canada (REALPAC)—Member of the ESG Committee
- The Investment Association (IA)—Member
- European Fund and Asset Management Association (EFAMA)—Member
- International Sustainability Standards Board (ISSB)—Member of the ISSB Investor Advisory Group (IIAG)
- Principles for Responsible Investment (PRI) Infrastructure Advisory Committee—Chair

A full list of our collaborative initiatives can be found in our annual sustainable and responsible investing report.

Looking ahead

In 2023, we'll continue to participate in collaborative initiatives that we believe will achieve a lasting impact. We'll continue to focus on nature and biodiversity, climate-related issues, and board diversity through several initiatives as we lead and participate in engagements with peers across related initiatives.

A message from Paul R. Lorentz

Firm overview

Marketwide stewardship for sustainable outcomes

Stewardship code principles and our practices

Escalation

Escalation

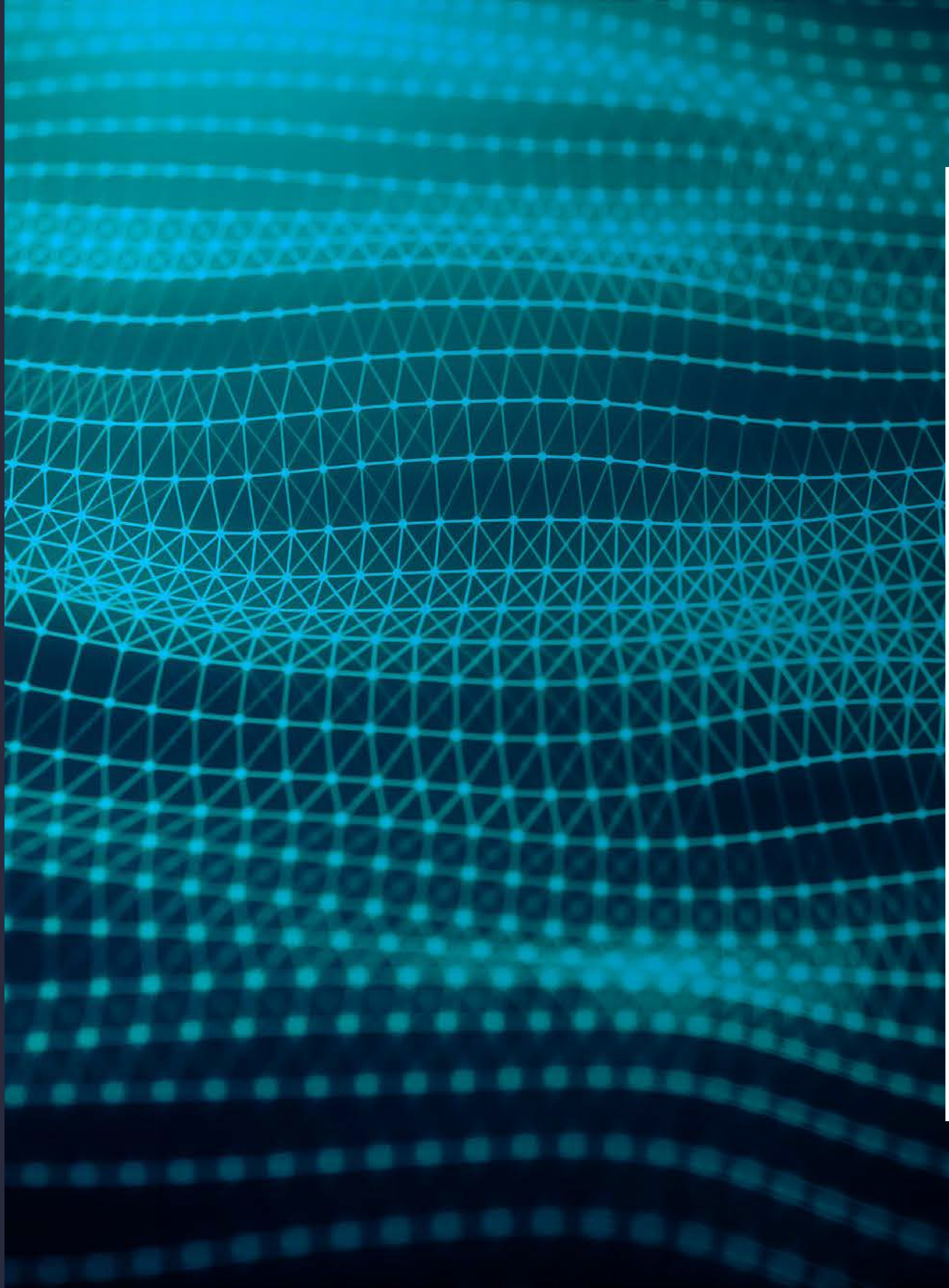
Manulife Investment Management encourages issuers to adopt best practices in relation to their management of sustainable risks and opportunities. We may escalate a given issue where management isn't meeting a best-practices expectation or standard.

Our approach to escalation

Encouraging best practices and opportunity maximization

Through our stewardship practices, we collaborate with stakeholders to work toward best practices in management of financial and nonfinancial risks, in addition to capturing opportunities. We do this because we believe it's the best way to protect and enhance the value of our clients' investments. As a natural extension of that work, we may need to escalate our efforts on a given front where we believe the current mechanisms in place to mitigate risk or maximize opportunity are unsatisfactory.

Throughout our escalation processes, we seek the views of our investment professionals as well as those of representatives from legal and compliance, as necessary. The escalation process, and the stakeholders involved, differ across asset classes in relation to the rights associated with each investment. We have a responsive approach to escalation and continually seek to strengthen the program, whether in terms of interaction efficacy, timing, or collaboration opportunities. We continue to realize positive and tangible outcomes from our efforts.



Case study

Executive compensation warnings at a software company

Issue: For several years, one of our equity teams held shares in a Canadian software firm, believing the firm had the potential to increase profitability provided it remained disciplined with capital and acquisitions.

Action: Over several years, the team engaged with management to encourage the adoption of a return-on-invested capital metric in the executive compensation plan in order to incentivize management not to pursue value-neutral, or potentially value-destroying, acquisitions. The company acknowledged our concerns but didn't make the requested change through these engagements. The team decided to exit its position in the firm due in part to lack of responsiveness on this issue, along with high leverage and slow organic growth.

Outcome: Shortly after the team divested, the firm made a large acquisition that caused share value to drop significantly. The company's say-on-pay vote also subsequently failed, potentially due to a pay-for-performance disconnect.

We escalate to preserve and unlock value for our clients

We fundamentally believe in active ownership while recognizing that not all engagements will meet our predetermined objectives. Escalation is an important instrument in our active ownership tool kit that enables us to influence the management teams and other stakeholders in our investments. Ultimately, escalation both preserves and unlocks value to benefit our clients and investors by encouraging best practices of sustainability factors in management.

We escalate on case-specific timeframes

As we monitor our investments, we identify issues that, if left unaddressed, may affect the value of individual investments—or entire portfolios. We collaborate with management teams and other stakeholders to address these risks over time. Depending on the progression of the issue, the actions taken by an issuer, and whether our engagement objectives are met within a reasonable timeframe, we may choose to escalate a matter. The preferred timeframe for seeing substantial, demonstrable action is generally 24 months, but we may set a longer or shorter interval conditional on the specific issue. We schedule semiannual check-ins to assess progress and may decide to escalate before the timeframe ends if, for example, a management team is nonresponsive to outreach or rejects our viewpoint entirely.

We tailor escalations based on the facts and circumstances

The levers at our disposal for escalating issues of concern vary by asset class and market. For that reason, it's necessary to evaluate the appropriate course of action for a given escalation on a case-by-case basis. Regardless of asset class or geography, however, we prioritize escalations based on the materiality of the issue, time horizon of the risk assumed by the company, and size of our investment exposure.

The first step in escalation with public equity and public fixed-income issuers is usually through direct engagement with a management team or stakeholders. We may request to speak to board leaders (including the chair of the board), the lead independent director, or the chair of the audit committee. We may also send private letters to the board or executive leadership. Where bilateral engagement with the company is ineffective, or where we own a small position, we may determine that collaboration with other like-minded investors is the appropriate avenue. Finally, if we're unable to gain traction and the company remains inactive on the issue, we reserve the right to divest.

Case study

Improving emissions disclosures at a Canadian oil and gas company

Issue: As part of our activities with Climate Action 100+, we were a co-lead in an engagement with a large Canadian oil and natural gas company. As part of that engagement alongside peers over several years, we identified the need for the company to provide assurance for its scope 1 and scope 2 emissions so we could better track and compare that data both at the issuer and against peers.

Action: When the company didn't demonstrate the progress we were expecting, we decided, together with our co-leads, to escalate the matter by filing a shareholder resolution requesting that the issuer provide reasonable assurance on its scope 1 and scope 2 emissions. This process involved reaching out to other shareholders for support and continuing to engage with the company on the matter.

Outcome: We ultimately had no need to file the proposal as, near the deadline to file, the company issued a public statement that, moving forward, it would provide the requested assurance. This was a significant step for the company, and investors will now have reliable and consistent emissions data from the firm year over year to aid integration of climate risk into investment decision-making.

