Manulife Financial Corp. - Climate Change 2023

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

With our global headquarters in Toronto, Canada, we provide financial advice and insurance, operating as Manulife across Canada, Asia, and Europe, and primarily as John Hancock in the United States. Through Manulife Investment Management, the global brand for our Global Wealth and Asset Management segment, we serve individuals, institutions, and retirement plan members worldwide. Through our behavioural insurance offerings — Manulife *Vitality*, ManulifeMOVE, and John Hancock Vitality — we support our customers in living healthier, more active lives by rewarding them for making healthy lifestyle choices. We have a storied history dating back more than 160 years. At the end of 2022, we had more than 40,000 employees, over 116,000 agents, and thousands of distribution partners, serving over 34 million customers. We trade as 'MFC' on the Toronto, New York, and the Philippine stock exchanges and under '945' in Hong Kong.

Manulife's Climate Action Plan articulates our long-term commitment to reducing our environmental footprint, supporting the transition to net zero, and investing in climate change mitigation and resilience. We are committed to net zero financed emissions within our General Account's investment portfolio by 2050. We are net zero in our operational emissions, positioned due to the carbon removals from our substantial owned and operated forests and farmland outweighing emissions, and we have committed to reduce absolute emissions (scope 1 & 2) by 40% by 2035, relative to a 2019 baseline (our 2019 baseline year reflects a typical year for our operations. The COVID-19 pandemic resulted in a remote work scenario across our operations, as such our 2020 emissions are not representative of a typical year). We have also established short-term science-based targets covering over 42% of our General Account's AUM, including power generation project finance and listed debt and equity.

Our reporting segments are:

- Asia – providing insurance products and insurance-based wealth accumulation products in Asia.
- Canada – providing insurance products, insurance-based wealth accumulation products, and banking services in Canada and has an in-force variable annuity business. Manulife Bank is a business within this reporting segment, but revenues fall below CDP's 20% threshold.
- U.S. – providing life insurance products, insurance-based wealth accumulation products and has an in-force long-term care insurance business and an in-force annuity business.
- Global Wealth and Asset Management – providing investment advice and innovative solutions to our retail, retirement, and institutional clients around the world under the Manulife Investment Management brand. This includes our private markets capabilities like real estate, timberland and agriculture and infrastructure.
- Corporate and Other – comprising investment performance on assets backing capital, net of amounts allocated to operating segments; financing costs; costs incurred by the corporate office related to shareholder activities (not allocated to operating segments); our Property and Casualty Reinsurance business; and run-off reinsurance business lines.

Manulife Investment Management businesses to highlight:

- Timberland and Agriculture – specializing in global farmland and timberland portfolio development and management. Investments are integrated with comprehensive property management operations. On behalf of Manulife's General Account and third-party clients, we manage over 5.8 million acres of forest and farmland, as of December 31, 2022.
- Real Estate – our portfolio consists of space that is occupied both by external tenants and by Manulife corporate users. Most of our assets are managed by a team of real estate professionals. We do not include data from properties that are managed by third-party property management firms in our reporting, as we do not have operational control.

We also highlight Manulife's General Account (GA), which supports the operations of our Asia, Canada, and U.S. segments. Our investment philosophy for the GA is to invest in an asset mix that optimizes our risk-adjusted returns and matches the characteristics of our underlying liabilities. We invest in a diversified mix of assets, including a variety of alternative long-duration asset classes. Our diversification strategy has historically produced risk adjusted returns while reducing overall risk. We use a disciplined approach across all asset classes, and we do not chase yield in the riskier end of the fixed income or alternative asset market. As part of our well-diversified investment program, we finance renewable energy and energy efficiency projects. As of December 31, 2022, C$47.5 billion or 11.7% of the total GA was invested in Sustainable Investments which includes green buildings, renewable energy, sustainably managed timberlands and agriculture, energy efficiency, clean transportation, sustainable management of water resources and green bonds.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

Reporting year

Start date
January 1 2022

End date
December 31 2022

Indicate if you are providing emissions data for past reporting years
Yes

Select the number of past reporting years you will be providing Scope 1 emissions data for
2 years

Select the number of past reporting years you will be providing Scope 2 emissions data for
2 years

Select the number of past reporting years you will be providing Scope 3 emissions data for
2 years

C0.3

(C0.3) Select the countries/areas in which you operate.
Australia
Barbados
Belgium
Bermuda
Brazil
Cambodia
Canada
Chile
China
Germany
Hong Kong SAR, China
India
Indonesia
Ireland
Japan
Malaysia
Myanmar
New Zealand
Philippines
Singapore
Switzerland
Taiwan, China
United Kingdom of Great Britain and Northern Ireland
United States of America
Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.
CAD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.
Operational control

C-FS0.7

(C-FS0.7) Which activities does your organization undertake, and which industry sectors does your organization lend to, invest in, and/or insure?

	Does your organization undertake this activity?	Insurance types underwritten	Industry sectors your organization lends to, invests in, and/or insures
Banking (Bank)	No	<Not Applicable>	<Not Applicable>
Investing (Asset manager)	Yes	<Not Applicable>	Exposed to all broad market sectors
Investing (Asset owner)	Yes	<Not Applicable>	Exposed to all broad market sectors
Insurance underwriting (Insurance company)	Yes	Life and/or Health	<Not Applicable>

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	56501R1064

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
Board-level committee	Oversight of our ESG strategy is part of the mandate of our Board of Directors' Corporate Governance and Nominating Committee (CGNC). The CGNC reviews the progress made on our sustainability strategy and stays informed of ESG trends, risks, and opportunities through management engagement and reporting. As of February 28, 2023, members of the CGNC include the Chair of the Board and six other independent Board members. Experience in, and an understanding of, ESG matters are also considered essential characteristics because of the importance of ESG to Manulife and the Board's role in overseeing Manulife's ESG framework. Directors are expected to have knowledge and understanding of ESG issues relevant to and based on their respective experiences in their professional careers or as a corporate director. The CGNC's oversight of our ESG framework complements the work of the Executive Sustainability Council (ESC). The ESC consists of our Global Chief Sustainability Officer (CSO) along with nine members of our Executive Leadership Team (ELT), including our Chief Executive Officer (CEO). The ESC meets monthly and is responsible for establishing the enterprise's sustainability ambition, guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG. In addition to the ESC, within our asset management business we have business segment level committees that execute asset-class-specific sustainability objectives. The CSO chairs Manulife's ESG Centre of Expertise (CoE), which consists of corporate function and business unit sustainability leads tasked with integrating sustainability into our business practices. This group's responsibilities include leading the development and implementation of the sustainability strategy. Additionally, the CoE oversees integration of sustainability into business unit strategies, policies, and procedures. Manulife's Global Climate Change Taskforce consists of representatives from multiple businesses and functional areas. It drives the development of the climate strategy, risk management activities on climate-related matters, performance tracking, and disclosures. The Climate Change Taskforce supports execution of Manulife's Climate Action Plan. In 2022, Manulife established the ESG Leaders Group consisting of senior leaders from multiple businesses and functional areas who are accountable for driving change and progress on Manulife's broader ESG performance.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	Overseeing and guiding employee incentives Reviewing and guiding strategy Monitoring the implementation of a transition plan Overseeing the setting of corporate targets Monitoring progress towards corporate targets Reviewing and guiding the risk management process	Climate-related risks and opportunities to our own operations Climate-related risks and opportunities to our investment activities The impact of our own operations on the climate The impact of our investing activities on the climate The impact of our insurance underwriting activities on the climate	Oversight of our ESG framework is part of the mandate of our Board of Directors' Corporate Governance and Nominating Committee (CGNC). The CGNC reviews the progress made on our sustainability strategy and stays informed of ESG trends, risks, and opportunities through management engagement and reporting. As of February 28, 2023, members of the CGNC include the Chair of the Board and six other independent Board members. Experience in and an understanding of ESG matters are also considered essential characteristics because of the importance of ESG to Manulife and the Board's role in overseeing Manulife's ESG framework. Directors are expected to have knowledge and understanding of ESG issues relevant to and based on their respective experiences in their professional careers or as a corporate director. Board members gain experience through ongoing education sessions and reports on ESG strategy, trends, risks, and opportunities and all members are encouraged to attend sessions on ESG matters at meetings of the CGNC. Sustainability experts upskill and educate our Board on current and emerging issues, topics and regulations that are relevant to our business and operations.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	Experience in and an understanding of ESG matters are also considered essential characteristics because of the importance of ESG to Manulife and the board's role in overseeing Manulife's ESG framework. Directors are expected to have a knowledge and understanding of ESG issues relevant to and based on their respective experiences in their professional careers or as a corporate director. In addition to considering appropriate ESG experience possessed by potential director candidates, directors gain ESG experience through ongoing education sessions and reports on ESG strategy, trends, risks and opportunities and all directors are encouraged to attend sessions on ESG matters at meetings of the corporate governance and nominating committee. Starting in 2023, members of the corporate governance and nominating committee will participate in at least one externally facilitated ESG-related education session every two years.	<Not Applicable>	<Not Applicable>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Position or committee

Chief Executive Officer (CEO)

Climate-related responsibilities of this position

Developing a climate transition plan
Implementing a climate transition plan
Setting climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities
Other, please specify (Guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan)

Coverage of responsibilities

Risks and opportunities related to our investing activities
Risks and opportunities related to our insurance underwriting activities
Risks and opportunities related to our own operations

Reporting line

Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
Manulife's CEO is a member of our Executive Sustainability Office, the group responsible for establishing the enterprise's sustainability ambition, guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan.

Position or committee
Chief Financial Officer (CFO)

Climate-related responsibilities of this position
Setting climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities
Other, please specify (Guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan)

Coverage of responsibilities
Risks and opportunities related to our investing activities
Risks and opportunities related to our insurance underwriting activities
Risks and opportunities related to our own operations

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
Manulife's CFO is a member of our Executive Sustainability Office, the group responsible for establishing the enterprise's sustainability ambition, guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan.

Position or committee
Chief Risks Officer (CRO)

Climate-related responsibilities of this position
Setting climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities
Other, please specify (Guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan)

Coverage of responsibilities
Risks and opportunities related to our investing activities
Risks and opportunities related to our insurance underwriting activities
Risks and opportunities related to our own operations

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
Manulife's CRO is a member of our Executive Sustainability Office, the group responsible for establishing the enterprise's sustainability ambition, guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan. In addition, our CRO is a member of the Executive Risk Committee (ERC), which oversees the implementation and effectiveness of environmental risk management frameworks and policies, as well as tools and metrics that monitor exposures to environmental risk. The ERC also considers climate-related risks and opportunities through the ongoing monitoring and reporting of emerging risks.

Position or committee
Chief Operating Officer (COO)

Climate-related responsibilities of this position
Setting climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities
Other, please specify (Guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan)

Coverage of responsibilities
Risks and opportunities related to our investing activities
Risks and opportunities related to our insurance underwriting activities
Risks and opportunities related to our own operations

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
Manulife's COO is a member of our Executive Sustainability Office, the group responsible for establishing the enterprise's sustainability ambition, guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan.

Position or committee
Chief Sustainability Officer (CSO)

Climate-related responsibilities of this position
Providing climate-related employee incentives
Developing a climate transition plan
Implementing a climate transition plan
Setting climate-related corporate targets
Monitoring progress against climate-related corporate targets
Managing value chain engagement on climate-related issues
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities
Other, please specify (Guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan)

Coverage of responsibilities
Risks and opportunities related to our investing activities
Risks and opportunities related to our insurance underwriting activities
Risks and opportunities related to our own operations

Reporting line
Corporate Sustainability/CSR reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
Manulife's Global Chief Sustainability Officers leads our global sustainability mandate. Our CSO is a member of our Executive Sustainability Office, the group responsible for establishing the enterprise's sustainability ambition, guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including our Climate Action Plan. The CSO also chairs Manulife's ESG Centre of Expertise (CoE), which consists of corporate function and business unit sustainability leads tasked with integrating sustainability into our business practices. This group's responsibilities include leading the development and implementation of the sustainability strategy. Additionally, the CoE oversees integration of sustainability into business unit strategies, policies, and procedures.

Position or committee
Other, please specify (Executive Sustainability Council (ESC): Members are: CEO, Global Chief Sustainability, CFO, CRO, Chief Investment Officer, Chief Operations Officer, General Counsel, Chief Marketing Officer, President and CEO of Global Wealth and Asset Management.)

Climate-related responsibilities of this position
Other, please specify (Sets Manulife's sustainability ambition and strategy and acts as recommendation body on strategy and significant issues to Executive Leadership Team, including the CEO)

Coverage of responsibilities
<Not Applicable>

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
More frequently than quarterly

Please explain
Manulife's Executive Sustainability Council (ESC) consists of our Global Chief Sustainability Officer (CS) along with nine members of our Executive Leadership Team (ELT), including our Chief Executive Officer (CEO). The work of the ESC complements our Board's oversight of our ESG framework. The Chair position, currently held by our Global Chief Marketing Officer, is held on a two-year rotational basis. The ESC meets monthly and is responsible for establishing the enterprise's sustainability ambition, guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to sustainability.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Manulife sets board-approved enterprise goals for ESG related measures that are key to our business strategy and that factor into annual incentives for the named executives in two ways: - The strategic focus component of the company performance goal is based in part on an assessment of performance against goals linked to diversity, equity, and inclusion, climate action, employee engagement and customer satisfaction - The individual performance goals for each named executive also include goals linked to climate action Monetary incentives are also provided for the management of climate-related items in our Manulife Investment Management Real Estate group.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive
Corporate executive team

Type of incentive
Monetary reward

Incentive(s)
Bonus - % of salary

Performance indicator(s)
Progress towards a climate-related target
Achievement of a climate-related target
Implementation of an emissions reduction initiative
Reduction in absolute emissions
Reduction in emissions intensity

Incentive plan(s) this incentive is linked to
Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)
Executives have performance goals linked to ESG metrics such as climate action, diversity, equity, and inclusion (DEI), employee engagement, and leadership accountability.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan
As part of our ESG strategy, Manulife sets board-approved enterprise goals for ESG-related measures that are key to our business strategy and that factor into annual incentives for the named executives in two ways: (i) the strategic focus component of the company performance score is based in part on an assessment of performance against goals linked to ESG-related measures, such as climate action; and (ii) the individual performance goals for each named executive also include goals linked to ESG-related measures, such as climate action. Performance Share Unit (PSU) and Restrictive Share Units (RSU) tie compensation to company and share price performance over both the medium and long-term.

Entitled to incentive
Chief Sustainability Officer (CSO)

Type of incentive
Monetary reward

Incentive(s)
Bonus - % of salary

Performance indicator(s)
Progress towards a climate-related target
Achievement of a climate-related target
Implementation of an emissions reduction initiative
Reduction in absolute emissions
Reduction in emissions intensity

Incentive plan(s) this incentive is linked to
Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)
The Chief Sustainability Officer has performance goals linked to Manulife's ESG strategy, including the Climate Action Plan.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan
The Chief Sustainability Officer has performance goals linked to Manulife's ESG strategy, including the Climate Action Plan.

Entitled to incentive
Other, please specify (Real Estate Asset Manager)

Type of incentive
Monetary reward

Incentive(s)
Bonus - % of salary

Performance indicator(s)
Energy efficiency improvement
Other (please specify) (Water and waste reduction targets)

Incentive plan(s) this incentive is linked to
Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)
Annual sustainability goal achievement is considered when determining performance and annual incentive compensation for each portfolio and property manager.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan
Manulife Investment Management's real estate group has an Executive Sustainability Steering Committee, which includes senior representatives from across Real Estate, to oversee the sustainability strategy and implementation. It addresses both regulatory obligations and our voluntary commitments to sustainability and excellence in environmental performance for all our operations. Annual sustainability goal achievement is considered when determining performance and annual incentive compensation for each portfolio and property manager.

C-FS1.4

(C-FS1.4) Does your organization offer its employees an employment-based retirement scheme that incorporates ESG criteria, including climate change?

	Employment-based retirement scheme that incorporates ESG criteria, including climate change	Describe how funds within the retirement scheme are selected and how your organization ensures that ESG criteria are incorporated	Provide reasons for not incorporating ESG criteria into your organization's employment-based retirement scheme and your plans for the future
Row 1	Yes, as the default investment option for all plans offered	Manulife has a pension governance model which includes oversight Committees comprised of plan fiduciaries that routinely select and monitor the investment options available to plan members in company-sponsored defined contribution (DC) plans. DC investment options made available to members are intended to be sufficiently diversified, avoid excessive risk (including climate-related and other ESG-related risks), and provide strong risk-adjusted long-term returns. Investment options are not chosen based on any single criteria, but are evaluated based on a myriad of factors, including social, environmental and ethical policies. In recent years, governance of all investment options available to North American employees has expanded to include broader integration of ESG principles. As of 2022, all investment options available to DC plan members in Canada and the US are managed by signatories of the UN Principles of Responsible Investment (PRI), who commit to integrate ESG criteria into their investment strategies.	<Not Applicable>

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	5	We define a short-term time horizon as the period within the next 5 years. This generally aligns with our business and strategic planning cycles. In addition, this generally aligns with our definition of short-term in the context of our evolving risk framework, where we monitor and assess plausible future risks with potential material impacts on our business. This includes climate-related risks, and in the short-term, would primarily focus on acute physical risks, such as severe weather events.
Medium-term	5	15	We define a medium-term time horizon as between 5 to 15 years. This generally aligns within the context of our evolving risk framework and may be considered medium to long-term from a business and strategic planning horizon context. This time horizon focuses on climate-related physical risks as well as transition risks which may begin to have a more significant influence on the degree of physical risks anticipated over the longer-term.
Long-term	15	40	We define a long-term time horizon as the period longer than 15 years. This generally aligns within the context of our evolving risk framework, which views longer term risks as events which may occur beyond 15 years. This would likely include material impacts from both acute and chronic physical risks as well as transition risks.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Manulife, a long-term oriented investor, recognizes that climate-related risks are strategically relevant and could have a substantive financial or strategic impact on our business. For the purposes of this CDP submission, a substantive financial or strategic impact is defined as the result of any existing or potential risks identified which may materially impact our long-term revenue, earnings, capital adequacy, credit ratings, our brand and reputation, and/or result in significant deviation from our plans related to revenue, earnings, or capital growth.

Our risk management practices are influenced and impacted by external and internal factors (such as economic conditions, political environments, technology, and risk culture), which can significantly impact the levels and types of risks we might face in pursuit of our strategic priorities. At the enterprise level, we identify climate-related risk within our evolving risk program which includes physical and transition risk. Our time horizon of over 15+ years generally matches our long-dated liabilities, when climate risks are expected to fully materialize over different time horizons, and as such, we monitor climate-related risks over short- (0-5 years), medium- (5-15 years) and long-term (15+ years) time horizons to better assess the relative significance of potential impacts and how and when actions are required to address them.

Our capital management team has performed initial stress tests using the parameters of the Prudential Regulatory Authority. The initial tests showed that portfolio impact may be notable, but solvency remains intact. We expect to continue evolving our stress testing capabilities over time.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
Manulife’s Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Manulife’s broader enterprise risk management (ERM) framework provides a structured approach to risk taking and risk management activities across the enterprise, supporting our long-term revenue, earnings, and capital growth strategy. The ERM Framework, corporate strategy and business objectives are all aligned to each other, and the risk management protocols and programs are embedded within every business segment. Guided by our Environmental Risk Policy, along with business-specific policies, standards, and guidelines, climate-related risks and opportunities are identified and categorized using Manulife’s existing risk taxonomy, specifically across our principal risk types. We do not view climate-related risk as a standalone risk category but as a transversal risk that can manifest across all our existing principal risk types, including strategic, market, credit, product, or operational risk, as well as legal and reputational risk. While we only pursue risks we can analyze and monitor when appropriate, we also manage risks which arise outside of our direct influence. If exposures materially increase, we will activate management actions designed to bring exposures back to desired levels. As an integrated component of our business model, the risk management function assists the Company in achieving our objectives and in reaching higher levels of operational excellence, while encouraging transparency and organizational learning. In 2022, we expanded our Environmental Risk Policy to articulate Manulife’s risk appetite related to environmental risks and will continue to pursue approaches to further integrate [those risks] into our enterprise-wide risk appetite framework.

Climate-related risks are governed at various levels across the enterprise. The Board’s CGNC oversees matters related to climate change as part of the oversight of Manulife’s ESG framework. The Board Risk Committee also considers climate-related risks and opportunities through the ongoing monitoring and reporting of emerging risks. Manulife’s Executive Sustainability Council is responsible for the climate strategy, risk management, and disclosures. Manulife’s [Global] Climate Change Taskforce which consists of representatives from multiple businesses and functional areas and is led by the Chief Sustainability Officer, drives the development of the climate strategy, risk management activities on climate-related matters, performance tracking, and disclosures.

Principle Risks - Our insurance, wealth and asset management and other financial services businesses subject Manulife to a broad range of risks. Management has identified the following risks and uncertainties to which our businesses, operations and financial condition are subject grouped under five principal risk categories: strategic risk, market risk, credit risk, product risk and operational risk. We view climate-related risk as a transverse risk, since the broad range of actual or potential risks can impact any of our key risks through the manifestation of physical and transition climate-related risks. Consistent with the TCFD, Manulife defines climate-related risk as the risk of loss, either directly through financial loss or indirectly through reputational damage, resulting from the inability or failure to adequately prepare for the impacts from climate change or the transition to a low-carbon economy. Physical risks include acute risks that are event-driven, such as extreme heat or cold, catastrophic storms, and floods. It also includes chronic risks which are longer-term shifts in climate patterns, such as rising global temperatures and sea levels. Transition risks include risks associated with transitioning to a low-carbon economy and may entail extensive changes in policies, regulations, technologies, markets, or consumer preferences to address mitigation and adaptation efforts.

As a global insurer and asset manager, we consider climate change risks and opportunities, where relevant, as part of our direct operations, focusing on company-specific risks and opportunities, which can include at our subsidiaries’ level: climate-related regulations; government incentives that support renewable energy markets; exposure to weather events that could impact our investments, corporate properties, information technology systems, and business continuity plans at office locations. These types of analyses can be further strengthened by our interactions with the senior management of our subsidiaries and portfolio companies.

Manulife Investment Management’s Climate Change Statement, ESG Engagement Policy and the Sustainable Investing and Sustainability Risks Statement covers climate change risk factors in investment decision-making. For example, MIM’s public markets team directly engages with some of the world’s largest emitters on climate-related risks and opportunities directly with approximately 30% of our engagement conversations touching on emissions, physical risk and/or energy management in 2022. We also work with peers through collaborative industry programs including Climate Action 100+, Climate Engagement Canada, and the Asian Investor Group on Climate Change (AIGCC) where, in 2022, MIM had a leading or supporting role on a total of 11 engagements globally. Our investment teams consider sustainability factors, including climate risks and opportunities, in their investment processes. Over 90% of our AUM in public equity and public fixed-income strategies , for example, are fully integrating ESG factors under our proprietary assessment framework. Integration is based on Manulife Investment Management’s proprietary Integration Progression Levels (IPL), which measures our in-house investment teams progress in ESG integration. We look to incorporate material ESG considerations throughout the stages of our investment and asset ownership lifecycles, taking into account the characteristics of the asset class and investment process in question, as well as industry and geography, among other factors. In this document, references to our investment approach, applicable types of investments, and assets under management in scope of analysis exclude certain investment strategies, asset classes, exposure or security types where we do not currently integrate ESG factors. Examples of what would not integrate ESG factors include, but are not limited to money market, securitized assets, ETF, passive and certain third-party sub-advised strategies or certain currency or derivative instruments. In these instances, Manulife Investment Management may not fully integrate ESG factors. Each investment team operates in different markets and with different nuances to its approach to investing.

Value chain stage(s) covered
Direct operations

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
Manulife Investment Management’s Timberland and Agriculture group: Climate risk is assessed as part of the due diligence process for new acquisitions, where future water availability, fire and pest risk (among other issues) and carbon market opportunities are identified. One identified physical risk is chronic risks associated with changes in precipitation patterns and extreme variability in weather patterns. Our investment goal is to build diversified investment portfolios that are likely to reduce risks over the life of the asset. Process-wise, the Timberland and Agriculture group’s CFO uses quarterly risk registry updates to assess climate-related risks and opportunities; whereas the Timberland and Agriculture group’s COO uses those registries to manage related risks.