Case study

Escalating compensation concerns at a software company

Issue: For several years, we've had concerns regarding executive compensation and share pledging activities at a large U.S. software company. Executives had pledged a large amount of shares as collateral for their personal debts, which, if called, could force a short sale and drive down share value. The company also had several problematic practices in the executive compensation program, including low transparency, large portions of pay vesting only based on time, and modification of preset performance targets in the middle of the measurement period.

Action: For all these reasons, we voted against executive compensation and the compensation committee over the past several years. Even in the face of shareholder opposition to the say-on-pay vote and low support for directors on the compensation committee, the company remained unresponsive to shareholder concerns and continued its problematic practices. To escalate the matter, we therefore voted against the entire slate of directors. We've also reached out to the company to engage with directors further on this matter.

Outcome: We'll continue to monitor the company on these issues and may escalate further absent action.

Escalation through our proxy voting rights

We may use our responsibility to vote shares on behalf of clients as a tool to escalate our concerns with an issuer's s progress if needed. For example, we may vote contrary to management recommendations on the following proposals:

- **Advisory vote on executive compensation—**We may vote against the advisory say-on-pay vote if a company isn't responsive to our concerns across a range of executive compensation issues. These may include misalignment between firm performance and executive remuneration, weak targets for executive bonus, or our wish to see executive performance benchmarked against different metrics.
- **Director vote—**We may vote against directors if the board is unresponsive to requests made through our engagement with them or if we see significant failures relative to executive compensation, board composition, audit oversight, or general governance.
- **Shareholder proposals—**Where we engaged with a company on a topic covered in a shareholder proposal, we may choose to escalate the matter by supporting a shareholder proposal on the same issue.

Fixed-income escalation

For publicly issued fixed income, our escalation requires a different approach given that bond investing carries unique ownership rights and responsibilities. Aside from bilateral engagement, we may take a collaborative engagement approach. One example of this is our membership of the Credit Roundtable, an association of corporate bond market participants focused on education, outreach, and advocacy designed to give debt holders a stronger voice with debt-issuing companies.

Our fixed-income team in Asia has developed a unique approach to escalation given that this market has a primary rating agency. This team will negatively notch issuer credit ratings for failure to address material ESG risks, ultimately implying a lower valuation.

Influence in private asset classes

Our approach to escalation in private markets is on a case-by-case basis and is situation specific. In some instances, we own, or own in partnership with others, substantial equity interests in these companies. Alternatively, we're the companies' largest lender, which also gives us significant leverage in decision-making. In other cases, our control over escalating issues may be limited: When we become aware of an issue requiring management, we engage with our investment partners to discuss the situation and voice our concerns. In our fund investments, these discussions may lead to a limited partner advisory committee (LPAC) vote.

We enter into our infrastructure investments having performed significant due diligence on the other owners and management teams of these investments. As a result of that due diligence and planning, we seek to have clear expectations set across these parties and alignment of interests within the shareholder group. In the infrequent instances of meaningful misalignment across stakeholders, we then work to propose and implement solutions. If other stakeholders aren't willing, or able, to address our concerns, we consider strategies to exit the investment and may limit the future business we engage in with those parties.

Looking ahead

We continuously review the most effective means to achieving our goals in relation to the engagements we undertake, including that of escalation. In 2023, we'll continue to explore fresh, multipronged approaches to the framework of our escalation, remaining steadfast in our belief that escalation must be evaluated and executed on a case-by-case basis.

Exercising rights and responsibilities

Asset manager rights and responsibilities differ across asset classes, but the central goal remains the same as we execute across our portfolios: We seek to enhance value for our clients and instill resilience across our investments.

Our approach to exercising our rights and responsibilities

Ownership rights vary significantly across asset classes. Equities carry perhaps the most prominent of investment rights in proxy voting, but voting rights can also accrue to fixed-income investments through convertible bond instruments. Indeed, with fixed-income rights, influence and leverage change significantly depending on timing of economic activity, market liquidity, and the investment cycle. In private markets, our influence runs a spectrum, from the right to sit on a board to the responsibility to operate assets sustainably.

Asset manager rights and responsibilities vary by asset class

Fixed income

- Monitoring
- Issuer engagement
- Collaborative/bondholder engagement

Listed equity

- Monitoring
- Issuer engagement
- Collaborative engagement
- Proxy voting

Externally managed

- Selection
- Appointment
- Monitoring

Real estate

- Sustainable operations
- Engagement

Timberland and agriculture

- Sustainable operations
- Engagement

Infrastructure

- Monitoring
- Engagement
- Board seats

Private equity

- Monitoring
- Engagement
- Board seats

Private credit

- Monitoring
- Engagement

Encouraging best practices through proxy voting

Our global proxy voting policy and procedures document outlines the processes and governance structures we have in public markets to help guide our execution of proxy voting rights while also providing broad principles on our expectations regarding corporate governance, shareholder rights, and management of material sustainability risks and opportunities. As we vote proxies, we're ultimately attempting to preserve and enhance shareholder value over the long term by encouraging issuers to adopt what we've identified as best practices.

We use a third-party proxy voting research, vote execution, and vote disclosure provider to aid us in our proxy voting efforts. This vendor provides us with initial proxy voting research reports and voting recommendations that align with our voting policy. While we'll most often use the initial recommendation of the proxy voting advisor, we can—and will—override the initial recommendation where we believe substantive information wasn't considered in forming the recommendation, where there's new information or action from the issuer, and/or in cases in which there are substantial and convincing reasons that support voting contrary to the recommendation.

Considering all information available, the exercise of our voting rights is always completed with our clients' best interests in mind. We have a global proxy operations group that oversees the proxy voting execution and account maintenance in coordination with investment professionals, the public markets sustainability team, and our proxy voting vendor, among other stakeholders. Proxy operations ensures that proxies are executed in a timely manner and maintain appropriate records of votes cast and records of proxy statements received in connection with annual general meetings. The proxy operations team performs various administrative functions associated with voting and supports reporting of proxy voting activities. Ultimately, it's through this team and its daily collaboration with the proxy voting vendor that we track our voting rights and ensure that we're executing our voting rights wherever we can and doing so as efficiently as possible.

Monitoring proxy voting rights and executing votes

As a high-level overview of proxy voting administration, when an account or fund is onboarded, proxy operations provides a signed letter of authorization (LOA) to the custodian. The LOA directs the custodian to forward ballots to our proxy voting vendor. Proxy operations works with the vendor to set up the accounts and connect our voting policy to those ballots. On a daily basis, our proxy operations team generates a positions report and sends that report directly to the proxy vendor's secure server. The vendor reviews that report to identify securities with an upcoming meeting and reconciles holdings against ballots received from the custodian. We receive daily reports to highlight any reconciliation issues and take action accordingly to ensure we can execute voting instructions across portfolios.

Case study

Addressing executive compensation misalignment at a U.S. homebuilder

Issue: Through our review of a say-on-pay proposal, we identified concerns with the structure and size of the executive compensation program at a U.S. homebuilder; specifically, the overall size of the compensation package at the CEO level significantly outpaced peers at a 2.5x peer median. A large driver of that was an annual bonus program that paid out in cash to the executives. We generally believe, as we state in our executive compensation statement, that pay should promote long-term decision-making and align with and support the company's values and achievements. We also evaluate changes in the level of executive compensation relative to changes across the larger employee base and look for companies that understand and appreciate the contributions from the broader organization.

Action: Our investment professionals and members of our public markets sustainability team had a dialogue with the chair of the compensation committee and the CEO ahead of the annual general meeting. We discussed the executive compensation program and the overall pay for executives and expressed our preference that a good portion of compensation should pay in equity that vests based on performance over a three-year (or longer) period. We believe such performance-vesting shares best align management with long-term shareholders.

Outcome: Subsequent to our meeting, the company filed a public statement committing to changes to its executive compensation plan. The company reduced the bonus pool by 25% for executives and redistributed that amount to associates at the lower end of the company's compensation levels. This was a means of addressing the concerns with overall size of executive awards while finding a novel solution to retain talent. The company also committed to defer 50% of the annual bonus into time- and performance-vesting stock. The performance component will vest based on achievement against financial metrics over a three-year period.

The goals of our proxy voting working group

Manulife Investment Management established a proxy voting working group to leverage functional expertise across the organization as we scrutinize voting decisions and strive for continuous improvement of our processes, policies, and practices.

Representatives from investment, legal, compliance, risk, operations, and the sustainable investing team are members of this group, which, among its other duties, reviews situations in which an equity investment team believes we should vote differently relative to how our proxy voting policy would dictate. These reviews have improved communication across the investment function regarding voting decisions, led to more consistent decision-making, and built subject matter expertise related to proxy voting analysis across multiple functional areas.

Special arrangements with clients and securities lending considerations

Manulife Investment Management and our clients shape the proxy voting relationship by agreement. Generally, our clients delegate proxy voting decision-making to us, and client shares are therefore voted in line with our global voting policy. We may also agree with clients to other proxy voting arrangements in which we don't assume proxy voting responsibility or will only vote in limited circumstances.