Value chain stage(s) covered
Upstream

Risk management process

A specific climate-related risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
Manulife Investment Management Real Estate considers climate and natural hazard risks during its acquisition due diligence process. Third party consultants perform building assessments and rely on local studies and guidelines where available. Environmental assessments, building status reports and insurance renewals are conducted periodically depending on the risk profile of a property. The Real Estate Sustainability team assesses portfolio-level climate change risks and opportunities and tracks and benchmarks energy and GHG emissions. In our investment practices, we list sustainability issues and risks that must be considered in due diligence checklists. A "Sustainability in Investment and Due Diligence Summary Form" is completed for investments, is signed off by the investment manager and is provided as part of the investment package. This form specifically asks if there were any climate related risks identified during the due diligence process.

One of the primary processes for identifying, assessing, and responding to climate-related risks and opportunities in our standing investments is through Manulife Investment Management's Sustainable Building Standards, which define requirements and best practices to property teams. In 2022, we rolled out two new Standards: Climate Change Resilience and GHG Management. The Climate Change Resilience Standard uses forward-looking, third-party climate risk data to evaluate our global asset management portfolio's exposure to climate and extreme weather risks. Our GHG Management Standard helps to educate teams on baseline emissions, model emissions out to 2035 and 2050, inventory planned and potential efficiency projects, and supports associated capital planning. Our real estate developments are generally reviewed for climate risk, including wildfires, heat stress, water stress, seal level rise, hurricanes and typhoons, and floods. Physical resilience measures are built into developments, where appropriate, based on specific risks present at the asset. In 2022, we included climate risk criteria in our minimum design requirements for new development projects. We also updated our process for new developments to ensure that nature and biodiversity are actively taken into consideration.

We report our progress to investors and other stakeholders through our Real Estate Sustainability Report, the annual GRESB for each fund and the PRI Direct Property Investing module.

In 2021, our real estate investment management arm produced its first climate risk disclosure report. This report details the climate-related physical and transition risks we may face in the short, medium, and long term and lays out how we identify and manage the climate-related risks and opportunities. This work draws on third-party data that combines both historical results and forward-looking climate model outputs focused on seven distinct risks: floods, extreme windstorms, wildfire, sea-level rise, drought, heat stress, and earthquakes. As a result, our approach to mitigating climate risk takes a three-step approach involving raising awareness, evaluating risks and opportunities, and integrating best practices.

Value chain stage(s) covered
Upstream

Risk management process
A specific climate-related risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
Manulife Investment Management's Timberland and Agriculture group: Climate risk is assessed as part of the due diligence process for new acquisitions, where future water availability, fire and pest risk (among other issues) and carbon market opportunities are identified. One identified physical risk is chronic risks associated with changes in precipitation patterns and extreme variability in weather patterns. Our investment goal is to build diversified investment portfolios that are likely to reduce risks over the life of the asset. Process-wise, the Timberland and Agriculture group's CFO uses quarterly risk registry updates to assess climate-related risks and opportunities; whereas the Timberland and Agriculture group's COO uses those registries to manage related risks.

Value chain stage(s) covered
Upstream

Risk management process
A specific climate-related risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
The General Account identifies and assesses climate-related risk in alignment with its ESG guidelines, specifically for General Account assets, backing in-force liabilities. ESG risks are also considered during the rating and annual review process by credit analysts. For each credit within the portfolio, on an annual basis a risk assessment report is created which explicitly requires an assessment of the most salient risks of a credit, inclusive of climate change and other ESG risks to inform an internal ESG Score, which may include an assessment derived from primary data sources as well as industry reports and/or third-party providers (MSCI, S&P, Moody's, etc.).

With notable concentration of fixed income in our portfolio, the General Account also considers climate factors through monitoring material climate issues at, and encouraging climate awareness by, our borrowers, as appropriate, as part of general ongoing investment surveillance (for example, through publicly available reporting and/or interactions with borrowers). In some cases, this may present a challenge as many of our investments are in companies/assets that are privately held, as such there may be limited to no publicly available information. Regular reviews through our existing investment processes provides opportunities for analysts to further understand exposure to General Account also includes discussion of material climate risks and opportunities in investment reviews and approval materials.

We have assessed the carbon emissions of our investment portfolio – carbon emissions measurement is a recommended measure of climate risk through the TCFD and enables us to identify exposure to transition risk. This assessment utilizes third party data sources and internal models to assist in the calculation of these measures. In addition, Manulife has identified higher-risk sectors within the portfolio, defined as “high carbon assets” and again in alignment with TCFD metric recommendations.

As part of our management of transition climate-related risks, the General Account has developed sustainability targets in alignment with the methodology for financial institutions outlined by the SBTi, in combination with Partnership for Carbon Accounting Financials (PCAF) methodologies for emissions accounting. The methods and assumptions underlying our targets follow the guidance established by the SBTi, which draws on the best available science-based pathways for limiting warming to well below 2 degrees Celsius, as established by the Paris Agreement. In alignment with SBTi guidance, a combination of sector-specific and asset-class specific targets have been established for the financed emissions of our General Account and we have evaluated our portfolio’s alignment to global warming pathways using a temperature score metric, to support forward-looking assessments of issuer decarbonization contributing to both our Climate Action Plan and management of climate related transition risk.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Failure to adequately prepare for the potential realities of climate change may have a negative impact on our financial position and/or our ability to operate. Climate change risks include transition risks, such as potential positive and negative impacts of climate-related litigation, technological change, and environmental regulatory regimes; and physical risks, such as disruption resulting from extreme weather conditions or increased mortality or morbidity. MFC’s internal policies and guidelines provide enterprise-wide protocols for managing environmental risks, including climate change. Business and functional units are responsible for observing protocols and exercising due diligence to identify and manage environmental risks in accordance with these policies. Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Our Global Risk Management team continues to enhance risk management practices to consider the potential impacts from climate-related risk, including in our investment decision-making processes, life insurance underwriting due diligence, and assessment of operational risks and controls. We are continuing to enhance our processes for identifying, assessing, and managing environmental risks and integrating them into our ERM framework. This will ensure that they are assessed in a manner consistent with our common approach to risk taking and risk management activities. Examples: Corporate level: The Manulife Sustainability Centre of Expertise works in tandem with Regulatory and Public Affairs group to monitor emerging regulations and cascades through the organization as appropriate. Manulife’s Compliance function is responsible for monitoring compliance with current regulations. Business unit Sustainability leads are responsible for monitoring regulatory changes in their sectors. For example: The Manulife Investment Management real estate arm complies with local energy benchmarking and mandatory greenhouse gas, energy and water reporting requirements in jurisdictions where we own assets.
Emerging regulation	Relevant, always included	Business and functional units are responsible for observing protocols and exercising due diligence to identify and manage environmental risks in accordance with internal policies and guidelines. Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Our Global Risk Management team continues to enhance risk management practices to consider the potential impacts from climate-related risk, including in our investment decision-making processes, life insurance underwriting due diligence, and assessment of operational risks and controls. We are continuing to enhance our processes for identifying, assessing, and managing environmental risks and integrating them into our ERM framework. This will ensure that they are assessed in a manner consistent with our common approach to risk taking and risk management activities. The Centre of Expertise works in tandem with Regulatory and Public Affairs group to monitor emerging regulations and cascades through the organization as appropriate. Business unit Sustainability leads are responsible for monitoring regulatory changes in their sectors. Manulife Investment Management Timberland and Agriculture closely monitors carbon regulation and markets to be prepared to offer solutions to investors in the event of increased or more widespread carbon prices. Once an investment is made, investment teams continue to monitor all material aspects that could impact an asset or company, including Sustainability risks and opportunities. Relevant risks or concerns are addressed as part of the team’s ongoing investment process via on-going company surveillance and engagement, where relevant, portfolio positioning and risk monitoring, the sustainability teams may also conduct, on a periodic basis, reviews of individual portfolios, and engage with investment teams about potential Sustainability Risks as a further enhancement to the materiality assessment. At the corporate level, internal working groups regularly monitor and assess emerging regulations and best practice guidance and frameworks impacting the organization. Examples include the Taskforce for Nature-related Risk Disclosures, new regulatory expectations in Canada, Malaysia, Hong Kong and other jurisdictions in which we operate.
Technology	Relevant, always included	Failure to adequately prepare for the potential realities of climate change may have a negative impact on our financial position and/or our ability to operate. Climate change risks include transition risks, such as potential positive and negative impacts of climate-related litigation, technological change, and environmental regulatory regimes; and physical risks, such as disruption resulting from extreme weather conditions or increased mortality or morbidity. MFC’s internal policies and guidelines provide enterprise-wide protocols for managing environmental risks, including climate change. Business and functional units are responsible for observing protocols and exercising due diligence to identify and manage environmental risks in accordance with these policies. Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Our Global Risk Management team continues to enhance risk management practices to consider the potential impacts from climate-related risk, including in our investment decision-making processes, life insurance underwriting due diligence, and assessment of operational risks and controls. We are continuing to enhance our processes for identifying, assessing, and managing environmental risks and integrating them into our ERM framework. This will ensure that they are assessed in a manner consistent with our common approach to risk taking and risk management activities. Manulife monitors and assesses [the] risks associated with new technologies in the market. Examples include our utilities investment team considering disruptive technologies that may impact energy delivery, e.g. advances in the electric vehicle infrastructure.
Legal	Relevant, always included	Failure to adequately prepare for the potential realities of climate change may have a negative impact on our financial position and/or our ability to operate. Climate change risks include transition risks, such as potential positive and negative impacts of climate-related litigation, technological change, and environmental regulatory regimes; and physical risks, such as disruption resulting from extreme weather conditions or increased mortality or morbidity. MFC’s internal policies and guidelines provide enterprise-wide protocols for managing environmental risks, including climate change. Business and functional units are responsible for observing protocols and exercising due diligence to identify and manage environmental risks in accordance with these policies. Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Our Global Risk Management team continues to enhance risk management practices to consider the potential impacts from climate-related risk, including in our investment decision-making processes, life insurance underwriting due diligence, and assessment of operational risks and controls. We are continuing to enhance our processes for identifying, assessing, and managing environmental risks and integrating them into our ERM framework. This will allow them to be assessed in a manner consistent with our common approach to risk taking and risk management activities. Examples: We consistently monitor the potential of legal actions or shareholder proposals/resolutions regarding our management of climate change risks.
Market	Relevant, always included	Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Our Global Risk Management team continues to enhance risk management practices to consider the potential impacts from climate-related risk, including in our investment decision-making processes, life insurance underwriting due diligence, and assessment of operational risks and controls. We are continuing to enhance our processes for identifying, assessing, and managing environmental risks and integrating them into our ERM framework. This will ensure they are assessed in a manner consistent with our common approach to risk taking and risk management activities. E.g.: Manulife Investment Management (MIM) Real Estate has a Sustainable Real Estate Framework to supplement the MIM’s Sustainable Investing Statement. We integrate ESG considerations into investment and due diligence practices to identify and manage risks and opportunities; integrate ESG considerations into our ongoing portfolio and asset management practices; track and report on ESG integration in our portfolio; and promote responsible investing in the real estate industry through participation in industry initiatives such as the Global Real Estate Sustainability Benchmark Assessment. With increasing demand for sustainable and energy efficient properties; we are at risk of tenants going elsewhere if we do not address these. To help guard against climate-related risks, in 2021, Real Estate developed 2 new Sustainable Building Standards: Climate Change Resilience and GHG Management and Planning. To develop the Climate Change Resilience Standard, we used forward-looking, third-party climate risk data to evaluate our global portfolio’s exposure to climate and extreme weather risks. These risks include floods, sea level rise, extreme windstorms, wildfire, heat stress, water stress and earthquakes. We also inventoried our portfolio for property resilience—the presence of features and practices such as risk awareness, resilience management, emergency management, business continuity and building attributes that help mitigate climate risks. MIM also offers Negative (and norms based) screening to help investors better align with their values, as well as Positive or best-in-class (and norms based) screening to positively influence climate risks in industries globally.

	Relevance & inclusion	Please explain
Reputation	Relevant, always included	Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Our Global Risk Management team continues to enhance risk management practices to consider the potential impacts from climate-related risk, including in our investment decision-making processes, life insurance underwriting due diligence, and assessment of operational risks and controls. We are continuing to enhance our processes for identifying, assessing, and managing environmental risks and integrating them into our ERM framework. This will ensure that they are assessed in a manner consistent with our common approach to risk taking and risk management activities. Financial institutions such as Manulife, are expected by stakeholders to demonstrate their commitment to the transition to a low-carbon economy. The Manulife Executive Sustainability Council and Sustainability Centre of Expertise work in tandem with our Investor Relations, Brand Marketing, Regulatory and Public Affairs groups to monitor emerging reputational risks associated with sustainability factors. Examples: Manulife Investment Management's Timberland and Agriculture group example 1: Since 2019, Manulife Investment Management Timber and Agriculture's Executive Team have upheld a formal zero-deforestation policy, committing not to clear native forests or acquire any land on which native forests have been cleared since regional cut-off dates agreed upon by international best practices. Manulife Investment Management's Timber and Agriculture example 2: Since 2019, Manulife Investment Management has worked collaboratively with peers in the agriculture sector to develop a performance-based, industry-wide sustainability standard and third-party certification program for agriculture, known as Leading Harvest. We are committed to enrolling eligible properties in the program, which includes in its principles energy efficiency and emissions reductions.
Acute physical	Relevant, always included	Failure to adequately prepare for the potential realities of climate change may have a negative impact on our financial position and/or our ability to operate. Climate change risks include transition risks, such as potential positive and negative impacts of climate-related litigation, technological change, and environmental regulatory regimes; and physical risks, such as disruption resulting from extreme weather conditions or increased mortality or morbidity. MFC's internal policies and guidelines provide enterprise-wide protocols for managing environmental risks, including climate change. Business and functional units are responsible for observing protocols and exercising due diligence to identify and manage environmental risks in accordance with these policies. Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Our Global Risk Management team continues to enhance risk management practices to consider the potential impacts from climate-related risk, including in our investment decision-making processes, life insurance underwriting due diligence, and assessment of operational risks and controls. We are continuing to enhance our processes for identifying, assessing, and managing environmental risks and integrating them into our ERM framework. This will ensure that they are assessed in a manner consistent with our common approach to risk taking and risk management activities. Examples: Corporate level: An acute physical risk for Manulife is business disruption due to severe weather events that may translate into the mortality risk, operational disruption, or devaluation of impacted invested assets, for example, coastal real estate. Manulife has business continuity policies, plans and procedures in place that take into account the risk of business disruption due to severe weather events. Manulife Investment Management's Real Estate group: Manulife Investment Management's real estate group assesses natural hazards as part of its due diligence process, physical risk is included in insurance reports including natural hazards, environmental reports, e.g. floodplain maps, wind hazards, soil contamination. Manulife Investment Management's Timberland and Agriculture group considers wildfire risk in its timberland acquisition due diligence.
Chronic physical	Relevant, always included	Climate change risks include transition risks, such as potential positive and negative impacts of climate-related litigation, technological change, and environmental regulatory regimes; and physical risks, such as disruption resulting from extreme weather conditions or increased mortality or morbidity. MFC's internal policies and guidelines provide enterprise-wide protocols for managing environmental risks, including climate change. Business and functional units are responsible for observing protocols and exercising due diligence to identify and manage environmental risks in accordance with these policies. Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company. Our Global Risk Management team continues to enhance risk management practices to consider the potential impacts from climate-related risk, including in our investment decision-making processes, life insurance underwriting due diligence, and assessment of operational risks and controls. We are continuing to enhance our processes for identifying, assessing, and managing environmental risks and integrating them into our ERM framework. This will ensure that they are assessed in a manner consistent with our common approach to risk taking and risk management activities. Examples: As part of the Manulife Investment Management's Timber and Agriculture's risk assessments, the impact and management of chronic physical conditions such as drought and water scarcity are built into investment due diligence and operational procedures. We conduct water scarcity due diligence on acquisition targets. Manulife Investment Management's real estate group assesses natural hazards as part of its due diligence process, physical risk is included in insurance reports including natural hazards, environmental reports, e.g. floodplain maps, wind hazards. During 2020, our product and insurance risk management teams laid the foundational framework for research and analysis of the impacts of climate change, such as vector-borne diseases (such as malaria), extreme weather events, and increased temperatures, on morbidity and/or mortality. The research, along with experience data, will help to inform decisions related to underwriting assumptions over the long term. Our investment arm also aims to creation of a biodiversity framework for disclosure.

C-FS2.2b

(C-FS2.2b) Do you assess your portfolio's exposure to climate-related risks and opportunities?

	We assess the portfolio's exposure	Explain why your portfolio's exposure is not assessed and your plans to address this in the future
Banking (Bank)	<Not Applicable>	<Not Applicable>
Investing (Asset manager)	Yes	<Not Applicable>
Investing (Asset owner)	Yes	<Not Applicable>
Insurance underwriting (Insurance company)	Yes	<Not Applicable>

C-FS2.2c

(C-FS2.2c) Describe how you assess your portfolio's exposure to climate-related risks and opportunities.

	Type of risk management process	Proportion of portfolio covered by risk management process	Type of assessment	Time horizon(s) covered	Tools and methods used	Provide the rationale for implementing this process to assess your portfolio's exposure to climate-related risks and opportunities
Banking (Bank)	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

	Type of risk management process	Proportion of portfolio covered by risk management process	Type of assessment	Time horizon(s) covered	Tools and methods used	Provide the rationale for implementing this process to assess your portfolio's exposure to climate-related risks and opportunities
Investing (Asset manager)	Integrated into multi-disciplinary company-wide risk management process	90	Qualitative and quantitative	Short-term Medium-term Long-term	The Transition Pathway Initiative (TPI) Portfolio temperature alignment Scenario analysis Internal tools/methods External consultants Other, please specify (Climate Value at Risk (CVaR))	Manulife Investment Management believes that climate change is a systemic risk that may have an imminent and potentially irreversible impact on the global economy, capital markets, and society at large. Over 90% of our AUM in public equity and public fixed-income strategies (Exception to this are strategies where ESG integrated investment approach is impractical or impossible, for example in relation to certain instrument types where sustainable comparable alternatives are unavailable, passive products, funds that invest in derivative instruments, products managed in accordance with specific client objectives, and delegation to third-party investment managers. Refer to Manulife IM's Sustainable Investing and Sustainability Risk Statement for more details) were integrating ESG factors under our proprietary integration assessment framework which includes consideration of climate risk. In our public market business, each of our portfolio managers (PM) have their own unique approach and methodology for research, asset selection and ongoing portfolio management. Our bespoke ESG integration program allows each PM to incorporate ESG into their decision-making process in a way that makes sense for their overall approach, requiring a depth of expertise to grow among team members on the climate risks and opportunities that face their portfolio – this will vary across asset class, regions, sectors and other factors. PMs now have customized climate data on their screens because of our work in 2022 to curate climate risk data from multiple sources and build the IT framework needed to integrate it into PMs daily tools. As an example, our Liability Driven Investment (LDI) team used Climate Value at Risk (CVaR) this year to assess climate risk in their portfolio. One of the main goals of an LDI strategy is to ensure that expected cash flows are received in order to meet the pension plan's liabilities or, in other words, minimize default risk. Migration risk arises when a company's credit rating falls below BBB, thereby becoming a high-yield issuer. By exiting the investment-grade universe, the impact on the performance of an LDI strategy is significant, since the portfolio manager would, in many cases, be forced to sell the company's bonds under conditions that aren't necessarily favourable. The LDI team utilizes the CVaR metric which aims to measure the potential negative impact of the effects of climate change on the valuation of issuers (at the company or share level) or individual holdings (at the security level) based on different scenarios. CVaR data is available at the issuer level, but also at the level of most individual bonds, providing additional granularity as the score takes into account bond maturity timeframes. The data today is too limited to include the physical risk factor in our analysis, but we do use transition risk and technological opportunities factors. Future climate risk in the Canadian and U.S. bond markets are quite different: Although the total CVaR is slightly lower for the Canadian bond market (6.0% versus 6.6% in the U.S), and Canada has only two sectors that could be considered high risk (while the United States has four), managing corporate bond climate risk in an LDI mandate is more complex for a Canadian mandate than a U.S. mandate. More than 35% of Canadian corporate bonds are short-term bonds from the financial ex-insurance sector, which significantly reduces the total CVaR of the Canadian market. This is noteworthy as an LDI mandate invests primarily in mid- to long-term bonds to match the duration of liabilities. Therefore, they can't use many of these bonds to reduce climate risk as much as a traditional corporate bond strategy could. While there are other factors to consider, such as currency risk and meeting investment objectives, CVaR shows that the U.S. bond market is a good option for diversifying the climate risk exposure of our Canadian LDI mandates. For our Timberland and Agriculture business, conducting scenario analyses on biological assets is challenging due to the significant uncertainties around the ability of these assets to adapt to changing climate. During 2022, we invested in a third-party analytical platform that will enable us to systematically evaluate climate risks under various scenarios across all our major investment regions. In our infrastructure and private equity and credit businesses, we have integrated climate risk assessments into our due diligence and post investment processes. During due diligence, we look to assess both physical and transition climate-related risks when material. Post investment, we monitor climate related metrics across our portfolio, have measured emissions, and further assess climate risk or opportunities.
Investing (Asset owner)	Integrated into multi-disciplinary company-wide risk management process	34	Qualitative and quantitative	Short-term Medium-term	Scenario analysis Internal tools/methods	There's no perfect single data set on the topic of climate change effects, so we apply an active approach to third-party data and use tools that we complement with our own industry and first-hand knowledge through engagement to understand companies' vulnerabilities and strengths. We develop differentiated analytical techniques, including scenario analysis, to inform our security selection and valuation; scenario analysis can also inform portfolio positioning but also TCFD-recommended metrics like carbon footprints and temperature alignment. The General Account has undertaken, and will continue to implement, various processes to enable climate change risks assessments within its investment portfolio. We have assessed the carbon emissions of our investment portfolio – carbon emissions measurement is a recommended measure of climate risk through the TCFD and enables us to identify exposure to transition risk. This assessment utilizes third party data sources and internal models to assist in the calculation of these measures. In addition, Manulife has identified higher-risk sectors within the portfolio, defined as "high carbon assets" and again in alignment with TCFD metric recommendations. With an investment strategy that incorporates, the General Account also considers climate factors through monitoring material climate issues at, and encouraging climate awareness by, our borrowers, as appropriate, as part of general ongoing investment surveillance (for example, through publicly available reporting and/or interactions with borrowers). In some cases, this may present a challenge as many of our investments are in companies/assets that are privately held, as such there may be limited to no publicly available information. General Account also includes discussion of material climate risks and opportunities in investment reviews and approval materials. As it relates to climate risk in individual assets, Manulife's investment portfolio is governed by a set of ESG Guidelines that are followed when assessing ESG-related risks and opportunities, including climate change. Climate-related risks and opportunities are assessed at the time of initial underwriting and during the ongoing credit monitoring process. For each credit within the portfolio, on an annual basis a risk assessment report is created which explicitly requires an assessment of the most salient ESG risks of a credit, inclusive of climate change risks, which may include an assessment derived from primary data sources as well as industry reports and/or third-party providers (MSCI, S&P, Moody's, etc.) Additionally, the Corporate Finance group formed a Climate Change Working Group to assess most at-risk sectors (heat mapping), work to standardize and implement improved monitoring processes, and to educate departmental investment professionals to better assess and standardize portfolio related risks.
Insurance underwriting (Insurance company)	A specific climate-related risk management process	15	Qualitative and quantitative	Short-term Medium-term Long-term	Internal tools/methods	We have an established framework to assess the impact of climate-related risks on mortality and morbidity rates by country. We considered specific factors such as regional weather events, and the ability of healthcare infrastructure to respond and adapt to such events. This framework is also integrated into our assessment geographic concentration of risk limits. We review our methodology every 3 years, allowing us to refine the process and make improvements. With respect to the approximate portfolio covered, it's difficult to quantify. Currently it applies to foreign resident sales, and group benefits life sales. As an approximate estimate would be 15% of the portfolio.