We also take action through our share-lending program to better preserve proxy voting rights. Shareholders can lose voting rights if shares are on loan during a certain period before a shareholder meeting. To preserve our influence through voting rights, we follow a process that, on a best-efforts basis, instructs our lending agents to restrict and recall shares from loans for issuers where we own 2% of shares outstanding or more. We believe this is in clients' best interests as it strikes a balance between generating additional revenue from lending for our client funds and ensuring we hold our rights where we have significant influence.

Annual review of proxy voting principles

On an annual basis, we also review the proxy voting principles that drive our voting decisions. We keep pace with the evolution of proxy voting and expectations regarding corporate governance, and we work to keep current with best practices. We also engage with our proxy voting research and services vendor to aid us in our effort to encourage outcomes that preserve and enhance share value over the long term. We consistently evaluate if amendments are necessary for our proxy voting policy.

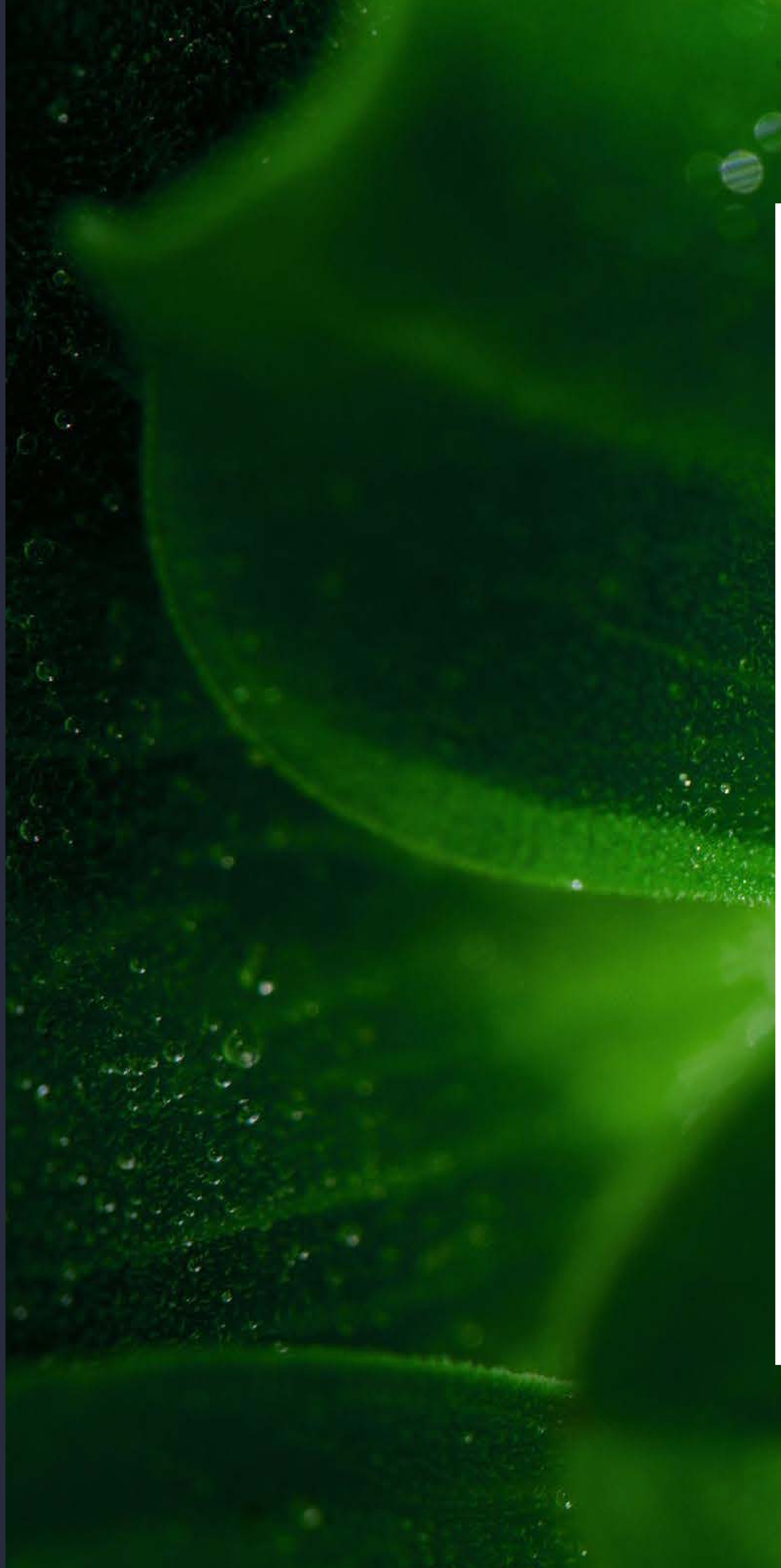
Case study

Using debt restructuring and collaboration to secure favorable terms

Issue: A Chilean mobile telecom company announced a plan in 2022 to repurchase about 30% of its outstanding bonds; the offer, however, included a proposal to exclude operating leases from total debt in the leverage covenant. As the largest holder of this issuer's debt, our fixed-income team was concerned that this amendment would grant the issuer leeway to direct future excess cash toward paying dividends to equity shareholders, rather than deleveraging, and significantly alter the risk profile of the debt.

Action: In response, we engaged other debt holders and a third-party advisor to present the issuer with a counterproposal. Our proposal encouraged more fixed-income-friendly leverage requirements, among other points.

Outcome: Ultimately, this collaboration secured more favorable terms for existing debt holders, including the elimination of changes to the leverage covenant. We also believe this set a precedent for other issuers with significant operating leases, indicating that they generally shouldn't exclude those liabilities from total debt.



Case study

Building a green bond framework with Canadian peers

Issue: Influence in fixed-income investing can largely be dependent on timing. Providing input to issuers before they issue debt can help ensure more sustainable terms. In 2021 and 2022, for example, we were part of a group of investors working with a structuring advisor on the green bond framework for the government of Canada. The Canadian government was soliciting feedback on a green bond framework ahead of an issuance that would support environmental objectives, including reduction of GHG, enhancing climate resilience, and conservation efforts.

Action: With other peers, our fixed-income and sustainable investment professionals provided feedback to the structuring advisor on multiple points, including on nature and biodiversity measures and projects eligible for expenditure from proceeds.

Outcome: The Government of Canada released its Green Bond Framework in March 2022, with several components focused on nature and biodiversity.

- Use of proceeds may include:
  - Reforestation/afforestation
  - Restoration of wetlands, peatlands, grasslands, and marine ecosystems
  - Protection of at-risk species
- Potential reporting impact indicators include:
  - Hectares of area improved or conserved
  - Number of species at risk benefiting from conservation action
  - Number of trees planted

Selected proxy voting data 2022

In 2022, Manulife Investment Management voted on over 98,000 proposals across more than 10,000 shareholder meetings globally. We voted at over 99% of meetings where shares were held.

Management proposals

Proposal category	Number of proposals	Votes contrary to management	Some reasons we voted contrary to management
Director elections	56,422	14%	• Poor attendance • Lack of independence • Diminishment of shareholder rights • Lack of gender diversity • Problematic executive remuneration practices • Apparent lack of oversight of environmental and/or social risk
Remuneration (say on pay, equity plans, equity grants)	10,448	19%	• Misalignment between pay and performance • Lack of performance-based remuneration • Short vesting periods • Lack of rigor in performance metrics • Outsize pay versus peers • Discretionary payments • Problematic severance arrangements • Potentially dilutive equity authorizations

Information shown reflects proposals most often requested by clients and third parties. For full data, see our voting records.

Shareholder proposals on environmental issues

Shareholder proposal category	Number of proposals	Votes contrary to management	Some reasons we voted contrary to management
Reporting on climate change	53	68%	Disclosure would help shareholders assess governance and strategy related to the management of physical and transition risks associated with climate change
Community—environmental impact	12	100%	• Reporting would help assess management of deforestation risks in the supply chain • Reporting would provide information regarding regulatory and other risks associated with the continued use of single-use plastics • Reporting would provide information regarding management of water resources and associated risks
GHG emissions	39	77%	Adoption of mid-term and long-term targets encourages emissions reductions and reduces risk
Recycling/plastics use	8	100%	• Encouraging innovation in packaging reduces pollution and potentially brings commercial opportunity • Reduction in exposure to plastic in the value chain reduces negative impacts while potentially making a firm more resilient in the face of potential regulation

Information shown reflects proposals most often requested by clients and third parties. For full data, see our voting records.

Shareholder proposals on social issues

Shareholder proposal category	Number of proposals	Votes contrary to management	Some reasons we voted contrary to management
Diversity, equity, and inclusion	62	79%	• Disclosure could provide reporting on gender pay gap risk • Reporting on DEI could help shareholders assess human capital management
Political spending	54	93%	Disclosure would help shareholders assess congruency of political spending and trade association lobbying with public statements and positions
Human rights	34	56%	Reporting can provide investors with more information about mitigation of human rights abuses in the supply chain
Health and safety	24	46%	Information on product safety can help shareholders assess risks to human health and consumption patterns

Information shown reflects proposals most often requested by clients and third parties. For full data, see our voting records.

Shareholder proposals on governance issues

Shareholder proposal category	Number of proposals	Votes contrary to management	Some reasons we voted contrary to management
Board related	137	77%	• Support separation of board chair and CEO roles • Believe in enhanced ability of shareholders to nominate directors • Support annual, rather than staggered, election of directors
Shareholder rights	130	88%	• Support expanding right of shareholders to call a special meeting • Support simple majority vote standard to elect directors
Compensation	84	69%	• Disclosure of compensation details helps shareholders assess alignment of management with shareholders • Support robust clawback policies

Information shown reflects proposals most often requested by clients and third parties. For full data, see our voting records.

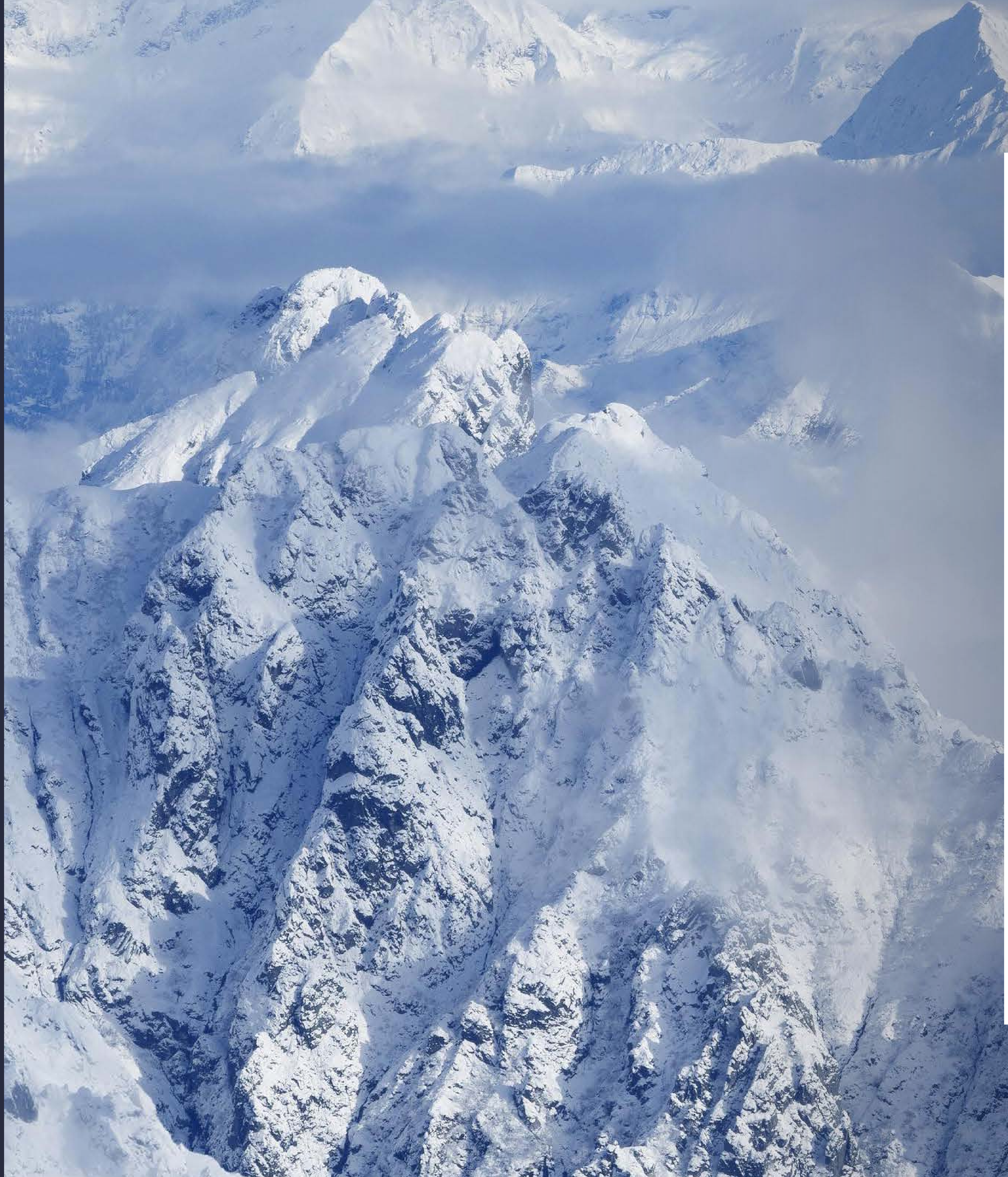
Case study

Going beyond the proxy advisor

Issue: Our investment teams review proxy voting events of the underlying investments, whether that pertains to annual meetings or special events. In Indonesia last year, our teams were asked to vote on an agreement between two banks related to an acquisition of a business line focused on digital banking capabilities. Our proxy advisor recommended a vote against the acquisition.

Action: Our investor team performed its own review of the transaction and determined that there was extensive value creation potential with the synergies from the banks' existing book of business combined with the growing segment of digital banking services to micro, small, and midsize enterprises.

Outcome: Manulife Investment Management ultimately voted for the transaction. Not only do we continue to believe that shareholders will be rewarded through valuation, but we also think there will be a positive societal benefit by bringing access to finance opportunities to smaller companies and consumers.



Case study

Executing a credit challenge

Issue: This past year, we received notice of a consent solicitation from a Canadian telecom company regarding a mandatory special redemption bond. We viewed the solicitation as lacking appropriate governance from a credit investor perspective. The company used the consent solicitation as a means to amend a credit covenant with terms we felt weren't favorable to investors. In addition, the issuer granted us only a limited number of business days to analyze the offer and make our decision.

Action: We engaged with other investors holding the instrument and initiated a credit challenge due to our concerns.

Outcome: Although the credit challenge didn't prevail and the consent solicitation was approved by bondholders, the company is aware of our displeasure regarding its approach and treatment of bondholders.

Timing of rights in fixed income

As fixed-income investors, our rights differ depending on when we hold a bond within its lifecycle. Our global fixed-income teams regularly review prospectus and transaction documents as part of their initial due diligence, ongoing risk monitoring, and credit research processes. This provides them with an evolving view on which improvements to instrument characteristics might benefit debt holders.

As an example, in the syndication process, our teams offer feedback on terms, conditions, and covenants that would make the investment offer more attractive for our clients, and this dialogue can result in covenant changes. By engaging with companies when they need to fundraise, we can also influence those issuers to commit to adopting best practices in sustainable risk mitigation. Finally, through credit events, we may also have the opportunity to renegotiate terms or may emerge from the event with equity and voting rights that we exercise to protect our interests. Ultimately, we aim to strategically time our engagements in order to maximize our influence.

We continue to build our influence over debt issuers and are finding that bondholders may be underusing their rights to advance sustainable outcomes. We've heard from some issuers, for example, that they're generally not engaged by debt holders on sustainability risks and opportunities and can be appreciative when we approach them. This feedback is encouraging to us, and we've learned that firms are receptive to our feedback as debt holders.

Partnerships in private markets

Our rights and responsibilities in private markets can range from direct management of an asset, as with timberland, agriculture, and real estate, to the establishment of partnerships with fellow investors, lenders, sponsors, and management to seats on boards. We tailor our activities to each asset class and, more specifically, to each role we hold.

Considering our infrastructure investments as an example, our investment team typically seeks to monitor and influence an investment through a board seat, protective controls, or governance—or a combination of these. These rights enable the investment team to exert influence or veto power regarding key decisions made with respect to a company's commercial or financial operations, as well as management and oversight of relevant sustainability risks and opportunities. Board seats, in particular, allow us to engage directly in the activities of a given investment.

In some of our investments that don't have boards, we participate in key decisions as a member of the investment company or as a member of the LPAC; this gives our team access to all key decision makers at the ownership and management levels. When holding a seat on an LPAC, we may specifically review certain matters, including conflicts of interest and waivers of LP restrictions. Although we may be one investor as part of a consortium, most significant decisions are made at the board or member level with the full support of all parties.

Looking ahead

We'll continue to evaluate our proxy voting process and policy approach in 2023 and plan on developing internal expected practice statements on complex sustainability issues. These will serve as educational pieces for the proxy working group members as well as investment professionals. In addition, they may help guide proxy voting decisions on ESG matters across our teams.

We'll continue to engage with our proxy service provider to influence their capabilities to meet our needs against the backdrop of continuous market change.

A message from Paul R. Lorentz

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Appendix

Global codes that guide our stewardship

Stewardship principle	Canada Last updated in 2020	Hong Kong Last updated in 2016	Japan Last updated in 2020	Taiwan Last updated in 2020	U.K. Last updated in 2020
Purpose, strategy, and culture	Not explicitly referenced	Not explicitly referenced	Not explicitly referenced	✓	✓
Governance, resources, and incentives	✓	Not explicitly referenced	✓	✓	✓
Conflicts of interest	✓	✓	✓	✓	✓
Promoting well-functioning markets	✓	Implied	Implied	Partially referenced	✓
Review and assurance	Not explicitly referenced	Not explicitly referenced	✓	✓	✓
Client and beneficiary needs	✓	✓	✓	✓	✓
Stewardship, investment, and ESG integration	✓	✓	✓	✓	✓
Monitoring managers and service providers	Not explicitly referenced	Partially referenced	Partially referenced	Partially referenced	✓
Engagement	✓	✓	✓	✓	✓
Collaboration	✓	✓	✓	✓	✓
Escalation	✓	Implied	Implied	Implied	✓
Exercising rights and responsibilities	✓	✓	✓	✓	✓

Source: Stewardship codes by location, Manulife Investment Management, as of March 2023. Manulife Investment Management is a signatory to these global codes.