C-FS2.2d

(C-FS2.2d) Does your organization consider climate-related information about your clients/investees as part of your due diligence and/or risk assessment process?

	We consider climate-related information	Explain why you do not consider climate-related information and your plans to address this in the future
Banking (Bank)	<Not Applicable>	<Not Applicable>
Investing (Asset manager)	Yes	<Not Applicable>
Investing (Asset owner)	Yes	<Not Applicable>
Insurance underwriting (Insurance company)	<Not Applicable>	<Not Applicable>

C-FS2.2e

(C-FS2.2e) Indicate the climate-related information your organization considers about clients/investees as part of your due diligence and/or risk assessment process, and how this influences decision-making.

Portfolio
Investing (Asset owner)

Type of climate-related information considered
Emissions data
Emissions reduction targets
Climate transition plans
TCFD disclosures
Other, please specify (Carbon-related assets; Sustainable investments)

Process through which information is obtained
Directly from the client/investee
From an intermediary or business partner
Data provider
Public data sources

Industry sector(s) covered by due diligence and/or risk assessment process
Energy
Materials
Capital Goods
Commercial & Professional Services
Transportation
Automobiles & Components
Consumer Durables & Apparel
Consumer Services
Retailing
Food & Staples Retailing
Food, Beverage & Tobacco
Household & Personal Products
Health Care Equipment & Services
Pharmaceuticals, Biotechnology & Life Sciences
Software & Services
Technology Hardware & Equipment
Semiconductors & Semiconductor Equipment
Telecommunication Services
Media & Entertainment
Utilities
Real Estate

State how this climate-related information influences your decision-making
In accordance with our ESG Guidelines, the General Account incorporates climate-related considerations throughout the investment cycle. We recognize the underlying risks of issuer inaction on decarbonization. Setting short-term emissions reduction targets is a step towards management of these risks and can inform how we consider providing capital to sectors, companies, or projects that support decarbonization efforts and potentially limiting capital to those with unfavorable emissions profiles. To this end, we evaluate our investment approach toward higher-emitting sectors such as power generation and oil and gas on an ongoing basis, and, where deemed appropriate, recommend changes to investment limits and/or the investment duration of certain sub-sectors.
An internally developed ESG Scoring methodology is utilized to facilitate comparability within and across sectors for Credit Committee. Issuers and sectors receive ratings based on climate risk-related information, in addition to other potentially material ESG risk factors. These scores inform Credit Committee decision-making on aspects like deal approvals but also investment timeframes and tenor.
The power generation sector is a critical and central enabler of the decarbonization of all other sectors. With increased electrification of aspects such as road transport, demands on our electrical grids are expected to grow substantially in the transition to a low carbon economy. It is for this reason that the sector, and project financing activities specifically, are an area of focus for science-based pathways to net zero. Electricity is generated by a diverse mix of energy sources, and geography and technology play important roles in defining the conditions for financial viability of projects utilizing cleaner energy sources – projects can range from conversions of coal facilities to natural gas to development of new wind farms. Manulife has already taken advantage of the opportunities presented by clean energy, as reflected in the already low emissions intensity of our project finance portfolio. Nonetheless, we continue to view the sector as a significant target for investment, with supportive public policies such as the Inflation Reduction Act in North America enhancing the financial viability of clean energy positions. We maintain our focus on projects that displace lower efficiency energy sources like coal that best match the long-term liabilities of our business model.

Portfolio
Investing (Asset manager)

Type of climate-related information considered
Emissions data
Energy usage data
Emissions reduction targets
Climate transition plans
TCFD disclosures

Process through which information is obtained
Directly from the client/investee
From an intermediary or business partner
Data provider
Public data sources
Other, please specify (We obtain this information from our investments, which we manage directly.)

Industry sector(s) covered by due diligence and/or risk assessment process
Energy

Materials
Capital Goods
Commercial & Professional Services
Transportation
Automobiles & Components
Consumer Durables & Apparel
Consumer Services
Retailing
Food & Staples Retailing
Food, Beverage & Tobacco
Household & Personal Products
Health Care Equipment & Services
Pharmaceuticals, Biotechnology & Life Sciences
Software & Services
Technology Hardware & Equipment
Semiconductors & Semiconductor Equipment
Telecommunication Services
Media & Entertainment
Utilities
Real Estate

State how this climate-related information influences your decision-making
Broadly summarized, our available actions relate to asset allocation and selection, investment analysis and research, outcomes-based engagement with regulators, data providers, and issuers, proxy voting, mitigating direct GHG emissions, deploying sustainability management practices for operated assets. 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 or avoid any investment which is deemed misaligned with our risk-reward aims.
Our public markets sustainable investing team developed models and tools to assess the potential impact on our portfolios of the 4 IPCC scenarios. The climate-related risks identified in CVaR metric are now available to our investment teams to incorporate into their decision-making and risk management processes. Climate data is included in our daily risk reporting and portfolio analysis reports, and this is complemented by regular discussions regarding emerging risks. We also may address climate risk through thematic product offerings. Our sustainable product offerings consider climate generally as part of the overall investment process and we also have climate-specific thematic offerings. In 2022, and as part of our integrated approach, our investment teams identified two issuers within their portfolios that were most at risk to the transition to a low carbon world and began engaging using an internal set of engagement questions as a guide. Our Real Estate Investment teams use third-party climate risk data to assess physical and transition risks. Climate risk data metrics include risk exposure to wildfires, heat stress, water stress, seal level rise, hurricanes and typhoons, and floods. As part of the initial ESG analysis, any risks identified as ‘high-risk’ or ‘red flag’ are included in the investment memo to provide additional context to the investment steering committee. Our Timberland and Agriculture business considers likely emissions & removals from potential investments as one factor in our investment process by which we determine whether to invest. Within our infrastructure and private equity & credit businesses, we integrate all material climate considerations into our standard ESG due diligence process. The outcomes of our ESG due diligence are documented in our investment memoranda and are presented to the investment committee prior to making an investment decision.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Risk 1

Where in the value chain does the risk driver occur?
Investing (Asset manager) portfolio

Risk type & Primary climate-related risk driver

Chronic physical	Changing precipitation patterns and types (rain, hail, snow/ice)

Primary potential financial impact
Increased insurance claims liability

Climate risk type mapped to traditional financial services industry risk classification
Operational risk

Company-specific description
As a global real estate owner with assets located in various geographic locations, the type and level of risk for individual assets will vary significantly. For example, assets in Western North America are more likely to be exposed to greater risk of wildfires than in Eastern North America. Comparatively, flooding is a risk that is present across North America geographies. We also inventoried our entire portfolio for property resilience—the presence of features and practices such as risk awareness, resilience management, emergency management, business continuity and building attributes that help mitigate climate risks. Risks such as flooding can cause foreseeable asset damage and downtime. Additionally, extreme high temperatures or increased presence of storms increase the risk of disrupted electricity supply resulting in the need to operationalize business continuity plans and ensure back-up fuel sources (i.e. generators). Therefore, we work to identify mitigation opportunities with the aim of reducing the damages from natural hazards. We track property resilience score, which combines third-party physical risk data with property resilience survey results. We also track the number of properties located in 100-year flood zones and report in alignment with the Sustainability Accounting Standards Board (SASB). Also, we launched new proprietary building standards in our real estate portfolio focusing on Climate Change Resilience and GHG Management to help our properties mitigate climate change. To develop the Climate Change Resilience Standard, the real estate sustainability team used forward-looking, third-party climate risk data to evaluate our global real estate portfolio’s exposure to climate and extreme weather risks. These risks include floods, sea level rise, extreme windstorms, wildfire, heat stress, water stress and earthquakes.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
0

Potential financial impact figure – maximum (currency)
50000000

Explanation of financial impact figure
Manulife Investment Management Real Estate has not yet assessed the full scale of this risk in financial terms. This figure is an estimate of loss expectancies that could occur at a select number of assets exposed to physical climate risks.

Cost of response to risk
60000

Description of response and explanation of cost calculation
Select properties have regular site visits by external parties completed to assess a number of risks present at the asset, the potential financial impacts associated with them, and recommendations to address them. These recommendations vary by asset and the risk present at the property (e.g., flood barriers, sump pumps, sprinkler bracing, equipment upgrades). For example, one of our real estate assets in Chicago was identified as having high flood risk from the Chicago River. We identified this risk and recommended implementing physical protection for the facility room via permanent curbing measures. To address this risk, real estate asset management included the necessary budget in 2022 to implement the resilience recommendations. We estimate that $60,000 was the cost of the climate resilience measures undertaken in 2022. As an example, one of our real estate assets installed a new $15,000 USD flood barrier system and by undertaking this resilience measure, the property's loss expectancy dropped from ~$3.6M USD down to ~$50K USD. Select properties have regular site visits by external parties completed to assess a number of risks present at the asset, the potential financial impacts associated with them, and recommendations to address them. The process to complete this loss expectancy calculation is proprietary to our external partners. These recommendations vary by asset and the risk present at the property (e.g., flood barriers, sump pumps, sprinkler bracing, equipment upgrades).
In addition to the recommendations provided by our insurance provider, Manulife Investment Management Real Estate has established processes to ensure most properties have a business continuity plan to respond to supply disruptions. We prepare properties for storms through our emergency management planning and seek to minimize downtime by using on-site backup power generators.

Comment

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Investing (Asset manager) portfolio

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
Policy and legal risk

Company-specific description
Emerging climate-related regulations, including carbon pricing, regional efficiency, or emissions standards, and increasing disclosure requirements could lead to increasing operating and compliance costs. Carbon taxes and cap and trade programs came into effect in Alberta and Ontario in 2017, two provinces where Manulife Investment Management Real Estate has operations, as well as in the state of California. A national price for carbon emissions will be rolled out in various jurisdictions where Manulife Investment Management Real Estate operates. Carbon pricing schemes increase operating costs and is proportionately impacts costs for less efficient properties. Manulife also regards this as a legal, operational and strategic risk. This is also a risk for the short-term, medium-term and long-term.
For example: Manulife's largest consuming property in North America resides in Toronto, ON, with an annual energy consumption and carbon emissions of 27M ekWh and 2,000 Tonnes respectively. The carbon tax incurred on energy consumption has a material impact on operational cost for this property and all others within Manulife's portfolio. At a current cost of carbon at $50/Tonne in Canada, tenants have seen a substantial increase in operation costs that are likely to rise. This impact has been a driving force for seriously considering lower carbon building equipment to reduce the properties' reliance on fossil fuels. There are ongoing investigations being conducted by third parties to produce Decarbonization Planning studies at this property and 25+ others within our North American portfolio.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
2750000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
With a Canadian Carbon Tax of $50CAD per tonne, and operational carbon emissions in Canada reaching ~55,000 Tonnes. Total 2022 impact estimation: 55,000Tonnes x $50/Tonne = $2,750,000 CAD.

Cost of response to risk
2455

Description of response and explanation of cost calculation
Manulife Investment Management Real Estate is constantly monitoring emerging regulations and incorporating assessment of building performance and efficiency in our due diligence to stay ahead of carbon pricing and minimum efficiency requirements. Estimated budget increases from carbon pricing is included in property budgets, which rolls up to business planning. For example, in 2016, Real Estate's utility management consultants Solution 105 provided estimated cost increases to properties in Alberta for their 2017 budgeting process. To address the risk of increased operating costs due to regulation and carbon pricing, and as part of our larger strategy, in 2021, we formed the Carbon Management Working Group (working group) to develop a strategy to meet our GHG net zero reduction target of 80% by 2050 (target is an intensity-based reduction of Scope 1 and 2 emissions, compared to a 2021 baseline, for the properties that are within our operational control). The working group, which has representation from our real estate, asset management and sustainability teams, is responsible for overseeing property-specific carbon reduction plans and the rollout of portfolio GHG management plan. This working group is also responsible for providing GHG tools, resources, and support to property and asset management teams to inform strategies to reduce emissions. The working group's immediate goals focus on education and development of property-level GHG management tools. Going forward, the working group will oversee the GHG reduction strategy, support property teams to develop long-term GHG management plans, and track progress against our target. The completion and aggregation of these GHG management plans has provided insight on the estimated cost of response toward a carbon taxation risk by calculating the average investment within our portfolio to reduce a tonne of GHG emissions (and avoid the tax for those emissions). Of the 200+ projects thus far identified for carbon reduction there's a total cost of CAD $9,000,000 and reduction of 3,802 tonnes, demonstrating an average reduction cost of CAD $9M/3802T = CAD $2,455/ Tonne GHG.

Comment

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Investing (Asset manager) portfolio

Risk type & Primary climate-related risk driver

Market	Loss of clients due to a fund's poor environmental performance outcomes (e.g. if a fund has suffered climate-related write-downs)

Primary potential financial impact
Increased direct costs

• Increased direct costs • Increased indirect (operating) costs • Decreased access to capital

Climate risk type mapped to traditional financial services industry risk classification
Market risk

Company-specific description
A shift in capital away from high-emitting products and services could potentially affect tenant demand, asset value, and fundraising. This is also an operational and strategic risk. A growing number of investors, particularly institutional investors, consider ESG factors when selecting an investment partner or sponsor. A recent study by PWC (https://www.pwc.com/gx/en/news-room/press-releases/2022/awm-revolution-2022-report.html) found that 8 out of 10 US investors plan to increase their allocations to ESG products over the next two years, and ESG-related assets under management are expected to continue to surge reaching US$34 trillion or 21.5% of all assets by 2026.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Unknown

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The impact has not yet been quantified financially.

Cost of response to risk
0

Description of response and explanation of cost calculation
Manulife Investment Management Real Estate is working towards improving portfolio efficiency that could create new avenues for financing and increase investor and tenant demand. We continue to certify and build assets to green building standards, implement energy and emission reduction programs, and collaborate with tenants and clients on shared climate goals. The cost of responding to this risk is absorbed in our regular business activities.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Investing (Asset manager) portfolio

Opportunity type
Products and services

Primary climate-related opportunity driver
Other, please specify (Increased demand for funds that invest in companies that have positive environmental credentials [Financial services only])

Primary potential financial impact
Other, please specify (Increased demand for separately managed funds that invest in companies that have positive environmental credentials [Financial services only])

Company-specific description
As an example, a new institutional client was interested in our Canadian Core Equity strategy but did not want to invest in any fossil fuel companies. We were able to customize a version of the strategy that screened out upstream and midstream oil and gas companies but maintained the financial performance the client was seeking.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
15000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
It was a $15 million mandate invested in the fossil fuel free version of the equities strategy.

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
We have now seeded a product to meet specific client demand for fossil fuel free portfolios and demonstrated the ability to provide this type of product. Where clients raise this type of need moving forward we may raise this option with them to meet that need. No new capital investment needed, just time of internal colleagues from portfolio management, sustainable investment, compliance, relationship management and others.

Comment

Identifier
Opp2

Where in the value chain does the opportunity occur?
Investing (Asset manager) portfolio

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Commercial office tenants are increasingly looking to occupy properties that have superior environmental performance and support tenants' corporate sustainability objectives. Improving portfolio efficiency could create new avenues for financing and increase investor and tenant demand. We continue to certify and build assets to green building standards such as LEED, Energy Star, Comprehensive Assessment System for Built Environment Efficiency, and BOMA BEST, implement energy and emission reduction programs, and collaborate with tenants and clients on shared climate goals. Real Estate believes that its reputation as an owner and manager of green commercial real estate in North America has a positive impact on Manulife Investment Management's ability to attract and retain high-quality tenants and positively

influence own employees who work in those spaces.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Research shows that properties with sustainability ratings or certifications (e.g. Energy Star, LEED, BOMA BEST) command higher rental rates per square foot than otherwise identical properties. Source for the research: A study commissioned by the CBRE found that, in 2022, estimated 31% higher average percentage of rent rate for ELEED-certified building compared with non-LEED. The Journal of Portfolio Management published an article showing that rental prices were 3.7% higher with 5.6% higher tenant renewal rates and identifying numerous other benefits, including lower rent concessions, higher occupancy and lower operating costs. Source for the article: (PDF) Green Certification and Building Performance: Implications for Tangibles and Intangibles (researchgate.net)

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
Energy efficiency investment and green building certification are managed at the asset-level with sign-off at the corporate-level. Manulife Investment Management Real Estate encourages property managers to take advantage of local/regional energy efficiency incentives and green building schemes, such as LEED and BOMA Best (Canada). As of the end of the year 2022, Manulife had 55.8 million square feet certified to LEED, BOMA BEST or Energy Star, GBCA Greenstar, BCA Green Mark, NABERS, Casbee, BOMA 306, Fitwel. Sustainability best-practice[s] is a growing requirement of many real estate tenants. By increasing the number of building certifications we achieve across our global portfolio, we are ensuring we meet those sustainability demands by demonstrating sound property management and supporting strong tenant relationships. Building certifications have also been demonstrated to lower building energy use. Although building certifications were not the sole factor, in 2022, our total energy consumption was 669,383 eMWh. Comparing our like-for-like portfolio, our energy decreased 2.5%, equivalent to the energy required to power 600 Canadian homes.
Real Estate integrates best sustainability practices in developments as well. Costs associated with building certifications are incorporated into a building's operating budget; or incorporated into the development proforma and new development budget. The cost of LEED certification varies depending on the type of certification being pursued. For new construction, LEED Gold certification can add up to 4 percent to the cost of construction and more than $100,000 in additional design/consulting fees. The cost of LEED certification for existing buildings varies depending on performance, and ranges from $20,000 to $100,000 depending on required building upgrades, external consulting fees and size of the building.

Comment

Identifier
Opp3

Where in the value chain does the opportunity occur?
Investing (Asset manager) portfolio

Opportunity type
Products and services

Primary climate-related opportunity driver
Other, please specify ((Energy source: Participation in carbon market))

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Forestry (and potentially agriculture) businesses have an opportunity to monetize carbon sequestration. Different forest investments have different opportunity profiles. Of particular example is our recent acquisition of 89,800 acres of timberland in the US State of Maine with a diverse mix of naturally regenerated spruce fir and northern hardwood forest types. The core investment thesis is centered on these timberlands primarily being used to store carbon and the value proposition that comes with the optionality of selling that carbon or 'insetting' it for Manulife Corporate purposes.

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact
Unknown

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Investment product being launched. Financial impact contingent on market demand.

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
The potential cost involved with the launch of investment product.

Comment

Identifier
Opp4

Where in the value chain does the opportunity occur?
Investing (Asset manager) portfolio

Opportunity type
Markets

Primary climate-related opportunity driver
Enhanced financial performance of investee companies as a result of being able to access new markets and develop new products to meet green consumer demand

Primary potential financial impact
Returns on investment in low-emission technology

Company-specific description
Infrastructure investments with portfolio companies dedicated to advancing renewable energy, solar power, and utility battery storage, which contribute to advancing the energy transition and the promotion of cleaner energy sources.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
This financial figure has not yet been quantified.

Cost to realize opportunity
0

Strategy to realize opportunity and explanation of cost calculation
Our infrastructure portfolio includes several portfolio companies dedicated to advancing renewable energy, solar power, and utility battery storage, which contribute to advancing the energy transition and the promotion of cleaner energy sources. As those companies continue to expand their footprint in response to increased demand for clean energy, they are benefitting from increased revenues.

Comment

Identifier
Opp5

Where in the value chain does the opportunity occur?
Investing (Asset manager) portfolio

Opportunity type
Products and services

Primary climate-related opportunity driver
Other, please specify (Increased demand for funds that invest in companies that have positive environmental credentials.)

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Institutional clients are looking for sustainability and climate related products. Assets under management in global sustainable funds hit nearly $2.5trn at the end of December 2022 globally, an 11.6% increase on the previous quarter. In comparison, the overall global fund market grew by 6% in the three months through December 2022. In some cases, clients are looking to invest in low carbon products, aligned with Paris Agreement targets to hold temperature at 1.5°C above pre-industrial average. In other cases, clients are looking to proactively be a part of the solution to point capital at high emissions sectors to help accelerate their decarbonization and shift of lower or net zero carbon emissions.
In response, Manulife Investment Management launched its Global Climate Action strategies (equities version in 2021 and fixed-income version in 2022).

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation
We are generally developing a product suite that serves client-demand on the climate risk and sustainability channel. We plan to roll out new thematic products in 2023 to address demand on environmental focused investment solutions.

Comment

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

Climate transition plan
No, but our strategy has been influenced by climate-related risks and opportunities, and we are developing a climate transition plan within two years

Publicly available climate transition plan
<Not Applicable>

Mechanism by which feedback is collected from shareholders on your climate transition plan
<Not Applicable>

Description of feedback mechanism
<Not Applicable>

Frequency of feedback collection
<Not Applicable>

Attach any relevant documents which detail your climate transition plan (optional)
<Not Applicable>

Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future
Our Climate Action Plan focuses on three areas: our operations, our general fund investments, and the products and services we offer to clients. It includes our commitment to achieve net zero financed emissions within our General Account portfolio by 2050 and our commitment to reduce our absolute scope 1 & 2 emissions by 40% by 2035, relative to a 2019 baseline (Our 2019 baseline year reflects a typical year for our operations. The COVID-19 pandemic resulted in a remote work scenario across our operations, as such our 2020 emissions are not representative of a typical year). We are taking a combined sector and asset class approach and have established ambitious near term decarbonization targets for our financing activities in the General Account. Interim targets for real estate, power generation project finance, and listed equities and debt have been developed in alignment with the methodology for financial institutions outlined by the SBTi, in combination with Partnership for Carbon Accounting Financials (PCAF) methodologies for emissions accounting. The methods and assumptions underlying our targets follow the guidance established by the SBTi, which draw on the best available science-based pathways for limiting warming to well below 2 degrees Celsius, as established by the Paris Agreement; and these will guide the development of our climate transition plan in the next two years.

Explain why climate-related risks and opportunities have not influenced your strategy
<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios: NGFS scenarios framework	Portfolio	<Not Applicable>	For our General Account our scenario analysis has been conducted specific to capital maintenance requirements, supported by our Climate Action Plan commitments. We continue to engage with our regulators on climate-related scenario analysis in our General Account. In 2020 and 2021 we participated in a Bank of Canada and OSFI pilot project using climate-change scenarios to better understand the risks to the financial system related to a transition to a low carbon economy. We continue to engage with OSFI to understand activities underway to identify and assess climate risk in Canada’s financial sector. We also included both pandemic and climate stress scenarios in our annual Financial Condition Testing (FCT) overseen by the Board and reported to OSFI. As one of Canada’s largest financial services companies, we view it as our responsibility to be involved in such projects given our position in the Canadian market and climate-related commitments.
Physical climate scenarios: RCP 2.6	Portfolio	<Not Applicable>	The Manulife Investment Management team deploys scenario analyses of how 1.5, 2, 3, and 4 degree Celsius temperature increases may impact certain asset classes, and complements these analyses with qualitative assessments and the inclusion of carbon pricing into analytical models. For example: Manulife Investment Management Timber and Agriculture: Conducting scenario analyses on biological assets is challenging due to the significant uncertainties around the ability of these assets to adapt to changing climate conditions. In 2020 we conducted pilot scenario analyses of our New Zealand timberland and our California farmland. In 2021, we built upon those pilots and extended the analyses across our entire platform, engaging our forest and farm operations professionals from the United States, Chile, Brazil, Australia, and New Zealand in workshops to better gauge our ability to prepare for the realities of climate change. In 2022, we reviewed the risks identified from the 2020-2021 pilot to develop a systematic understanding of them, which confirmed we needed a climate risk tool to conduct systematic quantitative analysis. During 2022, we have invested in a third-party analytical platform that will enable us to systematically evaluate climate risks under various scenarios (RCP 2.6, 4.5, and 8.5) across all our major investment regions. Public Markets: As a component of risk management, we conduct climate scenario analysis. Scenario analysis is conducted across uncertain future pathways and seek to understand the potential impact of different climate scenarios on our investment strategies and owned and operated assets. We provide climate risk data aligned to 1.5˚C, 2˚C, 3˚C, and 4˚C scenarios within our daily risk reports, which encompass those investee companies with the highest climate risk exposure at an individual portfolio level.
Physical climate scenarios: RCP 8.5	Portfolio	<Not Applicable>	The Manulife Investment Management team deploys scenario analyses of how 1.5, 2, 3, and 4 degree Celsius temperature increases may impact certain asset classes, and complements these analyses with qualitative assessments and the inclusion of carbon pricing into analytical models. For examples, see above.
Physical climate scenarios: RCP 4.5	Portfolio	<Not Applicable>	The Manulife Investment Management team deploys scenario analyses of how 1.5, 2, 3, and 4 degree Celsius temperature increases may impact certain asset classes, and complements these analyses with qualitative assessments and the inclusion of carbon pricing into analytical models. For examples, see above.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

How would temperature increase of 1.5, 2, 3, and 4 degrees Celsius may impact certain asset classes?