Global collaboration

Below are examples of current sustainability/ESG industry groups and initiatives with which we're engaged.

Organization	Year joined	Region	Focus	Manulife Investment Management's involvement
30% Club Canadian Investor Group	2019	Canada	A group of asset owners and asset managers committed to exercising their ownership rights to encourage increased representation of women on corporate boards and in executive positions	We have a target list of Canadian companies established annually; we engage with select companies from this list.
30% Club Japan Investor Group	2021	Asia	A group of investors committed to achieving a minimum of 10% female representation on TOPIX 100 boards around 2020 and 30% female representation on TOPIX 100 boards around 2030	We participate regularly in working groups.
American Bird Conservancy (ABC)	2020	North America	Dedicated to conserving wild birds and their habitats throughout the Americas. With an emphasis on achieving results and working in partnership, we take on the greatest problems facing birds today	We're a stewardship partner, provide annual funding in support of ABS's missions. ABC is a conservation-minded supporter of bird habitat in working lands.
Asian Corporate Governance Association (ACGA)	2016	Asia	Promotes implementation of effective governance practices in Asian companies on behalf of institutional investors and regulators	We're an active member in the association in addition to participating in the China and Korea working groups.
Australian Forest Products Association (AFPA)	2010	Australia	Represents forest owners and the forest products manufacturing sector in Australia	We're a member of this initiative.
Board Diversity Hong Kong Initiative	2018	Asia	Commits to an ongoing engagement on diversity at all levels with listed companies in Hong Kong, starting with the board of directors	We're one of the founding members of the Board Diversity Honk Kong Initiative. We believe diversity on boards encourages better leadership and better corporate governance, and it ultimately increases corporate performance and global competitiveness for both companies and their shareholders.
Building Owners and Managers Association (BOMA) Canada	2018	Canada	Implements timely, responsible, and consistent policy positions on important issues to the Canadian real estate industry; acts as the voice representing the industry by advocating on members' behalf on a national or provincial platform	We attend quarterly meetings and aid in developing tools and standards for the commercial real estate industry on how to integrate resilience best practices and adapt to changing climate conditions.

Organization	Year joined	Region	Focus	Manulife Investment Management's involvement
Canada Green Building Council (CAGBC)	2017	Canada	Sister organization to the U.S. Green Building Council	We're involved on the board of directors and chair the real estate owners and developers advisory group.
Canadian Coalition for Good Governance (CCGG)	2012	Canada	Focused on corporate governance organization in Canada	We have representation on the E&S (environmental and social) Committee.
CDP	2018	Global	Advocates for disclosure of company data to measure and manage the environmental impact (carbon, water, forestry); one of the first ESG disclosure initiatives in the financial industry	We're a member of CDP and participate in various initiatives such as the Science Based-Targets initiative (SBTi).
Center for Advancement of Social Entrepreneurship & Impact Frontiers - strengthening Impact Management	2022	United States	Strengthening program is a cohort-based program designed to support investors who are looking to establish or improve on their current impact management practice, helping managers to fully integrate impact into investment frameworks, processes, and systems	We're currently participating in the strengthening Impact Management 12-month cohort program.
Ceres Investor Network	2016	Global	Promotes discussion and collaboration on how to address climate risk and other sustainability challenges among institutional investors	We participate in discussions and initiatives brought forward by Ceres. We're also a member of the Investor Water Hub, Private Equity Working Group, and founding member of the Valuing Water Investor Working Group.
Ceres Valuing Water Finance Initiative	2022	Global	An initiative calling on companies to meet Ceres Corporate Expectations for Valuing Water that align with the U.N. 2030 Sustainable Development Goal for Water (SDG6)	We're signatories to the initiative.
Climate Action 100+	2018	Global	Collaborative engagement with largest corporate GHG emitters	We're a founding member of Climate Action 100+. We co-lead several engagements across North America and Asia.
Climate Engagement Canada (CEC)	2021	Canada	A finance-led initiative that drives dialogue between finance and industry to promote a just transition to a net zero economy	We're a founding participant of CEC.
Climate Smart Land Network (CSLN)	2015	North America	Provides forest landowners and managers with direct access to forest and climate experts and the opportunity to benefit from other forest landowners in the network	Our timber and agriculture team has been a member since CSLN's inception. We continue to share information at their annual member gatherings as well as through emails and monthly calls aimed to support the acceleration of natural climate solutions.

Organization	Year joined	Region	Focus	Manulife Investment Management's involvement
Concordia University	2020	Canada	Sustainable Investing Practicum (SIP) enables undergraduate business students to better understand the principles of ESG investing in a capital market environment; students make fund management recommendations to a supervisory committee based on sustainable investing criteria	Concordia's John Molson School of Business (JMSB) signed a partnership agreement with Manulife Investment Management that established the first sustainable investing practicum at a Canadian university.
Ducks Unlimited		North America	The world's leader in wetlands and waterfowl conservation	We're a supporter of this initiative.
Ecosystems Services Market Consortium (ESMC)	2022	United States	Aims to reduce GHG, improve water quality, and increase other ecosystem services to benefit society through improved agriculture practices	We partnered ESMC and with the U.S. Cotton Trust Protocol and Forum for the Future to launch the Eco-Harvest pilot project in Alabama, Arkansas, Texas, and Tennessee.
Emerging Markets Investors Alliance (EMIA)	2015	Global	A central hub for information, education, and networking for investors in emerging markets	We're active members of the agriculture, debt and fiscal governance, ESG, and extractive industries working groups.
ESG Data Convergence Initiative	2022	Global	Aims to streamline the private investment industry's historically fragmented approach to collecting and reporting ESG data in order to create a critical mass of meaningful, performance based, comparable ESG data from private companies	We're a supporter, and within our PE&C and infrastructure business, we've aligned our annual ESG questionnaires with the ESG Data Convergence initiative.
Farm Animal Investment Risk and Return (FAIRR) Initiative	2022	Global	Focused on sustainability issues within the food supply chain, including the protein producer industry and consumer-facing food companies	We're a network member with access to FAIRR data and indexes.
Finance for Biodiversity Pledge and Foundation	2021	Global	Commitment of financial institutions to protect and restore biodiversity through their financing activities and investments	We're a signatory to the pledge, a member of the advisory board, and an active member of the engagement, impact assessment, and public policy working groups.
GRESB	2015	Global	Validates, scores, and benchmarks ESG performance data for real assets, providing business intelligence and engagement tools to investors and managers	We report to the GRESB real estate and infrastructure assessments on an annual basis.
Hong Kong Green Finance Association	2018	Hong Kong	Promotes adoption of green finance and investment by gathering industry experts to provide policy suggestions to the Hong Kong government and other regulators	We contribute to the working groups, including on green bonds and product innovation as well as external collaborations.
Institutional Limited Partner Association (ILPA)	2014	Global	Engages, empowers, and connects limited partners to maximize their performance on an individual, institutional, and collective basis	We're a member of the ILPA ESG Working Group and Diversity in Action Initiative.

Organization	Year joined	Region	Focus	Manulife Investment Management's involvement
International Corporate Governance Network (ICGN)	2019	Global	Promotes effective standards of corporate governance and investor stewardship to advance efficient markets and sustainable economies worldwide	We're a member of the Stewardship Committee.
International Sustainability Standards Board (ISSB)—ISSB Investment Advisory Group (IIAG)	2019	Global	A group of leading asset owners and asset managers in various markets who are committed to improving the quality and comparability of sustainability-related financial disclosures	We're a member of the ISSB Investment Advisory Group (IIAG).
Investment Company Institute (ICI)	2015	Global	Encouraging adherence to high ethical standards by all industry participants; advancing the interests of funds, their shareholders, directors, and investment professionals; and promoting public understanding of mutual funds and other investment companies	We're involved in calls and discussions on sustainability-related disclosures for asset managers.
Investment Leaders Group (Cambridge)	2020	United Kingdom	A global network of pension funds, insurers, and asset managers with over £14 trillion under management and advice; the group is committed in its mission to advance the practice of responsible investment	We're an active member of the CISL Investment Leaders Group, striving to create an investment chain that prioritizes economic, social, and environmental sustainability.
Leading Harvest	2020	United States	Advancing sustainable agriculture, providing assurance programs comprising standards, audit procedures, training and education, and reporting and claim offerings	Our timber and agriculture business was a founding member of Leading Harvest; in addition, our global head of agriculture, is current chairperson of the board of directors for Leading Harvest.
Long-term infrastructure Investors Association (LTIIA)	2017	United States	Works with a wide range of stakeholders—infrastructure investors, policymakers, and academics, among others—to enable the long-term, responsible deployment of private capital in public infrastructure projects around the world	Recep Kendircioglu, VP, senior managing director for infrastructure, sits on the board of the LTIIA.
Massachusetts Institute of Technology (MIT) Joint Program on the Science and Policy of Global Change	2016	Global	Studying interactions among human and earth systems to provide a sound foundation of scientific knowledge	We're a sponsor and project representative.
Michigan State Forest Carbon and Climate Program (FCCP)	2020	United States	Established to connect professionals, natural resource managers, decision-makers, students, and the broader public with the value of forested lands and forest products in addressing climate change; extensive expertise in forest conservation guides the programs focus, in addition to local, regional, and international relationships with entities engaged in the use and protection of forests and related ecosystems	We're a supporter of the program's mission to increase the understanding and implementation of climate-smart forest management.