What are the risks to the financial system that stem from the transition to a low-carbon economy?

What is the physical asset risk?

What is the exposure to cost increases?

Do climate change projections suggest significant increase in wildfire, extreme heat, or drought risk that could affect yields and/or operational efficiency (e.g., inability to carry out management activity due to risk)?

Do climate change projections suggest significant increase in vulnerability to riverine or coastal flooding?

Is profitability of this property highly dependent on the sale of biomass for wood pellets or biomass energy?

Results of the climate-related scenario analysis with respect to the focal questions

We continue to develop our risk management practices for assessing the relative significance, size and scope, and materiality of the climate-related risks that we identify. For example, our General Account investment team, after conducting climate scenario analysis, evaluates the total fund's carbon emission profile, and is developing decarbonization plans for certain high-carbon emitting sectors in which we invest, and developing processes to consider climate-related risks in our due diligence and investee engagement.

In 2020 and 2021, we also participated in a Bank of Canada and Office of the Superintendent of Financial Institutions (OSFI) pilot project using climate-change scenarios to better understand the risks to the financial system related to a transition to a low-carbon economy. Manulife is among other Canadian banks and insurers participating in these activities.

Manulife Investment Management (MIM) deploys scenario analyses of how 1.5, 2, 3 and 4 degree Celsius temperature increases may impact certain asset classes (e.g., real estate, timberland, agriculture), complemented by qualitative assessments and the inclusion of carbon pricing into analytical models. Following the release of Manulife Investment Management Timberland and Agriculture's inaugural climate disclosure at year-end 2020, in 2021 we expanded our climate risk work to include scenario analysis across our entire portfolio, building on the initial scenario analyses in the 2020 report that were limited to California agriculture and New Zealand timberland. In support of long-term integration of climate risk across our properties, we conducted a series of seven workshops with our operations professionals to better understand physical risks posed by climate change to the assets we manage: North America timberland and agriculture, Australia Victoria and Queensland timberland, Australia agriculture, New Zealand timberland and South America timberland and agriculture.

During 2022, MIM Timberland and Agriculture invested in a third-party analytical platform that will enable us to systematically evaluate climate risks under various scenarios across all our major investment regions. We also reviewed the risks identified from the 2020–2021 pilot to develop a systematic understanding of them, which confirmed we needed a climate risk tool to conduct systematic quantitative analysis.

As an example, our experienced foresters can take actions to foster an environment that is conducive to growing healthy trees that are more resilient to the impacts of climate change. This process is called silviculture, and our silviculture approach is adaptive to both current and future climate-related risks and opportunities.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Manulife Investment Management (MIM) acknowledges the risks and opportunities associated with climate change and the transition to a low-carbon economy, and we are actively incorporating climate change considerations into our decision making, including how we develop and offer financial products and services. As an investment manager, we are in a position to build dedicated investment strategies that address the issues of climate change and offer nature-based solutions to mitigate climate change through forests and farms. We value and actively support the robust integration of sustainability principles in our investment approaches, including our active strategies. This holds true across asset classes, geographies and our business identities — whether we are acting as asset operators, equity holders or debt holders. Our goal is to encourage action and mitigate systemic environmental risks in a strategic and impactful way, including working with companies we invest in and advocating for change across an array of forums. At the end of 2022, over 90% of MIM's assets under management in equity and fixed-income strategies were integrating ESG factors (including climate change) in accordance with our proprietary assessment framework. Integration is based on MIM's Proprietary Integration Progression Levels, which measures our investment teams progress in ESG integration. We look to incorporate material ESG considerations throughout the stages of our investment and asset ownership lifecycles, considering the characteristics of the asset class and investment process in question, as well as industry and geography, among other factors. Each investment team operates in different markets and with different nuances to its approach to investing, and each team integrates ESG factors into its investment process in a manner that best aligns with its investment approach. E.g., and as part of our integrated approach, our investment teams identified 2 issuers within their portfolios that were most at risk to the transition to a low carbon world and began engaging them separately using an internal set of engagement questions as a guide. These conversations will help the teams assess management of the transition risk at some of their biggest holdings and may influence adoption of best practices in climate risk disclosure and management at the relevant issuers.
Supply chain and/or value chain	Yes	We actively look for opportunities to work more effectively across our value chain to reduce Manulife's broader emissions footprint, through aspects such as sustainable procurement, paper consumption and green leases — however, we continue to prioritize addressing our most significant value chain footprint through our owned investments. Our Corporate Real Estate business evaluates potential leasing agreements through our green lease checklist which is factored into this decision process. Currently climate risk ratings are not specifically called out as a factor for property selection. Our supply chain strategy accounts for climate related risks. We continue to look for opportunities to work more effectively across our value chain to reduce Manulife's broader emissions footprint through aspects such as sustainable procurement, digitization of our operations and green leases. Our General Account invests capital to achieve returns to support the operations of our business and to ensure we meet the promises we make by efficiently managing the assets underlying the liabilities of our insurance services. We expect to employ a variety of methods to manage the transition of our portfolio; these could include: 1. Proactive investment in sectors driving decarbonization. We seek to focus our time and attention on scalable opportunities with attractive risk-adjusted returns that ultimately provide an appropriate match to our liabilities. 2. Portfolio re-balancing. We recognize the underlying risks of issuer inaction on decarbonization. We have set short-term emissions reduction targets to help manage these risks and inform how we consider providing capital to sectors, companies, or projects that support decarbonization efforts and potentially limiting capital to those with unfavourable emissions profiles. 3. Issuer, peer, and sector engagement. As a primarily fixed income-oriented investor, our engagement with management teams and opportunities may differ from that which is typical for public equity holders who have direct ownership stakes in a company. 4. Transition plans. We intend to focus on issuer contributions to real world decarbonization, as opposed to a purely exclusionary or divestment-based strategy. We intend to avoid "short-termism" and incentivization of capital flows and financing structures that may create injustices globally.
Investment in R&D	Yes	Given the nature of our business as a financial services company, we do not typically invest in research and development, though, many of our business areas conduct research into relevant emerging trends and their impact on our business, including the impact of climate change. For example, Manulife analyzes the impacts of climate change on products and underwriting for health and life insurance as it relates to impact of physical climate change to morbidity and mortality. These impacts range in severity and complexity, from acute illness to chronic stress. Our approach includes research to understand the human impacts of climate change, awareness building of human impacts across the business, and finally, engagement with external experts on relevant initiatives. An interdisciplinary team of Manulife members is engaged on this work and includes underwriting, risk, actuarial and advanced analytics professionals and representation from business segments across Manulife. We believe that the work undertaken by our business benefits Manulife's ability to manage climate-related risks and opportunities and respond to client needs. But beyond our business, it contributes to a larger body of societal knowledge on the impact of climate change on human health. In 2022, through Manulife's partnership with Munich Re, we implemented the use of a climate risk tool that provides several business areas with detailed, geography-specific climate risks, both current and projected, based on different Representative Concentration Pathway (RCP) scenarios. We also participated in the development of the Geneva Association paper titled "Anchoring Climate Change Risk Assessment in Core Business Decisions in Insurance".
Operations	Yes	Our effort to combat climate change is embedded across our business strategy. We are taking steps to reduce our emissions though our operations, which involve real estate, timberland and agriculture investment property operations and day-to-day business activities across Manulife's business segments. Guided by our Environmental Risk Policy, along with business-specific policies, standards and guidelines, climate-related risks and opportunities are identified and categorized using Manulife's existing risk taxonomy, specifically across our principal risk types. We do not view climate-related risk as a standalone risk category but as a transversal risk which can manifest across all our existing principal risk types, including strategic, market, credit, product, or operational risk, as well as legal and reputational risk. Climate risk, therefore, is not a new risk, but viewed as a modifier or an accelerator of existing risk types. Failure to adequately prepare for the potential impacts of climate change can have material adverse impacts on our balance sheet or our ability to operate. Climate-related risks are also categorized in alignment with the Financial Stability Board's Taskforce on Climate-Related Financial Disclosures (TCFD) framework to ensure that all significant risks are considered across our lines of business and operations. Consistent with the TCFD, Manulife defines climate-related risks as the potential negative impacts from climate change, which may be experienced directly (e.g., through financial loss) or indirectly (e.g., through reputational harm), as a result of the physical impacts of climate change or the transition to a low carbon economy. We recognize that climate-related risks are inherent across our business, including in our operations, and investments. Our Environmental Risk Policy aims to set out an enterprise-wide approach to managing environmental risks, including climate-related risks and nature-related risks, that could result in financial loss or reputational damage to the company.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Assets Provisions or general reserves	Manulife is a long-term oriented underwriter and investor. Therefore, long-term climate-related risks and opportunities, including changes in the physical environment and policy and technological changes associated with the transition to a low-carbon economy, are strategically relevant. The monitoring and evaluation of climate change related risks and opportunities is an ongoing effort which is embedded in the business strategy for each operating segment including the General Account investment team, finance and capital planning functions. We are an operator of real estate, timber and agricultural businesses, where carbon pricing is considered in financial planning (see examples below). Most of our business though is insurance underwriting and asset management, where carbon pricing decisions are factored into risk management and investment processes addressed elsewhere in this CDP questionnaire. We believe that decarbonization of high-emitting sectors takes capital, oversight, and investments in solutions. To this end we have investment teams within our General Account specifically focused on evaluating and funding entities that support established and emerging energy transition solutions like hydrogen, carbon capture, and others. This work complements our long experience as an investor in renewables, energy efficiency, and clean transportation. For example, our General Account was an anchor investor in Vietnam's first onshore green bond issued by a leading local financial institution. The certified green bond followed the International Capital Markets Association principles and quarantined its proceeds for renewable energy financing purposes. This investment introduced the green bond concept into Vietnam's financial sector, providing an actionable framework for how ESG integration and green investment can be effectively utilized in the local market. The local financial institution's financing of the solar sector was used to help to reduce the country's carbon emission intensity, as well as the national grid's dependence on fossil fuels. The power generation sector is a critical and central enabler of the decarbonization of all other sectors. The sector, and project financing activities specifically, are an area of focus for science-based pathways to net zero in our General Account. Electricity is generated by a diverse mix of energy sources, and geography and technology play important roles in defining the conditions for financial viability of projects utilizing cleaner energy sources – projects can range from conversions of coal facilities to natural gas to development of new wind farms. Manulife has already taken advantage of the opportunities presented by clean energy, as reflected in the already low emissions intensity of our project finance portfolio. Nonetheless, we continue to view the sector as a significant target for investment, with supportive public policies such as the Inflation Reduction Act in North America enhancing the financial viability of clean energy positions. We maintain our focus on projects that displace lower efficiency energy sources like coal that best match the long-term liabilities of our business model. In our Manulife Investment Management (MIM) business segment, our investment teams consider climate-related risks and opportunities in their processes where relevant. We focus on attractive risk-adjusted returns and portfolio resiliency over the long term. We factor in differences across asset classes, industries, geographies, and operating models, and as climate science evolves, so does our approach. There's no perfect single data set on the topic of climate change, so we apply an active approach to third-party data and use tools that we complement with our industry and first-hand knowledge through engagement to understand companies' vulnerabilities and strengths. We develop differentiated analytical techniques, including scenario analysis, to inform our security selection and valuation; scenario analysis can also inform portfolio positioning. Our investment teams that currently use scenario analysis are most often using 1.5˚C, 2˚C, 3˚C, and 4˚C scenarios, although these are complemented by many teams' inclusion of carbon pricing and assessment in their analysis. However, we also go beyond buy and sell decisions to include engagement focused on climate action and active stewardship in our investment process. In MIM Real Estate group, the financial impacts of climate change are established via scenario analysis of physical and transition risks, including regulatory and customer demand-driven changes. Financial plans, property acquisition and divestitures, include considerations of climate-related costs and revenue, and are dealt with accordingly through the short/mid/and long-term financial planning cycles. Our real estate group has integrated climate-related risks and opportunity considerations throughout the investment lifecycle. In our investment practices, we list sustainability issues and risks that must be considered in due diligence checklists. A "Sustainability in Investment and Due Diligence Summary Form" is completed for all investments, is signed off on by the investment manager and is provided as part of the investment package. As part of our standing portfolio, we track climate resilience and GHG management through annual property-level reporting of our Sustainable Building Standards. The results of the annual reporting are shared with asset managers and is aligned with the annual property budget cycle to allow climate-related risks and opportunity consideration in annual asset plans where deemed appropriate. Our real estate developments are reviewed for climate risk and physical resilience measures are built into developments, where appropriate, based on specific risks present at the asset. In 2022, we included climate resilience and transition considerations to our minimum design requirements for new development projects, such as physical risk, energy, embodied carbon, and biodiversity. Real Estate team has also developed a carbon planning model for prioritizing asset/region specific GHG reduction, which pulls data from 3rd party reporting, industry knowledge, and existing regulation to produce estimates on potential for GHG reduction, capital costing, incremental life cycle cost, and GHG abatement cost efficiency (i.e. $/tCO2e). We have updated our Investment ESG due diligence process to take climate change into account. Our Timberland and Agriculture Group factors cost for achieving third-party sustainability certifications into its budgets, and systematically considers climate-related risks and opportunities in acquisitions and divestments. Risks such as access to water or potential for wildfire are considered and may impact valuations.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	Yes, we identify alignment with a sustainable finance taxonomy	At the company level only

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization’s climate transition.

Financial Metric
Other, please specify (Carrying value)

Type of alignment being reported for this financial metric
Alignment with a sustainable finance taxonomy

Taxonomy under which information is being reported
Other, please specify (Manulife’s Sustainable Bond Framework, International Capital Markets Association’s Green Bond Principles (2017))

Objective under which alignment is being reported
Total across all objectives

Amount of selected financial metric that is aligned in the reporting year (unit currency as selected in C0.4)
47500000000

Percentage share of selected financial metric aligned in the reporting year (%)

Percentage share of selected financial metric planned to align in 2025 (%)

Percentage share of selected financial metric planned to align in 2030 (%)

Describe the methodology used to identify spending/revenue that is aligned
Sustainable investments include green investments (General Account) and social investments (General Account private investments), as determined by Manulife’s Sustainable Bond Framework and the International Capital Market Association’s Green Bond Principles (2017). Data excludes public securities, with the exception of green bonds. Data prior to FY21 excludes third-party investments. Sustainalytics provides a second-party opinion on Manulife's Sustainable Bond Framework, as well as a limited assurance of Manulife's annual Green Bond reports.

C3.5c

(C3.5c) Provide any additional contextual and/or verification/assurance information relevant to your organization’s taxonomy alignment.

Sustainable investments include green investments (General Account) and social investments (General Account private investments), as determined by Manulife’s Sustainable Bond Framework and the International Capital Market Association’s Green Bond Principles (2017). Data excludes public securities, with the exception of green bonds. Data prior to FY21 excludes third-party investments. Sustainalytics provides a second-party opinion on Manulife's Sustainable Bond Framework, as well as a limited assurance of Manulife's annual Green Bond reports.

C-FS3.6

(C-FS3.6) Does the policy framework for your portfolio activities include climate-related requirements for clients/investees, and/or exclusion policies?

	Policy framework for portfolio activities that include climate-related requirements for clients/investees, and/or exclusion policies	Explain why the policy framework for your portfolio activities do not include climate-related requirements for clients/investees, and/or exclusion policies
Row 1	Yes, our framework includes both policies with climate-related client/investee requirements and climate-related exclusion policies	<Not Applicable>

C-FS3.6a

(C-FS3.6a) Provide details of the policies which include climate-related requirements that clients/investees need to meet.

Portfolio
Investing (Asset owner)

Type of policy
Investment policy/strategy
Other, please specify (Comprehensive ESG guidelines covering all GA-related investment activities.)

Portfolio coverage of policy
100

Policy availability
Publicly available

Attach documents relevant to your policy
MFC_ESGR_2022_EN.pdf

Criteria required of clients/investees
Other, please specify (Identify material ESG issues.)

Value chain stages of client/investee covered by criteria
Direct operations only

Timeframe for compliance with policy criteria
No timeframe

Industry sectors covered by the policy
Energy
Materials

Capital Goods
Commercial & Professional Services
Transportation
Automobiles & Components
Consumer Durables & Apparel
Consumer Services
Retailing
Food & Staples Retailing
Food, Beverage & Tobacco
Household & Personal Products
Health Care Equipment & Services
Pharmaceuticals, Biotechnology & Life Sciences
Software & Services
Technology Hardware & Equipment
Semiconductors & Semiconductor Equipment
Telecommunication Services
Media & Entertainment
Utilities
Real Estate

Exceptions to policy based on
<Not Applicable>

Explain how criteria required, criteria coverage and/or exceptions have been determined
The entirety of Manulife's General Account portfolio is governed by a set of ESG Guidelines that are followed when assessing ESG-related risks and opportunities, including climate change. The ESG Guidelines are not exclusionary by nature but require elevated approval thresholds for certain sensitive sectors. Monitoring material ESG issues at, and encouraging ESG awareness by, the borrower level as appropriate, as part of general ongoing investment surveillance (for example, through publicly available reporting and/or interactions with borrowers). In some cases, this may present a challenge as many of our investments are in companies/assets that are privately held, as such there may be limited to no publicly available information. A summary extract of our ESG Guidelines is publicly available in our 2022 ESG Report.

Portfolio
Investing (Asset manager)

Type of policy
Risk policy
Sustainable/Responsible Investment Policy
Other, please specify (Nature Statement and Climate Statement)

Portfolio coverage of policy
100

Policy availability
Publicly available

Attach documents relevant to your policy
MFC_ClimateChangeStatement_EN.pdf
MFC_environmental_policy_EN.pdf
sustainable-investing-and-sustainable-risk-statement.pdf
nature-statement-mim (4).pdf

Criteria required of clients/investees
Other, please specify (Identify material ESG issues)

Value chain stages of client/investee covered by criteria
Direct operations only

Timeframe for compliance with policy criteria
No timeframe

Industry sectors covered by the policy
Energy
Materials
Capital Goods
Commercial & Professional Services
Transportation
Automobiles & Components
Consumer Durables & Apparel
Consumer Services
Retailing
Food & Staples Retailing
Food, Beverage & Tobacco
Household & Personal Products
Health Care Equipment & Services
Pharmaceuticals, Biotechnology & Life Sciences
Software & Services
Technology Hardware & Equipment
Semiconductors & Semiconductor Equipment
Telecommunication Services
Media & Entertainment
Utilities
Real Estate

Exceptions to policy based on
<Not Applicable>

Explain how criteria required, criteria coverage and/or exceptions have been determined
For Manulife Investment Management (MIM) Private Markets, the Sustainable Investing and Sustainability Risk Statement provides an overview of the approach to sustainable investing within the Institutional Asset Management business of MIM. It outlines our commitment to sustainable investing and describes our core beliefs about sustainability. This Statement also describes how sustainability opportunities, risks and factors are integrated into our investment decision-making processes.
Climate Change Statement outlines our approach to the investment and asset ownership issues we face now and into the future. We may take a variety of actions toward managing climate-related 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 sustainability management best 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 of any investment. At MIM Real Estate, we incorporate ESG considerations into all our investment management and operational practices across the real estate value chain, from construction and acquisition of an asset through all aspects of asset management.
Nature Statement: For public corporate issuers, MIM expect management teams to consider the impacts of operations and products on the natural world with an eye toward achieving operations that use natural capital in a sustainable manner. Businesses should consider the importance of nature to their operations by evaluating their potential to reverse the negative impacts of their operations on nature and, where possible, positively contributing to restoring it.
Climate Statement: By engaging with companies on climate change transition, we encourage them to align their business strategy with the long-term interests of investors to support their preparation for the energy and economic transition ahead. Specifically, we support companies to align their business strategy with climate science, proactively manage and disclose GHG emissions, and make disclosures in line with the TCFD recommendations or similar disclosure frameworks.

C-FS3.6b

(C-FS3.6b) Provide details of your exclusion policies related to industries and/or activities exposed or contributing to climate-related risks.

Portfolio
Investing (Asset owner)

Type of exclusion policy
Thermal coal
Coal mining
Power from coal
Other, please specify (ESG Guidelines; Thermal Coal Statement)

Year of exclusion implementation
2022

Timeframe for complete phase-out
Other, please explain (No timeframe)

Application
New business/investment for new projects
New business/investment for existing projects

Country/Area/Region the exclusion policy applies to
Europe
North America

Description
Our General Account (GA) maintains formalized ESG Investment Guidelines which require elevated approval from senior executives in order to facilitate investment in certain sectors; they provide guidance to investment professionals on the integration of ESG considerations into investment decisions and ownership practices specific to the GA. The policy is not exclusionary by nature but intends to facilitate dialogue around potential opportunities in sensitive sectors. The GA's ESG Guidelines were updated in December 2022 to primarily identify sectors that require greater scrutiny from the Credit Committee; i.e., sectors that represent sensitive areas and in which the GA has very limited or no existing exposure, including cannabis, military/non-military weapons, thermal coal and tobacco. The Manulife General Account Thermal Coal Statement which aims to reduce long-term, future exposure to thermal coal companies. The policy limits new investments in companies that have more than 20% revenue from mining thermal coal or unabated thermal coal power plants or with more than 20% share of installed capacity is thermal coal. Project finance for thermal coal mines and power plants beyond construction and expansion remains permitted, only where the funds are used to support the issuer's transition away from thermal coal. These restrictions apply to new, direct investments made by Manulife and its wholly owned life insurance companies globally. It does not apply to assets that are managed on behalf of third parties by Manulife, assets managed by external third-party asset managers, joint ventures, and assets that are indirectly or passively managed. We continue to promote and encourage the use of sustainable practices with third-party managers of Manulife GA funds and engage with them in regards to our specific sustainability preferences. For assets managed by Manulife Investment Management on the GA's behalf, coal restrictions will be negotiated and mutually agreed to, where feasible. Restrictions do not apply to companies with thermal coal operations solely outside of North America and Europe. To support real-world decarbonization, Manulife will consider exceptions to company restrictions, when: companies meeting the threshold have disclosed and are making progress against credible decarbonization, phase out, and/or abatement plans; and/or the use of proceeds of the investment is to facilitate the transition of the issuer's business away from coal.

C-FS3.7

(C-FS3.7) Does your organization include climate-related requirements in your selection process and engagement with external asset managers?

	Climate-related requirements included in selection process and engagement with external asset managers	Primary reason for not including climate-related requirements in selection process and engagement with external asset managers	Explain why climate-related requirements are not included in selection process and engagement with external asset managers and your plans for the future
Row 1	Yes	<Not Applicable>	<Not Applicable>

C-FS3.7a

(C-FS3.7a) Provide details of the climate-related requirements included in your selection process and engagement with external asset managers.