Organization	Year joined	Region	Focus	Manulife Investment Management's involvement
National Council for Agriculture Employers (NCAE)	2019	United States	National association focusing exclusively on agricultural labor issues from the agricultural employers viewpoint	We're a member of this initiative.
National Council for Air and Stream Improvement (NCASI)	2021	United States	Mission is to help members cost-effectively meet environmental and sustainability goals through basic and applied research, technical support, and education	We're a member of this initiative and benefit directly and indirectly from research that NCASI conducts on behalf of the forest sector. We also participate in working groups and provide technical leadership when needed to further advance new science in managed forests.
New Zealand Forest Owner Association (FOA)	2006	New Zealand	Represents the owners of New Zealand's commercial plantation forests; set up in 1926, and is now one of the country's most influential primary sector organizations	We're a member of this initiative.
National Alliance of Forest Owners—United States	2008	United States	National advocacy organization committed to advancing federal policies that ensure sustainable practices and strong markets for our working forests	We have representation on the board of directors, Operating Committee, Climate Change, and Environment task groups.
Pollinator Partnership	2021	Global	Mission is to promote the health of pollinators critical to food and ecosystems through conservation, education, and research	We're a supporter of this initiative.
Principles for Responsible Investment (PRI)	2015	Global	United Nations-supported international organization that works to promote the incorporation of ESG factors into investment decision-making	We're a signatory and an active member of various working groups, including the fixed-income advisory group, sovereign bond working group, chairs of the Infrastructure Advisory Committee, Real Estate Advisory Committee, and the listed equity integration subcommittee.
Programme for the Endorsement of Forest Certification (PEFC)	2007	Global	Global alliance of national forest certification systems	We're involved on the board of directors.
Real Estate Roundtable Sustainability Policy Advisory Committee (SPAC)	2019	United States	Seeks to educate policymakers and the public about real estate and its significance to the economy	We participate in monthly meetings and engagement on federal or state policy and regulations affecting commercial real estate.
REALPAC Canada ESG Committee	2017	Canada	Members include publicly traded real estate companies, real estate investment trusts (REITs), pension funds, private companies, fund managers, asset managers, developers, government real estate agencies, lenders, investment dealers, brokerages, consultants/data providers, large general contractors, and international members	We participate in monthly meetings and engagement on federal, provincial, or municipal policy. We're also chair of the zero carbon working group.

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RIA Canada	2019	Canada	Promotes responsible investing and ESG integration into the investment process in Canada	We participate in initiatives and roundtables organized by the RIA.
Singapore Standards Council (SSC) Enterprise Singapore	2019	Asia	Facilitates the development, promotion, and review of standards and technical references in Singapore	We're a member of the working group, providing input on the development of an ISO standard for sustainable finance.
Securities Industry and Financial Markets Association (SIFMA)	2015	United States	Industry trade group representing securities firms, banks, and asset management companies advocate on legislation, regulation, and business policy affecting retail and institutional investors, equity and fixed-income markets, and related products and services	We've engaged in the IOSCO consultation on sustainability-related disclosures for asset managers and the UK FCA climate disclosure consultation with SIFMA.
Sustainable Forestry Initiative (SFI)	2002	North America	Collaborates with a diverse network to provide forest-based solutions to local and global sustainability challenges	We've engaged on the Resources Committee.
Task Force on Nature-related Financial Disclosures (TNFD)	2020	Global	Focused on redirecting flows of finance at scale toward nature-positive activities to allow nature and people to flourish	We were members of the Informal Working Group developing the scope for TNFD.
TCFD Consortium (Japan)	2019	Asia	TCFD consortium in Japan has corporate and investor members and aims to foster best practice in TCFD reporting	We're a member of the investor group to support companies to provide decision-useful disclosure.
The Longleaf Alliance	2022	United States	Mission is to ensure a sustainable future for longleaf pine ecosystems	We're a member of this initiative.
Transition Pathway Initiative	2021	Global	A global, asset owner-led initiative that assesses companies' preparedness for the transition to a low-carbon economy	We're a supporter of this initiative.
Urban Land Institute	2021	Americas and EMEA	The oldest and largest network of cross-disciplinary real estate and land use experts in the world; through members' dedication to the mission and their shared expertise, the institute has been able to set standards of excellence in development practice	We're a member of the Mapping ESG Steering Committee.
University of Cambridge Investment Leaders Group (ILG)	2020	United Kingdom	A global network of pension funds, insurers, and asset managers, with over £14 trillion under management and advice, committed in its mission to advance the practice of responsible investing; a voluntary initiative, driven by its members, facilitated by the Cambridge Institute for Sustainability Leadership (CISL), and supported by academics in the University of Cambridge	We're a participating member.

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UNEP FI Property Working Group (PWG)	2019	Global	Drives innovation in responsible property investment by facilitating access to relevant information and best practices for systematically applying and integrating ESG criteria into investment and lending decisions	We attend and contribute to the quarterly working group meetings.
World Benchmark Alliance (WBA)	2018	Global	Seeks to increase the private sector's sustainability impact; creates benchmarks to incentivize and accelerate companies' efforts toward achieving the UN's SDGs	We're a supporter of the WBA initiatives.
World Business Council for Sustainable Development (WBCSD)	2019	World	CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world	We're a council member and liaison delegate. Our timber and agriculture team actively participates in the WBCSD's Forest Solutions Group, Scaling Positive Agriculture, and Nature Action projects in collaboration with industry partners focused on scaling forestry and agriculture as natural climate solutions.

Biographies: public markets sustainable investing team*

Peter Mennie, ASIP

Chief Sustainable Investment Officer, Public Markets, Sustainable Investing
Manulife Investment Management

Peter leads the firm's team of dedicated environmental, social, and governance (ESG) research and integration analysts to advance the ESG agenda. The analysts work with portfolio management teams on progressing ESG integration processes and conducting ESG engagement with investee companies. They also work with sales and product teams on ESG strategy and marketing and represent the firm in various industry groups and collaborative initiatives. Peter provides global risk leadership for all asset classes, and he ensures a consistent global approach to monitoring and managing investment risk and portfolio structure; he also serves as the chief operating officer of Manulife Investment Management (Europe) Limited. Peter previously held numerous positions within the firm, including serving as a senior portfolio manager and, prior to that, he held various fund management positions, focusing on various regional markets. He holds the Associate of the Society of Investment Professionals designation and is a member of the CFA Society of the UK and of the CFA Institute.

Education: M.A., Mathematics, University of Cambridge

Joined the company: 1997

Began career: 1996

Frederick Isleib III, CFA

Global Head of ESG Research and Integration, Sustainable Investing
Manulife Investment Management

Fred collaborates directly with U.S.-based portfolio managers and investment analysts responsible for some of the firm's largest equity and fixed-income strategies (by assets under management) to integrate environmental, social, and governance (ESG) risks and opportunities into the investment decision-making and risk monitoring process. In this role, he leads ESG engagements with high-profile Fortune 500 companies, as well as the broader U.S. investment universe, to foster improved ESG management standards among some of the firm's most significant holdings; he's also responsible for the generation of the thematic and top-down research related to emerging ESG investment issues. Prior to joining the firm, Fred was the director of research of clean energy markets at Nexant, where he focused on the U.S. renewable energy markets and the development of distributed energy generation. Before that, he spent 17 years at Putnam Investments, including 7 years as a global fundamental equity research analyst following the financials, technology, and industrials sectors. Fred holds the Chartered Financial Analyst designation and is a member of the CFA Society Boston.

Education: M.B.A., Babson College; B.S., Accounting, Bentley University

Joined the company: 2015

Began career: 1993

* Biographies do not include biographies for three dedicated analysts from our partner Acuity.

Biographies: public markets sustainable investing team (continued)

Pete Dervan

Director, ESG Research and Integration—Active Ownership, Sustainable Investing
Manulife Investment Management

Pete is responsible for the advancement and oversight of the firm's active ownership practices in public markets, including the alignment of the firm's sustainable investment agenda with company engagement and proxy voting. Prior to joining Manulife Investment Management, he was a lead corporate governance analyst at Fidelity Investments. Pete's primary responsibilities at Fidelity included engagement with equity portfolio companies on corporate governance, execution of proxy voting decisions, and research and development of proxy voting policies.

Education: J.D., Law, Suffolk University Law School; M.B.A., Finance, University of Massachusetts Amherst–Isenberg School of Management; B.A., English, Gettysburg College

Joined the company: 2019

Began career: 2004

Kiley Hannan

Sustainable Investing Analyst, Sustainable Investing
Manulife Investment Management

Kiley works with the U.S.-based investment staff on environmental, social, and governance integration; proprietary research; and company engagement. She's also responsible for supporting global active ownership initiatives and stewardship reporting. Prior to this role, Kiley was an investment analyst, working for multiple teams across the firm in both public and private markets as part of the firm's investment division rotation program.