Coverage
All assets managed externally

Mechanisms used to include climate-related requirements in external asset manager selection
Preference for investment managers with an offering of funds resilient to climate change
Review investment manager’s climate performance (e.g., active ownership, proxy voting records, under-weighting in high impact activities)
Review investment manager’s climate-related policies
Use of external data on investment managers regarding climate risk management

Describe how you monitor and engage with asset managers to ensure investment activities are consistent with your climate strategy
During our selection process we conduct extensive due diligence meetings with portfolio managers, risk managers and key executives. In conjunction with these interactions, we seek to understand if there is a clearly stated position and investment belief on key issues, such as climate, and how that is factored into the investment process and company engagement. On ESG and climate-related issues we are focused on the manager’s overall governance framework, integration of ESG factors into the investment process and degree of active ownership and engagement for any new strategy. We continue to monitor the integration and stated objectives after the strategy is on our platform through regular and recurring engagement, including a formal and comprehensive annual due diligence, the outcome of which are discussed with our Global Investment Product Team and Boards/Investment Committees globally.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Absolute target
Intensity target
Portfolio target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Is this a science-based target?
Yes, we consider this a science-based target, and the target is currently being reviewed by the Science Based Targets initiative

Target ambition
Well-below 2°C aligned

Year target was set
2021

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Base year
2019

Base year Scope 1 emissions covered by target (metric tons CO2e)
102739

Base year Scope 2 emissions covered by target (metric tons CO2e)
169479

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)
<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)
272218

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1
100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2
100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)
<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes
100

Target year
2035

Targeted reduction from base year (%)
40

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]
163330.8

Scope 1 emissions in reporting year covered by target (metric tons CO2e)
121432

Scope 2 emissions in reporting year covered by target (metric tons CO2e)
118710

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)
240142

Does this target cover any land-related emissions?
Yes, it covers land-related and non-land related emissions (e.g. SBT approved before the release of FLAG target-setting guidance)

% of target achieved relative to base year [auto-calculated]
29.4580079201228

Target status in reporting year
Revised

Please explain target coverage and identify any exclusions
This is a company-wide target and covers 100% of both Scope 1 and 2 emissions. In 2023, we revised the target from 35% to 40% reduction by 2035.

The target covers emissions from non-land Manulife Investment Management Real Estate activities and Timberland and Agriculture operations such as emissions related to on-farm vehicles and fertilizer use, crop residue, fertilizer application, methane and N2O emissions from agricultural waste burning; CO2 emissions from machinery used on farm and transport of biomass etc.

Plan for achieving target, and progress made to the end of the reporting year
In 2023, Manulife Investment Management Real Estate will continue to make progress towards decarbonization by achieving higher confidence levels for all scope 1 & 2 emissions estimates, with well-documented, non-technical, and easily accessible methodological explanations for their calculation. We will also continue to develop an asset-specific decarbonization menu for the most significant emitters in both timberland and agriculture.

In 2023, Manulife Investment Management Timberland and Agriculture we will continue to make progress towards decarbonization by increasing the number of properties with individual GHG reduction plans, focusing on the highest emitters, and guiding the real estate development team to build low carbon or net zero new developments.

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Is this a science-based target?
No, but we are reporting another target that is science-based

Target ambition
<Not Applicable>

Year target was set
2017

Target coverage
Business division

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Intensity metric
Other, please specify (kgCO2e per sq. ft.)

Base year
2017

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)
0.83

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)
4.27

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)
5.1

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure
100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure
100

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure
<Not Applicable>

% of total base year emissions in all selected Scopes covered by this intensity figure
100

Target year
2022

Targeted reduction from base year (%)
10

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]
4.59

% change anticipated in absolute Scope 1+2 emissions
2

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)
0.65

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)
1.67

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)
2.32

Does this target cover any land-related emissions?
Yes, it covers land-related and non-land related emissions (e.g. SBT approved before the release of FLAG target-setting guidance)

% of target achieved relative to base year [auto-calculated]
545.098039215686

Target status in reporting year
Achieved

Please explain target coverage and identify any exclusions
We are targeting a 10% energy consumption reduction (energy efficiency improvement target) between 2017 to 2022 associated with carbon emission per square foot in our real estate Portfolio.
This is a business division target as it relates only to the real estate portfolio.
Manulife has achieved this target. It should be noted that the COVID-19 pandemic contributed to a decrease in energy consumption in 2020.

Plan for achieving target, and progress made to the end of the reporting year
<Not Applicable>

List the emissions reduction initiatives which contributed most to achieving this target
Our emissions decreased in part because of lower energy use with more people working from home, as well as energy efficiency project improvements including lighting and HVAC efficiencies. There was also an increase in total square footage in 2021 compared to the baseline causing a further decrease in the emissions intensity.

Target reference number
Int 2

Is this a science-based target?
No, but we are reporting another target that is science-based

Target ambition
<Not Applicable>

Year target was set
2020

Target coverage
Business division

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Intensity metric
Other, please specify (kgCO2e per sq. ft.)

Base year
2018

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)
0.87

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)
4.13

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)
5

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure
100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure
100

% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure
<Not Applicable>

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure
<Not Applicable>

% of total base year emissions in all selected Scopes covered by this intensity figure
100

Target year
2050

Targeted reduction from base year (%)
80

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]
1

% change anticipated in absolute Scope 1+2 emissions
2.67

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)
0.65

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)
1.67

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)
<Not Applicable>

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

2.32

Does this target cover any land-related emissions?
No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]
67

Target status in reporting year
Underway

Please explain target coverage and identify any exclusions
We are targeting an 80% reduction in greenhouse gas emission intensity for our global real estate portfolio by 2050, using 2018 as the baseline. This is a business division target as it relates only to the global Manulife Investment Management Real Estate portfolio.

Plan for achieving target, and progress made to the end of the reporting year
To actively demonstrate efforts in carbon reduction, Manulife Investment Management has started initiatives to identify ways to reduce GHG emissions across its global real estate portfolio. Over the past year, the firm conducted a deep carbon retrofit study at its buildings, in addition to updating the leasing process, with a greater focus on sustainability. This is part of a strategic approach focused on four pillars:
· Efficiency measures – conventional, cost-effective, incremental energy improvements through on-going building commissioning and efficient operations.
· Fuel switching – switching from high to low carbon intensity infrastructure through infrastructure renewal (delivering immediate emissions reduction where the electrical grid is less carbon intensive today, and additional emissions reduction as the grid improves).
· Onsite renewables and storage – installing items, such as rooftop solar panels, especially in regions with carbon-intensive electrical grids.
· Carbon offsets and Power Purchasing Agreements (PPAs) – purchasing carbon offsets and power purchasing agreements (PPAs) to address energy/carbon that remains after the above actions are completed.
To support these initiatives and better understand its current standing, Manulife Investment Management's real estate team will work to implement this overarching strategy, identifying regional and asset-level opportunities where energy and associated emissions can be reduced. All projects will also be evaluated in terms of their carbon-based returns and how they will assist with the reduction in emissions.

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

C-FS4.1d

(C-FS4.1d) Provide details of the climate-related targets for your portfolio.

Target reference number
Por1

Year target was set
2023

Portfolio
Investing (Asset owner)

Product type/Asset class/Line of business
Fixed income
Listed equity

Sectors covered by the target
All sectors

Target type
Portfolio temperature alignment

Target type: Absolute or intensity
<Not Applicable>

Scopes included in temperature alignment
Scope 1 + 2 + 3

Metric (or target numerator if intensity)
Degrees of warming

Target denominator
<Not Applicable>

Base year
2019

Figure in base year
2.9

Percentage of portfolio emissions covered by the target
31

Monetary metric for portfolio coverage (unit currency as reported in C0.4)
Invested value

Percentage of portfolio covered by the target, using a monetary metric
36

Frequency of target reviews
Other, please specify (Every five years or on an 'as needed' basis)

Interim target year
2027

Figure in interim target year
2.5

Target year
2040

Figure in target year
2

Figure in reporting year

% of target achieved relative to base year [auto-calculated]
<Calculated field>

Aggregation weighting used
Total emissions weighted temperature score (TETS)

Proportion of portfolio emissions calculated in the reporting year based on asset level data
<Not Applicable>

Proportion of the temperature score calculated in the reporting year based on company targets
100

Target status in reporting year
New

Is this a science-based target?
Yes, we consider this a science-based target, and the target is currently being reviewed by the Science-based target initiative

Target ambition
Well-below 2°C aligned

Please explain target coverage and identify any exclusions
Target is based on third-party temperature score data provided by ICE/Urgentem, utilizing SBTi/WWF/CDP target setting methodology.

Target reference number
Por2

Year target was set
2023

Portfolio
Investing (Asset owner)

Product type/Asset class/Line of business
Fixed income
Listed equity

Sectors covered by the target
All sectors

Target type
Portfolio temperature alignment

Target type: Absolute or intensity
<Not Applicable>

Scopes included in temperature alignment
Scope 1 + 2

Metric (or target numerator if intensity)
Degrees of warming

Target denominator
<Not Applicable>

Base year
2019

Figure in base year
2.7

Percentage of portfolio emissions covered by the target
31

Monetary metric for portfolio coverage (unit currency as reported in C0.4)
Invested value

Percentage of portfolio covered by the target, using a monetary metric
36

Frequency of target reviews
Other, please specify (Every five years or on an 'as needed' basis)

Interim target year
2027

Figure in interim target year
2.3

Target year

2040

Figure in target year
2

Figure in reporting year

% of target achieved relative to base year [auto-calculated]
<Calculated field>

Aggregation weighting used
Total emissions weighted temperature score (TETS)

Proportion of portfolio emissions calculated in the reporting year based on asset level data
<Not Applicable>

Proportion of the temperature score calculated in the reporting year based on company targets
100

Target status in reporting year
New

Is this a science-based target?
Yes, we consider this a science-based target, and the target is currently being reviewed by the Science-based target initiative

Target ambition
Well-below 2°C aligned

Please explain target coverage and identify any exclusions
Target is based on third-party temperature score data provided by ICE/Urgentem, utilizing SBTi/WWF/CDP target setting methodology.

Target reference number
Por3

Year target was set
2023

Portfolio
Investing (Asset owner)

Product type/Asset class/Line of business
Other, please specify (Power Generation Project Finance)

Sectors covered by the target
Utilities

Target type
Sector Decarbonization Approach (SDA)

Target type: Absolute or intensity
Intensity

Scopes included in temperature alignment
<Not Applicable>

Metric (or target numerator if intensity)
Other, please specify (kgCO2e)

Target denominator
kWh

Base year
2019

Figure in base year
0.13

Percentage of portfolio emissions covered by the target
4

Monetary metric for portfolio coverage (unit currency as reported in C0.4)
Invested value

Percentage of portfolio covered by the target, using a monetary metric
3

Frequency of target reviews
Other, please specify (Every five years or on an 'as needed' basis)

Interim target year
2035

Figure in interim target year
0.14

Target year
2035

Figure in target year
0.14

Figure in reporting year

% of target achieved relative to base year [auto-calculated]
<Calculated field>

Aggregation weighting used
<Not Applicable>

Proportion of portfolio emissions calculated in the reporting year based on asset level data
70

Proportion of the temperature score calculated in the reporting year based on company targets
<Not Applicable>

Target status in reporting year
New

Is this a science-based target?
Yes, we consider this a science-based target, and the target is currently being reviewed by the Science-based target initiative

Target ambition
Well-below 2°C aligned

Please explain target coverage and identify any exclusions
Power generation project finance activities are on-balance sheet loans or equities to projects with known use of proceeds that are designated for a clearly defined activity or set of activities. Manulife has already achieved near to the IEA 2035 target emissions intensity (ITP 2017) of 0.14 kgCO2e/KWH. Manulife has established a target of -72% reduction in emissions from this asset class based on SBTi guidance that further decarbonization is suggested regardless of baseline emissions intensities, however may revert to a maintenance target if SBTi guidance shifts to allow for this approach for financial institutions.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
No other climate-related targets

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	173	1844
To be implemented*	39	1958
Implementation commenced*	9	31
Implemented*	51	8442
Not to be implemented	18	414

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Low-carbon energy consumption	Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)
8172

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
53000

Payback period

No payback

Estimated lifetime of the initiative
<1 year

Comment
Manulife Investment Management Real Estate purchased renewable energy for 24 buildings in 2022. A total of 26,676 MWh of renewable energy was purchased. Investment required is an estimation.

Initiative category & Initiative type

Energy efficiency in buildings	Building Energy Management Systems (BEMS)

Estimated annual CO2e savings (metric tonnes CO2e)
2.9

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
27500

Investment required (unit currency – as specified in C0.4)
402000

Payback period
11-15 years

Estimated lifetime of the initiative
11-15 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings	Lighting

Estimated annual CO2e savings (metric tonnes CO2e)
184

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
404000

Investment required (unit currency – as specified in C0.4)
3274000

Payback period
4-10 years

Estimated lifetime of the initiative
6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings	Motors and drives

Estimated annual CO2e savings (metric tonnes CO2e)
3.6

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
14000

Investment required (unit currency – as specified in C0.4)
115000

Payback period

4-10 years

Estimated lifetime of the initiative
11-15 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)

Estimated annual CO2e savings (metric tonnes CO2e)
77.8

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
87000

Investment required (unit currency – as specified in C0.4)
3004000

Payback period
>25 years

Estimated lifetime of the initiative
21-30 years

Comment

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Financial optimization calculations	Investments in emissions reduction are primarily driven by a strong business case for energy efficiency and carbon pricing. Retrofits, building upgrades, retro commissioning and other efficiency projects are implemented across the portfolio on an ongoing basis. Government incentives further contribute to the business case, increasing rate of return on efficiency projects and allow for serious consideration of innovative technologies and on-site renewable generation.
Dedicated budget for other emissions reduction activities	Manulife Investment Management Real Estate's annual budget process includes a section dedicated to sustainability initiatives across all North American properties. This includes specific sections on greenhouse gas management and climate risk resilience initiatives. Specific budgets vary by property based on the identified risks and opportunities and its unique circumstances. As part of Manulife's Sustainable Building Standards, all properties are required to complete energy audits and include the energy and carbon saving initiatives identified within annual business plans (the results and budget amounts will vary by property). Select properties and regions have a dedicated budget for purchasing renewable energy credits. A total of 24 buildings purchased renewable energy in 2022, and 26,676MWh of renewable energy was purchased.
Employee engagement	Real Estate provides tools and training to investment, new construction, property management and operations staff regarding integrating sustainability, including energy efficiency and related carbon reductions into investment and asset management processes. Manulife Investment Management's real estate group provides employees with training, both in person and through our online training platform. Training topics include sustainability in real estate and energy management. In 2022, the real estate team hosted training sessions for asset management and property teams dedicated to GHG Management and Climate Resilience as part of its Sustainable Building Standards update. More broadly, the Manulife Investment Management sustainable investing team periodically conducts ESG-related training sessions for staff in the following departmental areas: - Investment teams (with a focus on equities/fixed income) - Compliance and legal - Marketing compliance - Sales/distribution - Client portfolio managers. For all investment staff, the sustainable investing team has commenced periodic training sessions on ESG issues for which content and medium can vary, e.g. executive pay analysis. Training sessions are led either by the internal sustainable investing team or leverage external service providers and experts. Investment staff attendance at ESG training sessions (internal or external) is tracked from a KPI perspective.
Compliance with regulatory requirements/standards	Real Estate complies with all regulatory and code requirements for energy efficiency, and mandatory energy, waste, and greenhouse gas reporting and disclosure requirements in the jurisdictions in which we operate.
Internal incentives/recognition programs	Real Estate rolled out its Sustainable Building Standards program in 2017. This program rewards properties for implementing strong sustainability practices in 15 sustainability focus areas, of which 6 can be directly linked to mitigating climate impacts. In 2022, we added two new Standards: GHG Management and Climate Resilience.

C-FS4.5

(C-FS4.5) Do any of your existing products and services enable clients to mitigate and/or adapt to the effects of climate change?
Yes

C-FS4.5a

(C-FS4.5a) Provide details of your existing products and services that enable clients to mitigate and/or adapt to climate change, including any taxonomy used to classify the products(s).

Product type/Asset class/Line of business

Investing	Forestry

Taxonomy or methodology used to classify product
Externally classified using other taxonomy or methodology, please specify (Forestry and agriculture sustainability standards (SFI, FSC, Leading Harvest))

Description of product
Institutional investment of timberland and agriculture as a private markets asset.

Product enables clients to mitigate and/or adapt to climate change
Mitigation

Portfolio value (unit currency – as specified in C0.4)
19623405523

% of total portfolio value
94

Type of activity financed/insured or provided
Carbon removal
Nature-based solutions
Sustainable agriculture

Product type/Asset class/Line of business

Investing	Fixed Income

Taxonomy or methodology used to classify product
Green Bond Principles (ICMA)

Description of product
Manulife Global Climate Equity Strategy - aims to provide long-term capital growth by investing at least 80% of the portfolios weighted asset value in a diversified portfolio of companies who are leaders in making positive contributions to climate change. The strategy invests primarily in companies which we believe are climate leaders that are either committed to Science-Based Targets for reducing their greenhouse gas emissions, have lower relative carbon intensity in their given industry; or a significant portion of revenues resulting from climate solutions including, but not limited to, renewable energy, energy efficiency or electric vehicles.
Manulife Global Climate Bond Strategy - The Strategy seeks to provide income and long-term capital growth by investing primarily in global fixed income securities of issuers that are making positive contributions to climate change, either through reducing their own emissions or through the products and services they offer. The strategy invests primarily in issuers which 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 a significant portion 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.

Global Climate Equity Composite:
Portfolio value: CAD 90 million, as of 12/31/2022
% of total portfolio value: 99%

Global Climate Bond Composite:
Portfolio value: CAD 20 million, as of 12/31/2022
% of total portfolio value: 95%

Product enables clients to mitigate and/or adapt to climate change
Mitigation
Adaptation

Portfolio value (unit currency – as specified in C0.4)
110

% of total portfolio value
95

Type of activity financed/insured or provided
Green buildings and equipment
Low-emission transport
Renewable energy
Emerging climate technology, please specify (clean tech companies defined as those derived from products and services related to energy efficiency, pollution prevention, green building, alternative energy and sustainable water)
Carbon removal
Nature-based solutions
Sustainable agriculture
Other, please specify (companies who are leaders in making positive contributions to climate change defined as “Climate Leaders” by a proprietary framework. Climate themed bonds where the use of proceeds contribute to climate change.)

Product type/Asset class/Line of business

Investing	Other, please specify (Green Bond)

Taxonomy or methodology used to classify product
Green Bond Principles (ICMA)

Description of product
In 2017, Manulife became the 1st global life insurer to issue a green bond with an inaugural issuance of SG$500 million. Since then, Manulife has issued two other green bonds of C$600 million (redeemed on 9 May 2023) and US$650 million. The bonds are regular debt instrument with proceeds allocated to the emission-efficient assets aligns our investment and financing activities.

The first two bond issuances of SG$500 million and C$600 million, were issued in accordance with Manulife’s Green Bond Framework which is governed by Manulife’s Green Bond Council, and was developed in line with the International Capital Markets Association (ICMA)’s Green Bond Principles, as confirmed by a 2nd party opinion.

The third bond issuance of US$650 million was issued in accordance with Manulife's Sustainable Bond Framework, which governs green bonds issued on or after February 2022. The framework is governed by Manulife's sustainable Bond Council, and was developed in line with ICMA's Sustainability Bond Guidelines 2021, Green Bond Principles 2021, and Social Bond Principles 2021, as confirmed by a 2nd party opinion.

Portfolio value:
• 1st Green Bond issued 21 November 2017, SG$ 500 million subordinated debt due 21 November 2029.
• 2nd Green Bond issued 9 May 2018, C$600 million subordinated debt due 9 May 2028. Redeemed 9 May 2023.
• 3rd Green Bond issued 16 March 2022, US$750 million senior notes due March 2032.

Product enables clients to mitigate and/or adapt to climate change
Mitigation

Portfolio value (unit currency – as specified in C0.4)
951600000

% of total portfolio value
0.2

Type of activity financed/insured or provided
Green buildings and equipment
Renewable energy
Nature-based solutions
Sustainable agriculture

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?
No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?
No

Name of organization(s) acquired, divested from, or merged with
<Not Applicable>

Details of structural change(s), including completion dates
<Not Applicable>

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	No, but we have discovered significant errors in our previous response(s)	<Not Applicable>

C5.1c

(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	Yes	Scope 2, location-based Scope 2, market-based	There were 19 sites in Canada reported in 2019 rebaselined GHG Inventory that were assigned incorrectly to regions with higher emission factors. The error was corrected and 2019 baseline was revised. Scope 2 emission were calculated using the correct emission factors for 19 Canadian sites.	Yes

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
102739

Comment

Scope 2 (location-based)

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
169479

Comment
There were 19 sites in Canada reported in 2019 rebaselined GHG Inventory that were assigned incorrectly to regions with higher emission factors. The error was corrected and 2019 baseline was revised.

Scope 2 (market-based)

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
159340

Comment
There were 19 sites in Canada reported in 2019 rebaselined GHG Inventory that were assigned incorrectly to regions with higher emission factors. The error was corrected and 2019 baseline was revised.

Scope 3 category 1: Purchased goods and services

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
197330

Comment
2019 emissions under this category are not comparable to 2021 and 2022 data. 2019 Purchased goods and services covered Paper use, data centre energy use and contractor fuel use.

Scope 3 category 2: Capital goods

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
0

Comment
GHG emissions related to Capital good were not calculated in 2019 therefore 2022 data is not comparable to the 2019 period.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 5: Waste generated in operations

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
3018

Comment

Scope 3 category 6: Business travel

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
25660

Comment

Scope 3 category 7: Employee commuting

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 8: Upstream leased assets

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
42313

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 11: Use of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 12: End of life treatment of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 13: Downstream leased assets

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
239039

Comment
GHG emissions from downstream leased assets covers 2019 MIMTA leased properties.

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (upstream)

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
10765

Comment
This category covers GHG emissions related to paper use and data center energy use.

Scope 3: Other (downstream)

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
186565

Comment
This category covers GHG emissions related to Manulife Investment Management Timberland and Agriculture contractor fuel use emissions.

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

ISO 14064-1
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Scope 2 Guidance
The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard
Other, please specify (Greenhouse Gas Protocol: Scope 2 Guidance (An amendment to the GHG Protocol Corporate Standard))

C6. Emissions data

C6.1

(C6.1) What were your organization’s gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
121432

Start date
January 1 2022

End date
December 31 2022

Comment
2022 reduction in location-based scope 1 & 2 emissions are driven by changes in the Manulife Investment Management Real Estate and Manulife Investment Management Timberland and Agriculture portfolio and an increase in the use of primary data in Manulife Investment Management Timberland and Agriculture this year.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)
162749

Start date
January 1 2021

End date
December 31 2021

Comment
Increase in emissions driven by Manulife Investment Management Timberland and Agriculture activities.

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)
150673

Start date
January 1 2020

End date
December 31 2020

Comment
Scope 1 emission increase is driven by improved Manulife Investment Management Timberland and Agriculture data collection and coverage.

C6.2

(C6.2) Describe your organization’s approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
118710

Scope 2, market-based (if applicable)
109250

Start date
January 1 2022

End date
December 31 2022

Comment

Past year 1

Scope 2, location-based
124076

Scope 2, market-based (if applicable)
109442

Start date
January 1 2021

End date
December 31 2021

Comment

Past year 2

Scope 2, location-based
128155

Scope 2, market-based (if applicable)
113249

Start date
January 1 2020

End date
December 31 2020

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?
No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
1003493

Emissions calculation methodology
Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
As a result of improvement in our data collection processes, we gathered the spend data in the reporting period for all purchased goods & services of Manulife. We categorized the input data for the tool corresponding with the sector classification and spend amount in USD and then calculated the GHG emissions using the WRI Scope 3 Evaluator tool. Due to this process improvement and data coverage, the total emissions under this category have increased, therefore making any comparison to the previous year's figure inaccurate. As a financial institution, emissions associated with purchased goods and services are not considered material in the context of our Scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Purchased goods and services emissions exclude paper and business travel as these emissions are reported separately. We utilized WRI Scope 3 Evaluator tool to calculate the GHG emissions.

Capital goods

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
24139

Emissions calculation methodology
Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Scope 3 emissions from capital goods are captured under the ‘Purchased goods and services’ calculation. As a financial institution, emissions associated with capital goods are not considered material in the context of our Scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP’s “Technical Note: Relevance of Scope 3 Categories by Sector”, the Financial Services sector’s material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, “Investments”.

Capital goods includes IT Infrastructure related spend in 2022. We calculated the associated GHG emissions using the WRI Scope 3 Evaluator tool.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As a financial institution, emissions associated with Fuel-and-energy-related activities (not included in Scope 1 or 2) are not considered material in the context of our Scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP’s “Technical Note: Relevance of Scope 3 Categories by Sector”, the Financial Services sector’s material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, “Investments”.

Upstream transportation and distribution

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As a financial institution, emissions associated with upstream transportation and distribution are not considered material in the context of our Scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP’s “Technical Note: Relevance of Scope 3 Categories by Sector”, the Financial Services sector’s material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, “Investments”.

Waste generated in operations

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
1982

Emissions calculation methodology
Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
We measure the amount of waste to landfill in our real estate portfolio and apply a mixed municipal solid waste emission factor of 0.31tCO2e/tonne for waste. The emission factor comes from the EPA Waste Reduction Model (WARM), version 15, November 2020.

As a financial institution, emissions associated with waste generated in operations are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP’s “Technical Note: Relevance of Scope 3 Categories by Sector”, the Financial Services sector’s material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, “Investments”.

Business travel

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

6464

Emissions calculation methodology

Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

Employee business travel by air and by passenger car mileage is tracked centrally by our procurement team who works with our travel partners in Canada and the U.S. Emission factors for air travel are provided by the 2021 Guidelines to UK Defra GHG Conversion Factors for Company Reporting. Three different emission factors were used 0.12871 kg CO2e/km for a short-haul (<483 km), 0.08040kg CO2e/km for medium-haul (>+483km, <3700 km) and 0.10111 kg CO2e/km for long haul (>+ 3700km). For personal car mileage the emission factor is from the EPA Emission Factor for Greenhouse Gas Inventories, September 2021.

As a financial institution, emissions associated with business travel are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Employee commuting

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

As a financial institution, emissions associated with employee commuting are not considered material in the context of our Scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Upstream leased assets

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

30994

Emissions calculation methodology

Asset-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

Activity data was obtained for all corporate partial buildings/office space leased for the use of employees and contractors. We obtained emissions factors from IEA, USEPA and Environment Canada and calculated GHG emissions using the appropriate emission factors.

As a financial institution, emissions associated with upstream leased assets are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

As a financial institution, emissions associated with downstream transportation and distribution are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Processing of sold products

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As a financial institution, emissions associated with downstream transportation and distribution are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Use of sold products

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As a financial institution, emissions associated with downstream transportation and distribution are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

End of life treatment of sold products

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As a financial institution, emissions associated with downstream transportation and distribution are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Downstream leased assets

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
193092

Emissions calculation methodology
Asset-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
We calculate scope 1 and 2 emissions from properties leased by Manulife Investment Management's Timberland and Agriculture business. As a financial institution, emissions associated with down stream leased assets are not considered material in the context of our scope 3 value chain emission inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Franchises

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
As a financial institution, emissions associated with franchises are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Other (upstream)

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
4647

Emissions calculation methodology
Other, please specify (We explain our calculation methodology in the 'Please explain' column.)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
We are providing data in this category for:
- 4,547 metric tonnes for Transactional and office paper: We calculated the GHG emissions associated with our transactional and office paper. We apply a conversion factor of 2.54kg CO2e/tonne of paper purchased. This emission factor is taken from the Environmental Paper Network 2015, Paper Calculator. We used the emission factor for uncoated freesheet, 0% recycled to be conservative in our calculation.
- 100 metric tonnes for Data Centres. We calculate emissions from third-party data centres. This is done by multiplying the electricity use kWh by the emission factor relevant for the province or state in which the data centre is located taken from the IEA 2021 Emission Factors, the US EPA eGrid emission factors, Summary Tables, released 2021, and the Canadian National Inventory Report written in 2021

We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

Other (downstream)

Evaluation status
Not relevant, calculated

Emissions in reporting year (metric tons CO2e)
482445

Emissions calculation methodology
Other, please specify (We explain our calculation methodology in the 'Please explain' column.)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
We calculate emissions from Contractor Fuel Use from Manulife Investment Management's Timberland and Agriculture business. As a financial institution, emissions associated with contractor fuel use are not considered material in the context of our scope 3 value chain emissions inventory. We reference the GHG Protocol during emissions screening and are prioritizing relevance based on materiality. As per CDP's "Technical Note: Relevance of Scope 3 Categories by Sector", the Financial Services sector's material source of emissions comes from its lending, investment, and insurance underwriting activities, i.e., portfolio emissions, accounted under Scope 3 category 15, "Investments".

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date
January 1 2021

End date
December 31 2021

Scope 3: Purchased goods and services (metric tons CO2e)
1068441

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)
1560

Scope 3: Business travel (metric tons CO2e)
1985

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)
34909

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)
195684

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)
<Not Applicable>

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

Past year 2

Start date
January 1 2020

End date
December 31 2020

Scope 3: Purchased goods and services (metric tons CO2e)
168063

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)
1751

Scope 3: Business travel (metric tons CO2e)
6044

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)
78636

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)
199569

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)
<Not Applicable>

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.000013983

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
240142

Metric denominator
unit total revenue

Metric denominator: Unit total
17174000000

Scope 2 figure used
Location-based

% change from previous year
198

Direction of change
Increased

Reason(s) for change
Change in revenue
Change in boundary

Please explain
The overall increase in intensity is attributed mainly to the impact of fair value accounting that affects the measurement of our assets and liabilities. We reported $45.1 billion of net realized and unrealized investment losses in investment income in 2022 (2021 – losses of $4.0 billion). In the same period our Scope 1 and 2 emissions decreased by 17% compared to 2021.

Intensity figure
6

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
240142

Metric denominator
full time equivalent (FTE) employee

Metric denominator: Unit total
40018

Scope 2 figure used
Location-based

% change from previous year
20

Direction of change
Decreased

Reason(s) for change
Change in output

Please explain
Intensity figure in 2022 is lower compared to previous year due to a decrease in Scope 1 and 2 emissions.

C7. Emissions breakdowns

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?
No

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?
Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	5174	Decreased	1.9	The total renewable energy (RECs) purchases during 2021 and 2022 are used in the calculation. Our green power purchases in 2022 experienced a decrease compared to 2021. The % change figure reported has been calculated as follows: 100 X (Change in scope 1+2 emissions attributed to change in renewable energy consumption ÷ previous year scope 1+2 emissions), where change in scope 1+2 emissions attributed to change in renewable energy consumption.
Other emissions reduction activities	41510	Decreased	15.3	Our Gross Scope 1 + 2 (market-based) emissions decreased by 15.3% compared to the previous year. Percent Change calculation = (2021 Scope 1+2 emissions – 2020 Scope 1+2 emissions) ÷ 2020 Scope 1+2 emissions The 2022 reduction in Scope 1 & 2 emissions (market-based) are driven by ongoing energy conversation measures, changes in the Manulife Investment Management Real Estate and Manulife Investment Management Timberland and Agriculture portfolio and an increase in the use of primary data in Manulife Investment Management Timberland and Agriculture this year.
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output		<Not Applicable>		
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	Yes
Generation of electricity, heat, steam, or cooling	No

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	2184721	2184721
Consumption of purchased or acquired electricity	<Not Applicable>	27325	522753	550078
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	18407	18407
Consumption of purchased or acquired cooling	<Not Applicable>	0	0	0
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	27325	2725881	2753206

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

Country/area
Australia

Consumption of purchased electricity (MWh)
730

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
730

Country/area
Canada

Consumption of purchased electricity (MWh)
248088

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
3937

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
252025

Country/area
China

Consumption of purchased electricity (MWh)
12638

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
12638

Country/area
Japan

Consumption of purchased electricity (MWh)
5366

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
5366

Country/area
Malaysia

Consumption of purchased electricity (MWh)
3010

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
3010

Country/area
Singapore

Consumption of purchased electricity (MWh)
6120

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
6120

Country/area
United States of America

Consumption of purchased electricity (MWh)
164943

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
14470

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
179413

Country/area
Viet Nam

Consumption of purchased electricity (MWh)
1077

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
1077

Country/area
Indonesia

Consumption of purchased electricity (MWh)
354

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
354

Country/area
Hong Kong SAR, China

Consumption of purchased electricity (MWh)
658

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
658

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Verification Report for MIM 2022 Agricultural Inventory_final.pdf
CY22 LRQA Assurance Statement for Manulife.pdf
Verification Report Manulife MLF22 5 2023 T.pdf

Page/ section reference
Full statement.

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Verification Report for MIM 2022 Agricultural Inventory_final.pdf
CY22 LRQA Assurance Statement for Manulife.pdf
Verification Report Manulife MLF22 5 2023 T.pdf

Page/ section reference
Full statement.

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Verification Report for MIM 2022 Agricultural Inventory_final.pdf
CY22 LRQA Assurance Statement for Manulife.pdf
Verification Report Manulife MLF22 5 2023 T.pdf

Page/ section reference
Full statement.

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Upstream leased assets
Scope 3: Downstream leased assets

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Verification Report for MIM 2022 Agricultural Inventory_final.pdf
CY22 LRQA Assurance Statement for Manulife.pdf
Verification Report Manulife MLF22 5 2023 T.pdf

Page/section reference
Full statement.

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
No, we do not verify any other climate-related information reported in our CDP disclosure

C11. Carbon pricing

C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?
Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Type of internal carbon price
Shadow price

How the price is determined
Alignment with the price of a carbon tax
Cost of required measures to achieve emissions reduction targets

Objective(s) for implementing this internal carbon price
Drive energy efficiency
Drive low-carbon investment

Scope(s) covered
Scope 1
Scope 2

Pricing approach used – spatial variance
Uniform

Pricing approach used – temporal variance
Static

Indicate how you expect the price to change over time
<Not Applicable>

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)
50

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)
250

Business decision-making processes this internal carbon price is applied to
Capital expenditure
Risk management
Opportunity management

Mandatory enforcement of this internal carbon price within these business decision-making processes
No

Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan
Manulife Investment Management Real Estate's GHG management uses internal carbon price for building carbon audits (applicable within Canadian properties using Canadian Federal gov'ts projected carbon price). Supports internal decisions to direct capital investments in property upgrades to low carbon heating solutions.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, our customers/clients
Yes, our investees
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Information collection (understanding supplier behavior)

Details of engagement
Other, please specify (Adherence to our Vendor Code of Conduct and collect ESG-related information, including climate change)

% of suppliers by number
80

% total procurement spend (direct and indirect)
80

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
We are 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. In addition, we are also committed to expanding our Supplier Diversity Program. Achieving this requires a commitment to integrity and consistent ambitious standards from all partners, including our vendors. All vendors that engage with Manulife are expected to adhere to our Vendor Code of Conduct, which includes the requirement to proactively minimize or mitigate the environmental impacts associated with their business activities through documented policies and procedures.

Impact of engagement, including measures of success
Success measures: all procurement-reviewed contracts include the reference to and acceptance of the Vendor Code of Conduct.
All outgoing Requests for Proposal (RFP) include Supplier Diversity related questions. In 2023, we will expand this questionnaire to include climate-change related questions.

Comment

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Other, please specify (Influence on purchased goods and services)

% of suppliers by number
1

% total procurement spend (direct and indirect)
1

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
As part of our sustainability efforts, we have integrated paper reduction and digitization as a core requirement in print Request for Proposals (RFP).
Inclusion of paper reduction programs as core business requirements involve committing to utilizing paper from sustainable sources. We define sustainable sources of paper as being either certified by one of the two leading certification programs (FSC and SFI) or containing 25% or more recycled content. We integrate sustainability in the procurement process and through vendor lifecycle management. We work with vendors to ensure our hardware is in production service until end-of-life and ensure we properly dispose of all hardware. We also leverage virtual server and storage infrastructure to minimize the overall hardware footprint of our operations.
Where Manulife utilizes branded merchandise for global internal or external campaigns, guidelines are provided to support incorporation of sustainability in the procurement process through our Merchandise Tip Sheet. This includes avoiding branding of disposable items, focusing on recyclable content, and reducing excess packaging.

Impact of engagement, including measures of success
We made the following enhancements to our approach:
• Stakeholder Engagement: aligned on a global paper data collection process categories and suppliers for data collection.
• Supplier Buy-in: We organized one-on-one meetings with print suppliers to educate and gain their buy-in to provide quarterly paper usage reports.
• Data Centers: removed end-of-life hardware within our data centers. In 2023, we will continue to review our Network IT equipment life cycle and plan on reducing further as we move towards upgraded hardware.

Comment

C-FS12.1b

(C-FS12.1b) Give details of your climate-related engagement strategy with your clients.

Type of clients
Clients of Asset Managers (Asset owners)

Type of engagement
Education/information sharing

Details of engagement
Run an engagement campaign to educate clients about climate change
Provide asset owner clients with information and analytics on net zero investing and climate risk and opportunity

% client-related Scope 3 emissions as reported in C-FS14.1a
73

Portfolio coverage (total or outstanding)
100

Rationale for the coverage of your engagement
Non-targeted engagement

Impact of engagement, including measures of success
At Manulife Investment Management, we work hard to understand needs and desires of our clients through regular interactions. At a minimum, we speak directly with each institutional mandate client on an annual basis. In these discussions, we elicit clients' feedback on their investment goals and may specifically review sustainable investment goals as directed by individual clients. Also, we respond to clients' ESG due diligence questionnaires to explain our approach to sustainable investing. Upon client request, we respond to client ESG due diligence questionnaires to explain our approach to sustainable investing. We also may conduct portfolio reviews on portfolio ESG risks and characteristics, if appropriate for a particular strategy, with clients. Throughout 2022 we had many one-on-one sessions with institutional clients, to discuss climate risk and other ESG issues. These sessions covered everything from how we integrate climate risk into our investment decision making, the extent of our stewardship and engagement activities, our proxy voting track record on climate related resolutions, our growing climate themed product suite, and all the partnerships and initiatives we invest our time and expertise in order to advance the agenda. In most cases, the purpose of any discussion is to help clients understand and manage ESG risks of their assets. We believe the measurement of success or outcomes of these client interactions would only be meaningful if evaluated on a holistic basis, e.g., if the mandate's overall performance in financially and sustainability aligns with a given client's objective. We offer free ESG education for our retail advisors and institutional investor clients in Canada through a platform we call the Sustainable Investment Academy. This curriculum communicates the basics of sustainable investing, including many aspects of stewardship, but it also goes deeper with decision-useful information on how to incorporate ESG considerations into investment policies and governance. While we generally do not have a targeted outcome as part of this work, we do track the number of registrations, progress and course completion by users for internal development purpose. For prospective clients, we often involve the Sustainable Investment team in our presentations to describe our overall approach, answer questions and discuss strategies. We also regularly publish thought leadership pieces for clients and other stakeholders in our website.

Type of clients
Clients of Asset Managers (Asset owners)

Type of engagement
Collaboration & innovation

Details of engagement
Run a campaign to encourage innovation to reduce climate change impacts
Work in partnership with asset owner clients on decarbonization goals, consistent with an ambition to reach net zero emissions by 2050 or sooner across all assets under management
Other, please specify (We will engage with clients on their specific needs and have the capability to screen any assets to minimize client portfolio exposure to climate risk.)

% client-related Scope 3 emissions as reported in C-FS14.1a
73

Portfolio coverage (total or outstanding)
100

Rationale for the coverage of your engagement
Non-targeted engagement

Impact of engagement, including measures of success
Offering Sustainable Thematic Strategies to Clients
We offer several ESG strategies including our Sustainable Asia Bond Strategy, Sustainable Asia Equity Strategy, Climate Action Bond Strategy and our Climate Action Equity Strategy, which use proprietary screening techniques, and stewardship practices to offer investments in-line with sustainability criteria. We also collaborate with institutional clients to offer bespoke sustainable investment solutions. These products meet client needs around sustainable investment and climate generally. They also act as points of conversation around climate considerations with clients.
Moreover, we have the capability to run customized portfolios for clients which manage exposure to higher-climate risk names.

Case Studies for Institutional Clients
In 2022, our investment teams continued to engage directly with issuers on a range of sustainability topics with some of the most common issues discussed including GHG emissions, board structure and management team, physical impacts of climate change, labour practices, and executive compensation. To better provide transparency for our clients into the results of these activities we launched an engagement case studies website to highlight some of the results of dialogue with issuers. For additional information regarding Manulife Investment Management's ESG investment capabilities for institutional investors only, please visit www.manulifeim.institutional/sustainability.

C-FS12.1c

(C-FS12.1c) Give details of your climate-related engagement strategy with your investees.

Type of engagement
Information collection (Understanding investee behavior)

Details of engagement
Include climate-related criteria in investee selection / management mechanism
Climate-related criteria is integrated into investee evaluation processes
Collect climate-related and carbon emissions information from new investee companies as part of initial due diligence
Collect climate-related and carbon emissions information at least annually from long-term investees
Other, please specify (Encourage better climate-related disclosure practices among investees)

% scope 3 emissions as reported in C-FS14.1a/C-FS14.1b
34

Investing (Asset managers) portfolio coverage

Investing (Asset owners) portfolio coverage
100

Rationale for the coverage of your engagement
Non-targeted engagement

Impact of engagement, including measures of success
Monitoring material ESG issues at, and encouraging ESG awareness by, the borrower as appropriate is viewed as a critical part of general ongoing investment surveillance. In some cases, this may present a challenge as many of our investments are in companies/assets that are privately held, where no public information may be relied on. The General Account is an active participant in a variety of industry groups. This includes the Private Placement Industry Association, with whom we have actively worked to develop an ESG-oriented questionnaire for integration in due diligence materials of new private placements. In addition, this year we conducted a second annual survey of industry peer ESG best practices. Results were consolidated and anonymized to share back with survey respondents and used to share insights on industry level progress and leading practices. As a member of the Geneva Association, Manulife's General Account is participating in a newly convened expert advisory committee on de-risking and investing in new technologies for net zero transition. This initiative seeks to understand avenues to mobilize and demonstrate opportunities for the insurance industry to de-risk and invest in climate technologies for decarbonization, unlocking capital and insurance solutions at critical early stages of development for these technologies. In 2022, we made the following enhancements to our approach: began the development of an ESG database in collaboration with the internal Advanced Analytics team, with the intent of providing a comprehensive platform for tracking and reporting key ESG metrics across the General Account's investment portfolio, introduced ESG factors into Commercial Mortgages questionnaires to better understand property-level factors such as infrastructure needs and energy uses, and grew the dedicated General Account ESG team in Asia to support better integration and understanding of the diversity of ESG activities occurring in the region.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

We are committed to a program of ongoing education on sustainability as we recognize the importance of increasing knowledge, understanding, and awareness of ESG risks and opportunities which are material to financial outcomes. In 2022, we implemented the Manulife Investment Management Sustainable Investing Academy, an education curriculum which covers a range of key sustainability topics. The education program was made available to institutional investors in Canada, with the current objective of expanding to other markets in the future.

All of our vendors in our value chain who provide Manulife with services or products are provided with and are expected to adhere to the requirements of our Vendor Code of Conduct which requires they proactively minimize or mitigate the environmental impacts associated with their business activities through documented policies and procedures.

C-FS12.2

(C-FS12.2) Does your organization exercise voting rights as a shareholder on climate-related issues?

	Exercise voting rights as a shareholder on climate-related issues	Primary reason for not exercising voting rights as a shareholder on climate-related issues	Explain why you do not exercise voting rights on climate-related issues
Row 1	Yes	<Not Applicable>	<Not Applicable>

C-FS12.2a

(C-FS12.2a) Provide details of your shareholder voting record on climate-related issues.

Method used to exercise your voting rights as a shareholder
Exercise voting rights through an external service provider

How do you ensure your shareholder voting rights are exercised in line with your overall strategy or transition plan?
Vote tracking
Review external service provider's climate-related policies
Other, please specify (Review a subset of voting matters)

Percentage of voting disclosed across portfolio
100

Climate-related issues supported in shareholder resolutions
Climate transition plans
Climate-related disclosures
Aligning public policy position (lobbying)
Emissions reduction targets
Board oversight of climate-related issues
Other, please specify (Climate Metrics in Executive Compensation)

Do you publicly disclose the rationale behind your voting on climate-related issues?
<Not Applicable>

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate
Yes, we engage directly with policy makers
Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?
Yes

Attach commitment or position statement(s)
MFC_ClimateChangeStatement_EN.pdf
MFC_CAP_EN.pdf

Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan
Our sustainability governance framework enables us to achieve our sustainability objectives across our global franchise, facilitating easier and more strategic decision-making within the context of our business objectives. Led by the Global Chief Sustainability Officer, Manulife's Global Climate Change Taskforce consists of representatives from multiple businesses and functional areas. It drives the development of the climate strategy, risk management activities on climate-related matters, performance tracking and disclosures. The Global Climate Change Taskforce supports execution of our climate action plan and includes representation from subsidiary-specific working groups. The Manulife Investment Management Engagement team meets regularly with the Global Sustainability team at Manulife to discuss company policy and to ensure advocacy aligns with these goals.

As a leading international financial services provider, Manulife is committed to participating in the political process in a way that is consistent with our commitment to ethical conduct and our practice of complying with all applicable laws and avoiding potential or actual conflicts of interest.

Active engagement in public policy improves our ability to understand and address issues that impact our stakeholders and allows us to contribute to informed government decision-making. In all jurisdictions where Manulife and its subsidiaries operate, we monitor and engage on public policy issues that could impact our business, customers, colleagues, and communities. As part of our efforts, we regularly report on lobbying activity, as required, to ensure accountability and transparency.

The Corporate Governance and Nominating Committee of the Board of Directors oversees the company's public policy activity and receives regular reports on significant developments.

The Regulatory & Public Affairs and Government Relations function coordinates our engagement with regulators and policymakers as well as many of our key industry and trade associations. The group also monitors legislative activities, analyzes regulatory and policy trends, and helps coordinate comments on regulatory and/or policy proposals.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate
<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate
<Not Applicable>

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Specify the policy, law, or regulation on which your organization is engaging with policy makers
• OSFI B15 Guideline Consultation
• Canadian Securities Administrators (CSA) Disclosure Consultation
• Securities and Exchange Commission (SEC) ESG Disclosure Consultation IAIS Climate Risk Steering Group, with relation to climate scenario analysis and data collection/financial stability analysis

Category of policy, law, or regulation that may impact the climate
Climate change mitigation

Focus area of policy, law, or regulation that may impact the climate
Climate-related reporting
Climate-related targets

Policy, law, or regulation geographic coverage
National

Country/area/region the policy, law, or regulation applies to
Canada
United States of America

Your organization's position on the policy, law, or regulation
Support with minor exceptions

Description of engagement with policy makers
Manulife engaged with regulators, directly and through industry associations, on climate policy and sustainable finance. Additionally, Manulife engaged with government officials responsible for environment, climate change, and/or natural resources to share our insights on environmental and climate change policy. Active engagement in public policy improves our ability to understand and address issues that impact our stakeholders and allows us to contribute to informed government decision-making. When engaging with certain regulators, such as OSFI, on industry-related topics and public policy matters, such as climate-risk and disclosures, we have a governance process in place, which includes ensuring company-wide alignment and informing senior leadership and the Board.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?
Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?
<Not Applicable>

C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association
Other, please specify (IIF, CLHIA, ACLI, ICI Global, SIFMA, EFAMA, The Investment Association (UK), HK Investment Fund Association, Asset Management Association of China, Sustainable Finance Action Council, Investment management Association of Singapore SITAC, and others.)

Is your organization's position on climate change policy consistent with theirs?
Consistent

Has your organization attempted to influence their position in the reporting year?
Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position
Overall, our trade associations in the financial services industry are supportive of climate disclosure and sustainable finance policies. We agree with this position and, where necessary, are influencing trades to take a forward looking approach. We are seeking to promote consistent global standards as it relates to taxonomy, climate disclosure and data, where possible. Supporting their efforts and educating them on the impact on global firms. An example of a trade association that is aligned with the goals of the Paris Agreement is SIFMA.

Organizations we join as a member may have interactions with government officials on matters of interest to our industry and may promote public policy objectives important to us, our stakeholders or the broader community. Our membership in, or financial support of, these organizations does not imply that Manulife supports every position taken by these organizations or those of their other members. Where positions differ from ours, we voice concerns as appropriate by engaging with these organizations through boards, committees or publicly, as necessary.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding
<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?
Yes, we have evaluated, and it is aligned

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In mainstream reports, incorporating the TCFD recommendations

Status
Complete

Attach the document
MFC_ClimateChangeStatement_EN.pdf
MFC_ESGR_2022_EN.pdf
MFC_CAP_EN.pdf
MFC_MDA_2022_EN.pdf

Page/Section reference
2022 ESG Report: pages 24-45.
Climate Change Statement: pages 1-3.
Climate Action Plan - Our Journey to Net Zero: pages 1-7.
Management's Discussion and Analysis: pages 50-51.