Education: B.S.B.A., Global Business and Finance, Suffolk University

Joined the company: 2018

Began career: 2018

Biographies: public markets sustainable investing team (continued)

Alyson Slater

Head of Sustainable Investing Canada, Sustainable Investing
Manulife Investment Management

Alyson leads environmental, social, and governance (ESG) and sustainable investment in Canadian public markets. Her responsibilities include helping to integrate ESG considerations into many aspects of the firm's work, including products, compliance, research, engagement with issuers, and interacting with clients and stakeholders. Prior to joining the firm, Alyson founded the climate risk and sustainable finance practice at the Global Risk Institute in Financial Services, where she developed leading research and education programs for chief risk officers and board directors. Alyson has specialist knowledge in sustainability reporting and disclosure through her decade as an executive at the leading international ESG standards setter based in Europe. She's worked with issuers across all major sectors and regions on sustainability strategy, management, and reporting in various consulting roles. Alyson also spent five years in Asia with the Alliance for Financial Inclusion, working with financials sector regulators across 75 developing and emerging economies to make financial systems more green and inclusive.

Education: M.A., Resource Management and Environmental Science, University of British Columbia; B.A., Honors, Geography and Environmental Studies, McGill University

Joined the company: 2022

Began career: 2000

Omar Soliman

Sustainable Investing Analyst, Sustainable Investing
Manulife Investment Management

Omar supports the firm's sustainable investing team in its environmental, social, and governance (ESG) integration and engagement activities. Prior to joining the firm, he worked at Competent Boards, a start-up that provides ESG-related professional development and advisory services to executives and boardrooms globally. In that role, he co-created a certificate program and delivered client services related to corporate governance, sustainability, ESG integration, climate change, and sustainable development goals. Prior to that role, Omar was a research analyst at Delphi Group, a corporate sustainability consultancy, which provides research and analysis across various sectors, including commercial real estate, government and public services, and energy/utilities, and, before that, he was a research assistant at the University of Toronto's department of biology, where he focused on digital health, wearable technology, predictors of health outcomes, and biometric dark data.

Education: M.Sc., Sustainability Management, B.Sc., Health Sciences, University of Toronto

Joined the company: 2020

Began career: 2016

Biographies: public markets sustainable investing team (continued)

Ramiya Krishnan

Sustainable Investing Analyst, Sustainable Investing
Manulife Investment Management

Ramiya is an analyst on the public markets sustainable investing team, where she focuses on proxy voting and stewardship initiatives. She was previously a distribution compliance analyst with the firm, responsible for reviewing marketing materials and sales communications for institutional business lines to ensure compliance with regulatory requirements and, most recently, she focused on environmental, social, and governance disclosure requirements. Prior to that, she was a compliance analyst at iA Clarington Investments, where she was involved with marketing materials, sales, and other fund-related communications for compliance with internal policies and Canadian securities regulations.

Education: B.Sc., Psychology and Crime, Law and Deviance, University of Toronto

Joined the company: 2019

Began career: 2015

David Ung

Senior ESG Analyst, Sustainable Investing
Manulife Investment Management

David supports the firm's sustainable investing team in its environmental, social, and governance (ESG) integration and engagement activities. Prior to joining the firm, he worked in the financials sector for over seven years and was involved in the responsible investment industry, most notably as an ESG consultant for Millani, HEC Montréal University pension funds, and Vigeo Eiris. David has also served as acting president of the club d'investissement responsible du Québec and as a member of the sustainable investing project advisory committee at Sustainable Concordia.

Education: M.Sc., Corporate Finance, Université de Montréal–HEC Montréal; B.Com., Finance, Université du Québec à Montréal

Joined the company: 2020

Began career: 2013

Biographies: public markets sustainable investing team (continued)

Amarilys Simoneau

Junior Sustainable Investing Analyst, Sustainable Investing
Manulife Investment Management

Amarilys is based in Montreal and works on environmental, social, and governance (ESG) integration, company engagements, and active ownership. She's responsible for supporting the team during the proxy voting season and stewardship reporting. Prior to this role, Amarilys worked in a private architect firm to disclose its first sustainable development and with a public company on some ESG analyses and integration for portfolio managers.

Education: Masters Diploma in Management and Sustainable Development, HEC Montreal; B.A.A., Management, École des Sciences de la Gestion (UQAM)

Joined the company: 2022

Began career: 2022

Eric Nietsch, CFA

Head of ESG Research and Integration Asia, Sustainable Investing
Manulife Investment Management

Eric is responsible for setting the sustainable investing, environmental, social, and governance (ESG) research, integration, and active ownership agenda in Asia. In this role, he conducts proprietary research to identify and manage investment risks and opportunities related to the sustainability strategies of companies in the region. He also works with Asia-based portfolio managers on evaluating ESG exposures at a portfolio level. Eric collaborates with the ESG team on methodologies for product development and represents the firm's ESG capabilities among the local investment community. He chairs the physical risk and resilience working group of the Asia Investor Group on Climate Change and is a member of the Investment Leaders Group of the Cambridge Institute for Sustainability Leadership. Prior to joining the firm, Eric led the sustainable finance initiatives for Asia-Pacific at S&P Global, where he helped to develop and launch the ESG evaluation framework. He worked closely with analysts across the region to evaluate ESG exposures in corporate and infrastructure entities. Before joining the sustainable finance team, Eric covered various sectors as a credit ratings analyst at Standard & Poor's in both the United States and Asia and, prior to that, he worked on an equity portfolio at Barclays in New York and on the special situations desk of the boutique investment bank StormHarbour Partners. He holds the Chartered Financial Analyst designation and is a member of the CFA Society Singapore.

Education: B.A., Psychology, Colgate University

Joined the company: 2019

Began career: 2009

Biographies: public markets sustainable investing team (continued)

Yi-Chen Chiang

Senior Sustainable Investment Analyst, Sustainable Investing
Manulife Investment Management

Yi-Chen is responsible for environmental, social, and governance (ESG) research, integration, and engagement activities with the primary focus on South and Southeast Asia. With expertise in sustainability and sustainable finance, prior to joining Manulife Investment Management, she was the director, sustainable finance, at Oversea-Chinese Bank, where she advised and executed sustainable finance transactions, including green/sustainability-linked loans and green/social/sustainability/sustainability-linked bonds, together with corporates across real estate, utilities, commodities, and transportation sectors in the Asia-Pacific region. Yi-Chen also gained extensive experience in integration ESG considerations in the investment and financing perspective during her time at a Singapore-based private equity fund and the Dutch development bank, with the primary focus on renewable and infrastructure assets in emerging Asia markets.

Education: M.Sc., Management of Technology, Delft University of Technology (Netherlands); B.Sc., Electrical Engineering, National Cheng Kung University (Taiwan)

Joined the company: 2022

Began career: 2010

Yijin Guo

Sustainable Investing Analyst, Sustainable Investing
Manulife Investment Management

Yijin is responsible for supporting the sustainable investing team in its integration and engagement activities, which involves conducting proprietary research to assess the sustainability-related investment risks and opportunities of companies in Asia. He also collaborates with our Asia-based portfolio managers and investment teams on stewardship and active ownership. With deep expertise in sustainability and climate change, prior to joining the firm, he was with Legal and General Investment Management (LGIM) where he was an environmental, social, and governance (ESG) analyst, focusing on real estate, private debt, and infrastructure. He developed ESG assessment tools for LGIM, produced thematic research on energy transition technologies, and coordinated climate change scenario analysis. Yijin was a TEDxSuzhou speaker on the topic of addressing climate change, a scholar of U.S. Department of State SUSIs Global Environmental Leadership Program, and a delegate to the United Nations Framework Convention on Climate Change COP 21, where the Paris Agreement was signed.

Education: M.Sc., Climate Change, Management and Finance, Imperial College London; B.Sc., Environmental Science, University of Liverpool

Joined the company: 2020

Began career: 2019

Biographies: public markets sustainable investing team (continued)

Hideki Suzuki

Director of ESG Research and Integration, Sustainable Investing
Manulife Investment Management

Hideki is responsible for leading and implementing environmental, social, and governance (ESG) data and methodology development projects that support and advance the firm's ESG integration and product development goals. He also works with investment teams in Asia to identify and assess ESG risks and opportunities for research and engagement processes, with a particular focus on ESG engagement with Japanese companies. Prior to joining the firm, Hideki was a senior corporate governance data analyst at Bloomberg, developing governance data analytics, and, before that, he worked as an ESG data analyst on Bloomberg's data product team to assist asset owners and managers with ESG integration processes using Bloomberg solutions. He began his career as an equity fundamentals data analyst for the banking and insurance sector as well as a data specialist for fixed-income and derivatives pricing products at Bloomberg.