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Comment
We have been a supporter of the Task Force on Climate-related Financial Disclosures (TCFD) since 2017 and are committed to adopting and aligning our disclosures to the TCFD recommendations. Our climate-related disclosure can be found in our 2022 Management Discussion and Analysis and 2022 ESG Report. Manulife's ESG Report provides disclosure on Manulife's position on climate change and nature and biodiversity, and our strategy to support the transition to a low carbon economy. Information about our response to climate change and our GHG emissions performance can be found on the Environment section of our 2022 ESG report, our Climate Action Plan report and 2022 Climate Change Statement.

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	Asia Investor Group on Climate Change (AIGCC) Ceres Valuing Water Initiative Climate Action 100+ Forest Stewardship Council (FSC) International Corporate Governance Network (ICGN) Investor Network on Climate Risk (INCR) Principle for Responsible Investment (PRI) Task Force on Climate-related Financial Disclosures (TCFD) Task Force on Nature-related Financial Disclosures (TNFD) World Business Council for Sustainable Development (WBCSD)	• Ceres Valuing Water Initiative: Manulife Investment Management joined Ceres Valuing Water Initiative and are founding member of the valuing water investor working group. • Climate Action 100+: In 2017, Manulife Investment Management was a founding member of Climate Action 100+. • Forest Stewardship Council (FSC): Manulife Investment Management certifies our forests and farms under the FSC certification. • Investor Network on Climate Risk (INCR): we are a member. • Principle for Responsible Investment (PRI): Manulife Investment Management has been a signatory since 2015 and is an active member of various working groups, including the Sovereign Bond Advisory Committees, Infrastructure Advisory Committee, Fixed Income Advisory Committee, and Real Estate Advisory Committee. • Task Force on Climate-related Financial Disclosures (TCFD): We are a supporter of the TCFD since 2017 and are committed to adopting and aligning our disclosures to the TCFD recommendations. • Task Force on Nature-related Financial Disclosures (TNFD): Manulife Investment Management was a member of the TNFD Forum and formerly members of the Informal Working Group developing the scope for TNFD • International Corporate Governance Network (ICGN): Manulife Investment Management is a member of the Stewardship Committee. • Asia Investor Group on Climate Change: Manulife Investment Management is an active member. • World Business Council for Sustainable Development (WBCSD): Manulife Investment Management is a member.

C14. Portfolio Impact

C-FS14.0

(C-FS14.0) For each portfolio activity, state the value of your financing and insurance of carbon-related assets in the reporting year.

Investing in all carbon-related assets (Asset manager)

Are you able to report a value for the carbon-related assets?
Yes

Value of the carbon-related assets in your portfolio (unit currency – as specified in C0.4)
26730930000

New loans advanced in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Total premium written in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Percentage of portfolio value comprised of carbon-related assets in reporting year
100

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets
<Not Applicable>

Please explain why you are not providing a value for the financing and/or insurance to carbon-related assets and your plans for the future
<Not Applicable>

Details of calculation
This figure (USD $19.7B in AUM) represents 100% of the value of our real estate portfolio. Based on the definition of 'carbon-related assets' which would include real estate investments.

Investing in coal (Asset manager)

Are you able to report a value for the carbon-related assets?
No, but we plan to assess our portfolio's exposure in the next two years

Value of the carbon-related assets in your portfolio (unit currency – as specified in C0.4)
<Not Applicable>

New loans advanced in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Total premium written in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Percentage of portfolio value comprised of carbon-related assets in reporting year
<Not Applicable>

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets
Other, please specify (We are working with relevant internal stakeholders and data providers to build robust systems and processes for reporting on this data.)

Please explain why you are not providing a value for the financing and/or insurance to carbon-related assets and your plans for the future
We are working with relevant internal stakeholders and data providers to build robust systems and processes for reporting on this data.

Details of calculation
<Not Applicable>

Investing in oil and gas (Asset manager)

Are you able to report a value for the carbon-related assets?
No, but we plan to assess our portfolio's exposure in the next two years

Value of the carbon-related assets in your portfolio (unit currency – as specified in C0.4)
<Not Applicable>

New loans advanced in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Total premium written in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Percentage of portfolio value comprised of carbon-related assets in reporting year
<Not Applicable>

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets
Other, please specify (We are working with relevant internal stakeholders and data providers to build robust systems and processes for reporting on this data.)

Please explain why you are not providing a value for the financing and/or insurance to carbon-related assets and your plans for the future
We are working with relevant internal stakeholders and data providers to build robust systems and processes for reporting on this data.

Details of calculation
<Not Applicable>

Investing all carbon-related assets (Asset owner)

Are you able to report a value for the carbon-related assets?
Yes

Value of the carbon-related assets in your portfolio (unit currency – as specified in C0.4)
71423000000

New loans advanced in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Total premium written in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Percentage of portfolio value comprised of carbon-related assets in reporting year
17

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets
<Not Applicable>

Please explain why you are not providing a value for the financing and/or insurance to carbon-related assets and your plans for the future
<Not Applicable>

Details of calculation
Data as of December 31, 2022. We include the sub-sectors oil and gas, oil and gas services, pipelines, coal, electric, gas, basic materials, building materials, and ship building as part of the industry sectors in scope. Data is based on our internal classification system of industry subgroups and may not reflect all investments in diversified entities involved in carbon-related sectors.

Investing in coal (Asset owner)

Are you able to report a value for the carbon-related assets?
Yes

Value of the carbon-related assets in your portfolio (unit currency – as specified in C0.4)
30000000

New loans advanced in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Total premium written in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Percentage of portfolio value comprised of carbon-related assets in reporting year
1

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets
<Not Applicable>

Please explain why you are not providing a value for the financing and/or insurance to carbon-related assets and your plans for the future
<Not Applicable>

Details of calculation
Public bonds, private placements, public equities. Data as of Dec 31st, 2022. Data is based on our internal classification system of primary industry subgroups. Data may include metallurgical coal and may not reflect all investments in diversified entities involved in coal or meeting Manulife's thermal coal thresholds.

Investing in oil and gas (Asset owner)

Are you able to report a value for the carbon-related assets?
Yes

Value of the carbon-related assets in your portfolio (unit currency – as specified in C0.4)
11419000000

New loans advanced in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Total premium written in reporting year (unit currency – as specified in C0.4)
<Not Applicable>

Percentage of portfolio value comprised of carbon-related assets in reporting year
2.75

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets
<Not Applicable>

Please explain why you are not providing a value for the financing and/or insurance to carbon-related assets and your plans for the future
<Not Applicable>

Details of calculation
Data as of December 31st, 2022. It includes our investments in oil and gas in public and private fixed income, public equity, alternative long duration assets including funds and co-invests. Data is based on our internal classification system of industry subgroups and may not reflect all investments in diversified entities involved in this sector.

C-FS14.1

(C-FS14.1) Does your organization measure its portfolio impact on the climate?

	We conduct analysis on our portfolio's impact on the climate	Disclosure metric	Please explain why you do not measure the impact of your portfolio on the climate
Banking (Bank)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Investing (Asset manager)	Yes	Portfolio emissions Other, please specify (Climate Value at Risk (% decrease/increase portfolio value in climate scenarios); Portfolio Temperature Score (degree Celsius relative to the 1.5 degree global goal) , implied temperature rise, Water intensity, waste intensity. Carbon footprinting.)	<Not Applicable>
Investing (Asset owner)	Yes	Portfolio emissions Other, please specify (Absolute total emissions, emission intensity (weighted average intensity); green & sustainable investments; carbon-related investments (assets under management and percentage of portfolio))	<Not Applicable>
Insurance underwriting (Insurance company)	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-FS14.1a

(C-FS14.1a) Provide details of your organization’s portfolio emissions in the reporting year.

Investing (Asset manager)

Portfolio emissions (metric unit tons CO2e) in the reporting year

776741

Portfolio coverage

100

Percentage calculated using data obtained from clients/investees

61

Emissions calculation methodology

The Global GHG Accounting and Reporting Standard for the Financial Industry

Please explain the details and assumptions used in your calculation

These value account for 100% of Manulife Investment Management Timberland and Agriculture portfolio. For our Timberland and Agriculture group, given certain gaps and limitations in the inventory at present, strict conformance to the following standards and guidelines is not being claimed: World Resources Institute / World Business Council for Sustainable Development (WRI/WBCSD) GHG Protocol Corporate Accounting and Reporting Standard, WRI GHG Protocol Agricultural Guidance, ISO 14064-1, and IPCC Guidelines for National Greenhouse Gas Inventories 2019 Refinement. Our carbon inventory process develops total inventory results, and documents the raw data, assumptions, emission factors and calculations that were used to generate those results. Operational data was requested for every property in the portfolio. In the case where primary data was provided (mostly direct-operate properties), it was used in the calculator. In the case where primary data was unavailable (mostly tenant-operate properties), empirically-based estimates were used to fill the gaps. Primary data was used in 44% of fertilizer calculations, 76% of electricity calculations, and 61% of fuel calculations. Overall, the use of primary data increased from 40% to 61% between 2021 and 2022. A scan of competing agriculture asset managers was completed to gauge the level of success others were having in the development of their operational and greenhouse gas inventories. Almost no competitors are disclosing their footprint, and primary data is nearly non-existent. For example, the largest agriculture asset manager in the world is Nuveen, and their footprint is 100% estimate based.

Investing (Asset owner)

Portfolio emissions (metric unit tons CO2e) in the reporting year
29144708

Portfolio coverage
34

Percentage calculated using data obtained from clients/investees
50

Emissions calculation methodology
The Global GHG Accounting and Reporting Standard for the Financial Industry

Please explain the details and assumptions used in your calculation
For the purpose of reporting, Manulife utilized a Trucost methodology for compilation of publicly available data and therefore, incorporates scope 1, 2, and Scope 3 –- upstream emissions (where significant to the sector). Emissions are reported per the Partnership for Carbon Accounting Financials (PCAF), utilizing the Global GHG Accounting and Reporting Standard for the Financial Industry. Due to the nature of publicly available emissions disclosure across industries, data lags by one fiscal year and represents a specific point-in-time based on data availability from data providers. Data is not externally assured and may be adjusted in future publications due to changes in the organizational portfolio, in addition to improvements in availability, controls, and quality of data.

Currently, we rely on Trucost data to report the emission from 90% of our listed equity and bonds portfolio, and 34% of our total portfolio. The limited portfolio coverage is primarily due to a lack of reliable, quality data for private markets investments as well as a new methodology for sovereign bonds that we have not yet applied. The following portion of our emissions footprint is based on actual data disclosed by issuers in full, with the remainder being made up of partial or modelled data:
Public equity –
Scope 1: 36%
Scope 2: 30%
Scope 3 – upstream: <1%

Public bonds –
Scope 1: 27%
Scope 2: 17%
Scope 3 – upstream: 0%

As a result, all Scope 3 financed emissions data disclosed by Manulife is subject to change, including where CDP requests data is reported as a percentage of total emissions. Understanding these data limitations, we are enhancing our internal methodologies for data compilation and analysis, including refining decision-useful intensity metrics for portfolio management. We look forward to improvements to our reporting to support further demonstration of our progress against Climate Action Plan commitments and Manulife has conducted a portfolio baseline footprint of our portfolio covering over 80% of our invested assets with an intent to disclose additional carbon footprint data upon greater availability of reliable and quality information from investees.

C-FS14.1b

(C-FS14.1b) Provide details of the other carbon footprinting and/or exposure metrics used to track the impact of your portfolio on the climate.

Portfolio
Investing (asset manager)

Portfolio metric
Other, please specify (Energy intensity (ekWh/sq.ft))

Metric value in the reporting year
18.1

Portfolio coverage
100

Percentage calculated using data obtained from clients/investees
100

Calculation methodology
Manulife utilized a Trucost methodology for compilation of publicly available data and therefore, incorporates scope 1, 2, and Scope 3 - upstream emissions (where significant to the sector). Emissions are reported per the Partnership for Carbon Accounting Financials (PCAF), utilizing the Global GHG Accounting and Reporting Standard for the Financial Industry. Data is as of Dec 31, 2020. Due to the nature of publicly available emissions disclosure across industries, data lags by one fiscal year. In FY20, Trucost moved to Enterprise Value apportioning for all instruments in line with PCAF - prior year data utilized Market Capitalization, limiting data comparability. The estimated weighted average carbon intensity indicates the carbon intensity of money (in CAD) invested, providing a measure of responsibility for emissions and contribution to climate change. While we have quantified emissions from 86% of our portfolio holdings, holdings where emissions are wholly estimated through average and/or proxies are excluded from this disclosure (currently, ~27% of our listed equity and bonds portfolio). For our infrastructure and private equity and credit businesses, we are in the process of preparing our baseline portfolio carbon footprint and financed emissions for the 2022 reporting year.

Portfolio
Investing (asset manager)

Portfolio metric
Portfolio carbon footprint (tCO2e/Million invested)

Metric value in the reporting year
208

Portfolio coverage
40

Percentage calculated using data obtained from clients/investees
100

Calculation methodology
For our Manulife Investment Management Public Markets business we most recently conducted a portfolio emissions analysis for 2021 data. This analysis focused on the 4 largest strategies by assets under management (AUM) in our listed equity portfolios and the 6 largest fixed income strategies by AUM. These strategies represent approximately 34% of our total equity AUM and 40% of our total fixed-income AUM. To calculate emissions, we used a representative account from each of the 10 strategies. We've used a sample group to provide an estimation of our public markets investments emissions as we strive to improve on our year-over-year level of disclosure within the TCFD's recommended disclosure guidelines. We'll continue to explore opportunities to increase the scope of coverage in future reports, as we aim to improve both our level of disclosure and our understanding of our public market's investment emissions.

In terms of our carbon footprint, where the total emissions of our portfolio are normalized by the total AUM, our disclosures include both unadjusted data and data adjusted to remove cash, derivatives, sovereigns, and issuers for which GHG emissions data isn't available. In our view, this enables a fuller understanding of our portfolio. As expected, we observe an outsize proportion of scope 3 downstream emissions. We calculate our carbon footprint using the Partnership for Carbon Accounting Financials methodology, which has gained traction in the market and among standard-settings bodies. This motivates our decision to publish both the adjusted and unadjusted figures as mentioned above. In our view, using unadjusted figures can easily understate the carbon footprint: When the denominator is the unadjusted total AUM of a portfolio (including cash, derivatives, and other noncorporate issues), the footprint figure could show significant efficiency if the proportion of noncorporate security exposure is bigger within the portfolio—for the simple fact that these securities lack carbon emissions data. To achieve a more representative footprint, we removed securities that lack this data and focused the calculation on securities that have underlying carbon and EVIC figures. For each scope combination, we observed a doubling of the emissions metric when comparing adjusted to unadjusted figures. While there's no international consensus on how the denominator adjustments are made at this point in time, and regulations aren't prescriptive, we believe this requires careful interpretation by asset managers. For transparency, we communicate both footprint figures.

The figure above covers Scopes 1, 2 and 3 (upstream and downstream) and is the unadjusted carbon footprint figure.

More information is available in the Manulife Investment Management Climate-related financial disclosure report available here:
https://www.manulifeim.com/institutional/us/en/sustainability#transparency.

Portfolio
Investing (asset manager)

Portfolio metric
Portfolio carbon footprint (tCO2e/Million invested)

Metric value in the reporting year
439

Portfolio coverage
40

Percentage calculated using data obtained from clients/investees
100

Calculation methodology
For our Manulife Investment Management Public Markets business we most recently conducted a portfolio emissions analysis for 2021 data. This analysis focused on the 4 largest strategies by assets under management (AUM) in our listed equity portfolios and the 6 largest fixed income strategies by AUM. These strategies represent approximately 34% of our total equity AUM and 40% of our total fixed-income AUM. To calculate emissions, we used a representative account from each of the 10 strategies. We've used a sample group to provide an estimation of our public markets investments emissions as we strive to improve on our year-over-year level of disclosure within the TCFD's recommended disclosure guidelines. We'll continue to explore opportunities to increase the scope of coverage in future reports, as we aim to improve both our level of disclosure and our understanding of our public market's investment emissions.

In terms of our carbon footprint, where the total emissions of our portfolio are normalized by the total AUM, our disclosures include both unadjusted data and data adjusted to remove cash, derivatives, sovereigns, and issuers for which GHG emissions data isn't available. In our view, this enables a fuller understanding of our portfolio. As expected, we observe an outsize proportion of scope 3 downstream emissions. We calculate our carbon footprint using the Partnership for Carbon Accounting Financials methodology, which has gained traction in the market and among standard-settings bodies. This motivates our decision to publish both the adjusted and unadjusted figures as mentioned above. In our view, using unadjusted figures can easily understate the carbon footprint: When the denominator is the unadjusted total AUM of a portfolio (including cash, derivatives, and other noncorporate issues), the footprint figure could show significant efficiency if the proportion of noncorporate security exposure is bigger within the portfolio—for the simple fact that these securities lack carbon emissions data. To achieve a more representative footprint, we removed securities that lack this data and focused the calculation on securities that have underlying carbon and EVIC figures. For each scope combination, we observed a doubling of the emissions metric when comparing adjusted to unadjusted figures. While there's no international consensus on how the denominator adjustments are made at this point in time, and regulations aren't prescriptive, we believe this requires careful interpretation by asset managers. For transparency, we communicate both footprint figures.

The figure above covers Scopes 1, 2 and 3 (upstream and downstream) and is the adjusted carbon footprint figure.

More information is available in the Manulife Investment Management Climate-related financial disclosure report available here:
https://www.manulifeim.com/institutional/us/en/sustainability#transparency.

Portfolio
Investing (asset manager)

Portfolio metric
Weighted average carbon intensity (tCO2e/Million revenue)

Metric value in the reporting year
1354

Portfolio coverage
40

Percentage calculated using data obtained from clients/investees
100

Calculation methodology
For our Manulife Investment Management Public Markets business we most recently conducted a portfolio emissions analysis for 2021 data. This analysis focused on the 4 largest strategies by assets under management (AUM) in our listed equity portfolios and the 6 largest fixed income strategies by AUM. These strategies represent approximately 34% of our total equity AUM and 40% of our total fixed-income AUM. To calculate emissions, we used a representative account from each of the 10 strategies. We've used a sample group to provide an estimation of our public markets investments emissions as we strive to improve on our year-over-year level of disclosure within the TCFD's recommended disclosure guidelines. We'll continue to explore opportunities to increase the scope of coverage in future reports, as we aim to

improve both our level of disclosure and our understanding of our public market's investment emissions.

WACI is the standard metric used by investors to assess the emissions management efficiency of investee companies. In our emissions disclosure, we show WACI for different indexes as disclosed by the index provider. We note, in particular, the variability between regions and asset classes. In our view, it's important to acknowledge that comparing a metric such as WACI isn't as simple as we might think because underlying emissions estimation methodologies may differ. For example, some of the major index providers have proprietary ESG research and data capabilities; therefore, they source emissions and compute carbon estimates based on their own expertise. By contrast, other index providers may rely on third-party providers that are dedicated to providing raw data and carbon estimates that use different methodologies. The variation in output can be illustrated using actual data as described on the following page for an auto manufacturer whose emissions disclosure for 2021 highlights its differences relative to three separate index providers' estimated emissions data for the same company. Data omissions for indirect emissions are one problem encountered here, as are the underlying assumptions used to determine estimates—including for direct emissions. The figure above covers Scopes 1, 2 and 3 (upstream and downstream).

More information is available in the Manulife Investment Management Climate-related financial disclosure report available here:
https://www.manulifeim.com/institutional/us/en/sustainability#transparency.

Portfolio
Investing (asset owner)

Portfolio metric
Weighted average carbon intensity (tCO2e/Million revenue)

Metric value in the reporting year
730

Portfolio coverage
34

Percentage calculated using data obtained from clients/investees
50

Calculation methodology
Manulife utilized a Trucost methodology for compilation of publicly available data and therefore, incorporates scope 1, 2, and Scope 3 - upstream emissions (where significant to the sector). Emissions are reported per the Partnership for Carbon Accounting Financials (PCAF), utilizing the Global GHG Accounting and Reporting Standard for the Financial Industry. Data is as of Dec 31, 2021. Due to the nature of publicly available emissions disclosure across industries, data lags by one fiscal year. In FY21, Trucost moved to Enterprise Value apportioning for all instruments in line with PCAF - prior year data utilized Market Capitalization, limiting data comparability. The estimated weighted average carbon intensity indicates the carbon intensity of money (in CAD) invested, providing a measure of responsibility for emissions and contribution to climate change. While we have quantified emissions from 34% of our portfolio holdings in listed debt and equity, holdings where emissions are wholly estimated through average and/or proxies are excluded from this disclosure. The following portion of our emissions footprint is based on actual data disclosed by issuers in full, with the remainder being made up of partial or modelled data:

Public equity –
Scope 1: 36%
Scope 2: 30%
Scope 3 – upstream: <1%

Public bonds –
Scope 1: 27%
Scope 2: 17%
Scope 3 – upstream: 0%

Portfolio
Investing (asset owner)

Portfolio metric
Other, please specify (Long-, mid- and short-term average temperature scores for listed debt and equities.)

Metric value in the reporting year
2.9

Portfolio coverage
34

Percentage calculated using data obtained from clients/investees
50

Calculation methodology
Manulife utilized a Trucost methodology for compilation of publicly available data and therefore, incorporates scope 1, 2, and Scope 3 - upstream emissions (where significant to the sector). Our temperature score reported correspond to 2019: 2.9.
Emissions are reported per the Partnership for Carbon Accounting Financials (PCAF), utilizing the Global GHG Accounting and Reporting Standard for the Financial Industry. Data is as of Dec 31, 2021. Due to the nature of publicly available emissions disclosure across industries, data lags by one fiscal year. In FY21, Trucost moved to Enterprise Value apportioning for all instruments in line with PCAF - prior year data utilized Market Capitalization, limiting data comparability. The estimated weighted average carbon intensity indicates the carbon intensity of money (in CAD) invested, providing a measure of responsibility for emissions and contribution to climate change. While we have quantified emissions from 34% of our portfolio holdings, holdings where emissions are wholly estimated through average and/or proxies are excluded from this disclosure. The following portion of our emissions footprint is based on actual data disclosed by issuers in full, with the remainder being made up of partial or modelled data:
Public equity –
Scope 1: 36%
Scope 2: 30%
Scope 3 – upstream: <1%

Public bonds –
Scope 1: 27%
Scope 2: 17%
Scope 3 – upstream: 0%

Portfolio
Investing (asset owner)

Portfolio metric
Portfolio carbon footprint (tCO2e/Million invested)

Metric value in the reporting year
201

Portfolio coverage
34

Percentage calculated using data obtained from clients/investees

Calculation methodology
Manulife utilized a Trucost methodology for compilation of publicly available data and therefore, incorporates scope 1, 2, and Scope 3 - upstream emissions (where significant to the sector). Emissions are reported per the Partnership for Carbon Accounting Financials (PCAF), utilizing the Global GHG Accounting and Reporting Standard for the Financial Industry. Data is as of Dec 31, 2021. Due to the nature of publicly available emissions disclosure across industries, data lags by one fiscal year. In FY21, Trucost moved to Enterprise Value apportioning for all instruments in line with PCAF - prior year data utilized Market Capitalization, limiting data comparability. The estimated weighted average carbon intensity indicates the carbon intensity of money (in CAD) invested, providing a measure of responsibility for emissions and contribution to climate change. While we have quantified emissions from 34% of our portfolio holdings, holdings where emissions are wholly estimated through average and/or proxies are excluded from this disclosure. The following portion of our emissions footprint is based on actual data disclosed by issuers in full, with the remainder being made up of partial or modelled data:
Public equity –
Scope 1: 36%
Scope 2: 30%
Scope 3 – upstream: <1%

Public bonds –
Scope 1: 27%
Scope 2: 17%
Scope 3 – upstream: 0%

C-FS14.1c

(C-FS14.1c) Disclose or restate your portfolio emissions for previous years.