Education: B.A., Economics and History, Fordham University

Joined the company: 2018

Began career: 1999

Biographies: private markets sustainability team

Brian J. Kernohan, CWB

Chief Sustainability Officer, Private Markets
Manulife Investment Management

Brian is responsible for sustainability strategy, support, and related engagements across Manulife Investment Management's private markets business. In his role, he directs global sustainability programs for the firm's timber, agriculture, real estate, infrastructure, and private equity and credit asset classes. Brian is also accountable for developing policies and environmental compliance mechanisms as well as being responsible for government relations concerning business and environmental strategies specific to timber and agriculture. Previously, he was director of policy and environmental advocacy for Hancock Natural Resource Group. Prior to joining the firm, he was director of policy at Forest Capital Partners, responsible for a variety of programs, including forest certification, forest policy, government affairs, public relations, conservation transactions, and ecology support. Brian is a director of Programme for the Endorsement of Forest Certification and member of the Board of Governors of the National Council for Air and Stream Improvement, and he holds the Certified Wildlife Biologist designation from The Wildlife Society.

Education: M.S., Wildlife Management, South Dakota State University; B.S., Wildlife Ecology, Michigan State University

Joined the company: 2012

Began career: 1995

Brandon Lewis

Director, Sustainability, Timberland, and Agriculture
Manulife Investment Management

Brandon is responsible for implementing the sustainability and responsible investing program of the firm's timberland and agriculture businesses by working to integrate sustainability considerations throughout all aspects of their operations globally, including corporate policy, investor communications and reporting, acquisition due diligence, product development, and operations. Prior to joining the firm, Brandon held various technical and consulting roles in environmental finance, renewable energy, and mining.

Education: M.Sc., Geology, Colorado School of Mines; M.P.A., International Development, Princeton University; B.Sc., Geology, Wheaton College

Joined the company: 2019

Began career: 2008

Biographies: private markets sustainability team (continued)

Hannah Barkan

Manager, Impact Investing and Natural Climate Solutions, Private Markets
Manulife Investment Management

Hannah is responsible for product and strategy development, investor outreach, and investor education in support of the firm's impact investing and natural climate solutions team. Prior to joining the firm, she was an investment associate with Environmental Finance, where she helped launch a growth fund focused on driving investment to parks in the United Kingdom and, before that, Hannah was an investment analyst with Big Issue Invest, a manager of social impact bonds that provide financing for social enterprises and charities across the United Kingdom.

Education: Graduate Diploma, Law, BPP Law School; B.A., International Relations, Loughborough University

Joined the company: 2021

Began career: 2013

Regan Smith

Managing Director, Sustainable Investing, Real Estate Equity and Infrastructure
Manulife Investment Management

Regan has overall accountability for implementing and managing the firm's sustainability strategy across a global portfolio of real estate. She develops strategic programs to address changing global market demand, the policy landscape, and investor expectations toward sustainability and corporate environmental, social, and governance (ESG) objectives. She works with global investment management teams, asset managers, real estate services teams, and property teams, assessing ESG issues such as the environmental and social impact of investments. Prior to joining the firm, Regan held a leadership role on the sustainability and energy team at the engineering consulting firm WSP, where she provided sustainability advisory services, green building certification, energy and carbon management, and greenhouse gas accounting. She was one of the first consultants to provide green building and sustainability consulting in Canada, and she holds professional accreditations in LEED, WELL, and RESET.

Education: B.A.Sc., Mining Engineering, B.Sc., Geography, Queen's University

Joined the company: 2018

Began career: 2004

Biographies: private markets sustainability team (continued)

Walter Viguiliouk

Managing Director, Sustainable Investing, Private Markets
Manulife Investment Management

Walter is responsible for leading the firm's sustainable investing activities across the global private equity and credit businesses; he also leads multi-asset class initiatives and reporting across the entire private markets business. Prior to joining the firm, he was a principal on the responsible investing, total fund management team at Ontario Teachers' Pension Plan, where he was responsible for leading environmental, social, and governance integration and stewardship activities across all public equity and credit strategies. Prior to that, Walter spent eight years at Jarislowsky Fraser Global Investment Management, where he was instrumental in establishing the firm's sustainable investing strategy and program and held roles in equity research, portfolio management, client relationships, and global institutional business development. He has served on various industry committees and boards, including the Value Reporting Foundation Investor Advisory Group, Pension Investment Association of Canada Investment Stewardship Committee, and the Association of Chartered Certified Accountants Global Forum for Sustainability. Walter holds the SASB FSA credential and was in the first cohort of credential holders. He's also an adjunct professor within the bachelor of commerce program at York University in Toronto, where he pioneered the first sustainable investing course within the finance program.

Education: B.Com., Specialized Honours, Finance, York University

Joined the company: 2022

Began career: 2010

Katie Wu, CFA

Associate Director, Sustainable Investing, Private Markets
Manulife Investment Management

Katie focuses on sustainable investing activities within the private equity, credit, and infrastructure businesses as well as provides leverage to the wider private markets sustainability team. Prior to joining the firm, she was part of the sustainable investing team at CPP Investments, where she worked with investment teams on environmental, social, and governance (ESG) integration and asset management across global public and private portfolio companies. Her experience includes performing ESG due diligence and partnering with investment teams through the investment lifecycle, including engaging with company board and management on its ESG strategy, reporting and disclosures, and providing expertise on the board's ESG priorities. She's been an active member in industry groups such as the 30% Club, Principles for Responsible Investment, and numerous collaborative engagement groups. Katie also as a background working in risk management and project management in capital markets, including a short stint in China, and she holds the Chartered Financial Analyst designation.

Education: HBA, Ivey Business School, Western University

Joined the company: 2022

Began career: 2011

Biographies: private markets sustainability team (continued)

Ben Welch

Program Manager, Sustainability, Real Estate
Manulife Investment Management

Ben is responsible for helping to develop and execute sustainability strategy for the firm's initiatives, including setting and monitoring targets and performing functions such as reporting, capacity building, training, and program implementation. Prior to joining the firm, he was a sustainability manager with Triovest, a commercial real estate advisory and capital firm.

Education: B.A., Environmental Studies, Carleton University

Joined the company: 2021

Began career: 2017

Liam Connell

Senior Analyst, Climate Change, Real Assets
Manulife Investment Management

Liam is responsible for supporting Manulife Investment Management's real assets teams in the establishment and continual development of decarbonization pathways. In his role, he tracks and reports on carbon planning performance, adapting strategy to meet evolving company objectives and align with market expectations. Liam joined as part of the real estate technical services team, where he gained valuable knowledge of building systems, emerging property technologies, and carbon accounting. In this previous role, he supported the Ontario real estate team in identifying and achieving 7,000 MWh in energy reductions, or approximately $1 million per year of electricity savings, and leveraging a cumulative incentive of $1.3 million to assist in funding these projects.

Education: B.A.Sc., Mechanical Engineering, Queen's University

Joined the company: 2020

Began career: 2018

Biographies: private markets sustainability team (continued)

Rachel Kelly

Senior ESG Analyst, Sustainable Investing, Private Markets
Manulife Investment Management

Rachel supports sustainable investing activities within the private equity, credit, and infrastructure businesses as well as provides leverage to the wider private markets' sustainability team. Prior to joining the firm, she was a consultant with Deloitte's Sustainability & Climate Change practice, specializing in sustainable finance. In that role, Rachel supported major Canadian banks, pension funds, and crown corporations to develop environmental, social, and governance (ESG) and net zero strategies, integrate ESG factors into investment portfolios, and quantify portfolio-financed emissions, and, before that, she completed a series of internships at BCI and Ontario Teachers' Pension Plan, working with their responsible investing, asset allocation, and investor relations teams.

Education: B.Com., Honours, University of Victoria Peter B. Gustavson School of Business

Joined the company: 2022

Began career: 2021

Alex Campagnolo

Sustainability Analyst, Timberland and Agriculture
Manulife Investment Management

Alex assists with data systems, management, and analysis for the timberland and agriculture asset team. Alex brought experience in sustainability data systems, regenerative agriculture, and cleantech when he joined Manulife in 2022.

Education: M.A., Sustainability Studies, B.A., Environmental Science and Studies, Trent University

Joined the company: 2022

Began career: 2019

Biographies: private markets sustainability team (continued)

Jasmine Ruscica

ESG Sustainability Analyst, Real Estate, Private Markets
Manulife Investment Management

Jasmine supports the sustainable investing activities within the real estate business, including climate risk and resilience, health and well-being, and building certification schemes. Prior to joining the firm, Jasmine was a sustainability analyst at business sustainability rating firm EcoVadis, supporting global supply chains, financial institutions, and public organizations to evaluate how well they integrate the environmental, social, and governance principles into their businesses. Prior to this role, she completed a series of internships at CAPREIT, Waterfront Toronto, the United Nations Global Compact Network Canada, and VIA Rail Canada, supporting their sustainability teams.

Education: M.Sc., Sustainability Management, University of Toronto; B.Com., Management Studies, Concordia University's John Molson School of Business

Joined the company: 2022

Began career: 2021

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Manulife Investment Management is the global wealth and asset management segment of Manulife Financial Corporation. We draw on more than a century of financial stewardship to partner with clients across our institutional, retail, and retirement businesses globally. Our specialist approach to money management includes the highly differentiated strategies of our fixed-income, specialized equity, multi-asset solutions, and private markets teams—along with access to specialized, unaffiliated asset managers from around the world through our multimanager model.

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