Past year 1 for Investing (Asset manager)

Start date

End date

Portfolio emissions (metric unit tons CO2e) in the reporting year

Portfolio coverage

Percentage calculated using data obtained from clients/investees

Emissions calculation methodology

Please select

Please explain the details and assumptions used in your calculation

Past year 1 for Investing (Asset owner)

Start date

January 1 2020

End date

December 31 2020

Portfolio emissions (metric unit tons CO2e) in the reporting year

32000000

Portfolio coverage

30

Percentage calculated using data obtained from clients/investees

50

Emissions calculation methodology

The Global GHG Accounting and Reporting Standard for the Financial Industry

Please explain the details and assumptions used in your calculation

For the purpose of reporting, Manulife utilized a Trucost methodology for compilation of publicly available data and therefore, incorporates scope 1, 2, and Scope 3 –- upstream emissions (where significant to the sector). Emissions are reported per the Partnership for Carbon Accounting Financials (PCAF), utilizing the Global GHG Accounting and Reporting Standard for the Financial Industry. Due to the nature of publicly available emissions disclosure across industries, data lags by one fiscal year and represents a specific point-in-time based on data availability from data providers. Data is not externally assured and may be adjusted in future publications due to changes in the organizational portfolio, in addition to improvements in availability, controls, and quality of data.

Past year 2 for Investing (Asset manager)

Start date

End date

Portfolio emissions (metric unit tons CO2e) in the reporting year

Portfolio coverage

Percentage calculated using data obtained from clients/investees

Emissions calculation methodology

Please explain the details and assumptions used in your calculation

Past year 2 for Investing (Asset owner)

Start date

End date

Portfolio emissions (metric unit tons CO2e) in the reporting year

Portfolio coverage

Percentage calculated using data obtained from clients/investees

Emissions calculation methodology

The Global GHG Accounting and Reporting Standard for the Financial Industry

Please explain the details and assumptions used in your calculation

C-FS14.2

(C-FS14.2) Are you able to provide a breakdown of your organization’s portfolio impact?

	Portfolio breakdown	Please explain why you do not provide a breakdown of your portfolio impact
Row 1	Yes, by asset class Yes, by industry Yes, by country/area/region	<Not Applicable>

C-FS14.2a

(C-FS14.2a) Break down your organization's portfolio impact by asset class.

Asset class	Portfolio metric	Portfolio emissions or alternative metric
Investing: Listed Equity	Weighted average carbon intensity (tCO2e/Million revenue)	255
Investing: Listed Equity	Absolute portfolio emissions (tCO2e)	1391830
Investing: Listed Equity	Portfolio carbon footprint (tCO2e/Million invested)	89
Investing: Other, please specify (Fixed Income)	Weighted average carbon intensity (tCO2e/Million revenue)	788
Investing: Other, please specify (Fixed Income)	Absolute portfolio emissions (tCO2e)	27752878
Investing: Other, please specify (Fixed income)	Portfolio carbon footprint (tCO2e/Million invested)	258

C-FS14.2b

(C-FS14.2b) Break down your organization's portfolio impact by industry.

Portfolio	Industry	Portolio metric	Portfolio emissions or alternative metric
Investing (Asset owner)	Utilities	Absolute portfolio emissions (tCO2e)	16400000
Investing (Asset owner)	Energy	Absolute portfolio emissions (tCO2e)	3100000
Investing (Asset owner)	Materials	Absolute portfolio emissions (tCO2e)	2400000
Investing (Asset owner)	Other, please specify (Industrials)	Absolute portfolio emissions (tCO2e)	1200000
Investing (Asset owner)	Other, please specify (Consumer Goods)	Absolute portfolio emissions (tCO2e)	1700000
Investing (Asset owner)	Health Care Equipment & Services	Absolute portfolio emissions (tCO2e)	100000
Investing (Asset owner)	Diversified Financials	Absolute portfolio emissions (tCO2e)	3700000
Investing (Asset owner)	Other, please specify (IT)	Absolute portfolio emissions (tCO2e)	300000
Investing (Asset owner)	Real Estate	Absolute portfolio emissions (tCO2e)	100000
Investing (Asset owner)	Other, please specify (Communication services and other undefined sectors)	Absolute portfolio emissions (tCO2e)	200000

C-FS14.2c

(C-FS14.2c) Break down your organization's portfolio impact by country/area/region.

Portfolio	Country/area/region	Portfolio metric	Portfolio emissions or alternative metric
Investing (Asset owner)	North America	Absolute portfolio emissions (tCO2e)	19300000
Investing (Asset owner)	Other, please specify (Other)	Absolute portfolio emissions (tCO2e)	9500000

C-FS14.3

(C-FS14.3) Did your organization take any actions in the reporting year to align your portfolio with a 1.5°C world?

	Actions taken to align our portfolio with a 1.5°C world	Briefly explain the actions you have taken to align your portfolio with a 1.5-degree world	Please explain why you have not taken any action to align your portfolio with a 1.5°C world
Banking (Bank)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Investing (Asset manager)	Yes	Manulife Investment management actively engages with peers to better align our portfolios with a 1.5-degree world. For example, Manulife Investment management is a proponent of the CDP Science Based Targets Campaign, which encourages the world's largest and highest-impact companies from a carbon emissions standpoint to set science-based emissions reduction targets in line with a 1.5°C warming scenario. Another example highlighting our engagement efforts, we continue to engage with companies, to set emissions reductions targets, in line with the Paris Agreement. Our proxy voting activities generally support this goal by encouraging issuers to appropriately manage climate risk. Our climate focused products also largely strive to achieve alignment with this temperature goal (i.e., Manulife Climate Action strategies).	<Not Applicable>
Investing (Asset owner)	Yes	We have committed to a net zero General Account investment portfolio by 2050 and developed portfolio science-based targets in alignment with the SBTi methodology, covering over 42% of our portfolio. In 2023, we have published our decarbonization targets based on issuer's total value chain activities (scope 1, 2, & 3 emissions) and issuer's operational activities (scope 1 & 2 emissions). For details on our portfolio decarbonization targets, please see our 2022 ESG Report. As part of the science-based target-setting process, we have evaluated listed equities and bonds for alignment to the goals of the Paris Agreement, with a baseline portfolio temperature alignment score established. Further, we initiated an analysis of decarbonization trajectories of specific asset classes within our portfolio to inform the development of transition plans for the portfolio. We also initiated development of a carbon fundamentals training program for investment analysts and portfolio manager to equip them with the knowledge to understand issuers' climate targets and emissions.	<Not Applicable>
Insurance underwriting (Insurance company)	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-FS14.3a

(C-FS14.3a) Does your organization assess if your clients/investees' business strategies are aligned with a 1.5°C world?

	Assessment of alignment of clients/investees' strategies with a 1.5°C world	Please explain why you are not assessing if your clients/investees' business strategies are aligned with a 1.5°C world
Banking (Bank)	<Not Applicable>	<Not Applicable>
Investing (Asset manager)	Yes, for some	We harbor various scenario analysis data within our daily fixed income and global equity risk reports. These assess a 1.5°C world scenario (among others) under the AIM CGE model. We also assess some portfolios using the NGFS model.
Investing (Asset owner)	Yes, for some	By using SBTi-aligned data from a third-party data provider, we have evaluated listed equities and bonds for alignment to the goals of the Paris Agreement, with a baseline portfolio temperature alignment score established. Further, we initiated an analysis of decarbonization trajectories of specific asset classes within our portfolio to inform the development of transition plans for the portfolio. These help us assess our portfolio's alignment with a 1.5°C world.
Insurance underwriting (Insurance company)	<Not Applicable>	<Not Applicable>

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, executive management-level responsibility	Manulife's Executive Sustainability Council (ESC), consisting of our Global Chief Sustainability Officer (CSO) and nine members of our Executive Leadership Team (ELT), including our Chief Executive Officer (CEO), meets monthly and is responsible for establishing the enterprise's sustainability ambition, guiding the development and execution of the sustainability strategy, and providing recommendations and direction on matters related to ESG, including nature and biodiversity. Oversight for Manulife Investment Management Private Markets strategy including at the asset class level for Timberland and Agriculture, and Real Estate. This also applies to Manulife's General Account when material. Nature and biodiversity are two of several factors that may be incorporated in our assessment of overall environmental risks and opportunities as a component of the underwriting and monitoring of our investment portfolios. In our Environmental Risk Policy, we consider nature-related risks that could result in financial loss or reputational damage to the company as part of the enterprise-wide approach to managing environmental risks.	Risks and opportunities to our own operations Risks and opportunities to our investment activities The impact of our own operations on biodiversity The impact of our investing activities on biodiversity

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Commitment to Net Positive Gain Commitment to respect legally designated protected areas Commitment to avoidance of negative impacts on threatened and protected species Commitment to no conversion of High Conservation Value areas Other, please specify (1t.org)	SDG F4B – Finance for Biodiversity

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment
Yes

Value chain stage(s) covered
Direct operations
Portfolio activity

Portfolio activity
Investing portfolio (Asset manager)

Tools and methods to assess impacts and/or dependencies on biodiversity
Natural Capital Protocol
TNFD – Taskforce on Nature-related Financial Disclosures

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)
In 2022, our Timberland business worked with a leading global consultancy in environmental economics to pilot a natural capital accounting approach for our timberland investments. The approach entails construction of a natural capital asset register and materiality assessment, followed by valuation of natural capital assets and liabilities using a combination of internal company data and publicly available research. The approach culminates in a natural capital balance sheet and income statement, which together enable quantitative conclusions to be drawn about the extent to which a company is contributing to, or detracting from, the natural capital assets under its management, as well as the extent to which such contributions may positively or negatively impact both the asset owner and society in general. We analyzed two pilot properties in 2022 and in 2023 we plan to expand the approach across our timberland and agriculture portfolio.

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment
Yes

Value chain stage(s) covered
Direct operations

Portfolio activity
<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity
Natural Capital Protocol
TNFD – Taskforce on Nature-related Financial Disclosures

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)
In 2022, our Timberland business worked with a leading global consultancy in environmental economics to pilot a natural capital accounting approach for our timberland investments. The approach entails construction of a natural capital asset register and materiality assessment, followed by valuation of natural capital assets and liabilities using a combination of internal company data and publicly available research. The approach culminates in a natural capital balance sheet and income statement, which together enable quantitative conclusions to be drawn about the extent to which a company is contributing to, or detracting from, the natural capital assets under its management, as well as the extent to which such contributions may positively or negatively impact both the asset owner and society in general. We analyzed two pilot properties in 2022 and in 2023 we plan to expand the approach across our timberland and agriculture portfolio.

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year?
Yes

C15.4a

(C15.4a) Provide details of your organization's activities in the reporting year located in or near to biodiversity -sensitive areas.

Classification of biodiversity -sensitive area
Other biodiversity sensitive area, please specify (High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values)

Country/area
New Zealand

Name of the biodiversity-sensitive area
High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values are identified and carefully managed as part of forest certification requirements. In our asset management, we continue to manage 100% of our global forests to achieve independent third-party sustainability certification under the Sustainable Forestry Initiative® (SFI®) and/or Forest Stewardship Council® (FSC®).

Proximity
Overlap

Briefly describe your organization's activities in the reporting year located in or near to the selected area
MIM Timberland operations take place in numerous forest landscapes that contain or adjoin biodiversity sensitive areas such as remnant indigenous forests and wetlands, or habitat for rare, threatened, or endangered species. Forest management activities throughout the forest cycle include land preparation, planting, fertilizing, thinning, road and infrastructure construction, and harvesting. All activities are planned to avoid negative impacts to biodiversity sensitive areas.
In addition, MIM Timberland operations undertake restoration activities to enhance biodiversity sensitive areas. For example, extensive wetland restoration has been undertaken within our New Zealand estate.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity
Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area

Site selection
Project design
Scheduling
Physical controls
Operational controls
Abatement controls
Restoration
Biodiversity offsets

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented
There is the possibility for forest management activities to extend beyond the productive forest boundary and impact biodiversity sensitive areas. For this reason, all operations are planned with biodiversity sensitive areas clearly identified and management measures outlined. For example, when harvesting plantation trees adjacent to biodiversity sensitive areas harvesting crews make detailed plans for the direction of tree felling and extraction to avoid negatively impacting biodiversity. Another example is when re-establishing plantation forests after harvest, the replant boundary is often set back from biodiversity sensitive areas where this will improve the operational and biodiversity outcomes in the next rotation.

Classification of biodiversity -sensitive area
Other biodiversity sensitive area, please specify (High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values)

Country/area
Australia

Name of the biodiversity-sensitive area
High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values are identified and carefully managed as part of forest certification requirements. In our asset management, we continue to manage 100% of our global forests to achieve independent third-party sustainability certification under the Sustainable Forestry Initiative® (SFI®) and/or Forest Stewardship Council® (FSC®).

Proximity
Overlap

Briefly describe your organization's activities in the reporting year located in or near to the selected area
MIM Timberland operations take place in numerous forest landscapes that contain or adjoin biodiversity sensitive areas such as remnant indigenous forests and wetlands, or habitat for rare, threatened, or endangered species. Forest management activities throughout the forest cycle include land preparation, planting, fertilizing, thinning, road and infrastructure construction, and harvesting. All activities are planned to avoid negative impacts to biodiversity sensitive areas.
In addition, MIM Timberland operations undertake restoration activities to enhance biodiversity sensitive areas.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity
Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area
Site selection
Project design
Scheduling
Physical controls
Operational controls
Abatement controls
Restoration
Biodiversity offsets

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented
There is the possibility for forest management activities to extend beyond the productive forest boundary and impact biodiversity sensitive areas. For this reason, all operations are planned with biodiversity sensitive areas clearly identified and management measures outlined. For example, when harvesting plantation trees adjacent to biodiversity sensitive areas harvesting crews make detailed plans for the direction of tree felling and extraction to avoid negatively impacting biodiversity. Another example is when re-establishing plantation forests after harvest, the replant boundary is often set back from biodiversity sensitive areas where this will improve the operational and biodiversity outcomes in the next rotation.

Classification of biodiversity -sensitive area
Other biodiversity sensitive area, please specify (High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values)

Country/area
Brazil

Name of the biodiversity-sensitive area
High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values are identified and carefully managed as part of forest certification requirements. In our asset management, we continue to manage 100% of our global forests to achieve independent third-party sustainability certification under the Sustainable Forestry Initiative® (SFI®) and/or Forest Stewardship Council® (FSC®).

Proximity
Overlap

Briefly describe your organization's activities in the reporting year located in or near to the selected area
MIM Timberland operations take place in numerous forest landscapes that contain or adjoin biodiversity sensitive areas such as remnant indigenous forests and wetlands, or habitat for rare, threatened, or endangered species. Forest management activities throughout the forest cycle include land preparation, planting, fertilizing, thinning, road and infrastructure construction, and harvesting. All activities are planned to avoid negative impacts to biodiversity sensitive areas.
In addition, MIM Timberland operations undertake restoration activities to enhance biodiversity sensitive areas.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity
Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area
Site selection
Project design
Scheduling

Physical controls
Operational controls
Abatement controls
Restoration
Biodiversity offsets

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented
There is the possibility for forest management activities to extend beyond the productive forest boundary and impact biodiversity sensitive areas. For this reason, all operations are planned with biodiversity sensitive areas clearly identified and management measures outlined. For example, when harvesting plantation trees adjacent to biodiversity sensitive areas harvesting crews make detailed plans for the direction of tree felling and extraction to avoid negatively impacting biodiversity. Another example is when re-establishing plantation forests after harvest, the replant boundary is often set back from biodiversity sensitive areas where this will improve the operational and biodiversity outcomes in the next rotation.

Classification of biodiversity -sensitive area
Other biodiversity sensitive area, please specify (High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values)

Country/area
Canada

Name of the biodiversity-sensitive area
High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values are identified and carefully managed as part of forest certification requirements. In our asset management, we continue to manage 100% of our global forests to achieve independent third-party sustainability certification under the Sustainable Forestry Initiative® (SFI®) and/or Forest Stewardship Council® (FSC®).

Proximity
Overlap

Briefly describe your organization's activities in the reporting year located in or near to the selected area
MIM Timberland operations take place in numerous forest landscapes that contain or adjoin biodiversity sensitive areas such as remnant indigenous forests and wetlands, or habitat for rare, threatened, or endangered species. Forest management activities throughout the forest cycle include land preparation, planting, fertilizing, thinning, road and infrastructure construction, and harvesting. All activities are planned to avoid negative impacts to biodiversity sensitive areas.
In addition, MIM Timberland operations undertake restoration activities to enhance biodiversity sensitive areas.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity
Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area
Site selection
Project design
Scheduling
Physical controls
Operational controls
Abatement controls
Restoration
Biodiversity offsets

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented
There is the possibility for forest management activities to extend beyond the productive forest boundary and impact biodiversity sensitive areas. For this reason, all operations are planned with biodiversity sensitive areas clearly identified and management measures outlined. For example, when harvesting plantation trees adjacent to biodiversity sensitive areas harvesting crews make detailed plans for the direction of tree felling and extraction to avoid negatively impacting biodiversity. Another example is when re-establishing plantation forests after harvest, the replant boundary is often set back from biodiversity sensitive areas where this will improve the operational and biodiversity outcomes in the next rotation.

Classification of biodiversity -sensitive area
Other biodiversity sensitive area, please specify (High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values)

Country/area
Chile

Name of the biodiversity-sensitive area
High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values are identified and carefully managed as part of forest certification requirements. In our asset management, we continue to manage 100% of our global forests to achieve independent third-party sustainability certification under the Sustainable Forestry Initiative® (SFI®) and/or Forest Stewardship Council® (FSC®).

Proximity
Overlap

Briefly describe your organization's activities in the reporting year located in or near to the selected area
MIM Timberland operations take place in numerous forest landscapes that contain or adjoin biodiversity sensitive areas such as remnant indigenous forests and wetlands, or habitat for rare, threatened, or endangered species. Forest management activities throughout the forest cycle include land preparation, planting, fertilizing, thinning, road and infrastructure construction, and harvesting. All activities are planned to avoid negative impacts to biodiversity sensitive areas.
In addition, MIM Timberland operations undertake restoration activities to enhance biodiversity sensitive areas.

Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity
Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area
Site selection
Project design
Scheduling
Physical controls
Operational controls
Abatement controls

Restoration
Biodiversity offsets

Explain how your organization’s activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

There is the possibility for forest management activities to extend beyond the productive forest boundary and impact biodiversity sensitive areas. For this reason, all operations are planned with biodiversity sensitive areas clearly identified and management measures outlined. For example, when harvesting plantation trees adjacent to biodiversity sensitive areas harvesting crews make detailed plans for the direction of tree felling and extraction to avoid negatively impacting biodiversity. Another example is when re-establishing plantation forests after harvest, the replant boundary is often set back from biodiversity sensitive areas where this will improve the operational and biodiversity outcomes in the next rotation.

Classification of biodiversity -sensitive area

Other biodiversity sensitive area, please specify (High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values)

Country/area

United States of America

Name of the biodiversity-sensitive area

High Conservation Value Forests (HCVF) and areas of Significant Biodiversity Values are identified and carefully managed as part of forest certification requirements. In our asset management, we continue to manage 100% of our global forests to achieve independent third-party sustainability certification under the Sustainable Forestry Initiative® (SFI®) and/or Forest Stewardship Council® (FSC®).

Proximity

Overlap

Briefly describe your organization’s activities in the reporting year located in or near to the selected area

MIM Timberland operations take place in numerous forest landscapes that contain or adjoin biodiversity sensitive areas such as remnant indigenous forests and wetlands, or habitat for rare, threatened, or endangered species. Forest management activities throughout the forest cycle include land preparation, planting, fertilizing, thinning, road and infrastructure construction, and harvesting. All activities are planned to avoid negative impacts to biodiversity sensitive areas.
In addition, MIM Timberland operations undertake restoration activities to enhance biodiversity sensitive areas.

Indicate whether any of your organization’s activities located in or near to the selected area could negatively affect biodiversity

Yes, but mitigation measures have been implemented

Mitigation measures implemented within the selected area

Site selection
Project design
Scheduling
Physical controls
Operational controls
Abatement controls
Restoration
Biodiversity offsets

Explain how your organization’s activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

There is the possibility for forest management activities to extend beyond the productive forest boundary and impact biodiversity sensitive areas. For this reason, all operations are planned with biodiversity sensitive areas clearly identified and management measures outlined. For example, when harvesting plantation trees adjacent to biodiversity sensitive areas harvesting crews make detailed plans for the direction of tree felling and extraction to avoid negatively impacting biodiversity. Another example is when re-establishing plantation forests after harvest, the replant boundary is often set back from biodiversity sensitive areas where this will improve the operational and biodiversity outcomes in the next rotation.

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management Education & awareness Law & policy

C15.6

(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	Yes, we use indicators	Other, please specify (Acres protected by our Sensitive Lands Program, % of forest with a conservation designation, % of farms that have regenerative practices, % of farmland third party certified as sustainably managed, forest with biodiversity assessment, etc)

C15.7

(C15.7) Have you published information about your organization’s response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity Details on biodiversity indicators Influence on public policy and lobbying Risks and opportunities Biodiversity strategy	MFC_ESGR_2022_EN.pdf nature-statement-mim (4).pdf MIM-Stewardship-Report-EN (2).pdf

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Financial Officer (CFO), Manulife	Chief Financial Officer (CFO)

FW-FS1.1

(FW-FS1.1) Is there board-level oversight of forests- and/or water-related issues within your organization?

Forests	No, and we do not plan to in the next two years	The CGNC and Board Risk Committee oversee risks where and when they are material, including climate and nature risk. At this time, water and forest related risks specifically are not material to our business at the corporate level and are managed primarily within our Global Wealth and Asset Management business – where they are material to the activities of each business area.
Water	No, and we do not plan to in the next two years	The CGNC and Board Risk Committee oversee risks where and when they are material, including climate and nature risk. At this time, water and forest related risks specifically are not material to our business at the corporate level and are managed primarily within our Global Wealth and Asset Management business – where they are material to the activities of each business area.

FW-FS1.1c

(FW-FS1.1c) Does your organization have at least one board member with competence on forests- and/or water-related issues?

Forests

Board member(s) have competence on this issue area

Not assessed

Criteria used to assess competence of board member(s) on this issue area

<Not Applicable>

Primary reason for no board-level competence on this issue area

Important but not an immediate priority

Explain why your organization does not have at least one board member with competence on this issue area and any plans to address this in the future

Oversight of our ESG framework is part of the mandate of our Board of Directors' Corporate Governance and Nominating Committee (CGNC). To support the Board's role in overseeing Manulife ESG's framework, experience in and understanding of ESG matters are considered essential characteristics. Directors are expected to have a knowledge and understanding of ESG issues relevant to and based on their respective experiences in their professional careers or as a corporate director. In addition to considering appropriate ESG experience possessed by potential director, directors gain ESG experience through ongoing education sessions and reports on ESG strategy, trends, risks and opportunities and all directors are encouraged to attend sessions on ESG matters at meetings of the CGNC. The CGNC reviews the progress made on our sustainability strategy and stays informed of ESG trends, risks and opportunities through management reporting. Members of the CGNC include the Chairman of the Board and six independent Board members. The CGNC reviews and guides progress on our Climate Action Plan (i.e. target setting, performance) which includes related goals linked to executive compensation, as well as the review and approval of our TCFD disclosure. The Board's Risk Committee also considers climate-related risks and opportunities through the ongoing monitoring and reporting of emerging risks.

Water

Board member(s) have competence on this issue area

Not assessed

Criteria used to assess competence of board member(s) on this issue area

<Not Applicable>

Primary reason for no board-level competence on this issue area

Important but not an immediate priority

Explain why your organization does not have at least one board member with competence on this issue area and any plans to address this in the future

Oversight of our ESG framework is part of the mandate of our Board of Directors' Corporate Governance and Nominating Committee (CGNC). To support the Board's role in overseeing Manulife ESG's framework, experience in and understanding of ESG matters are considered essential characteristics. Directors are expected to have a knowledge and understanding of ESG issues relevant to and based on their respective experiences in their professional careers or as a corporate director. In addition to considering appropriate ESG experience possessed by potential director, directors gain ESG experience through ongoing education sessions and reports on ESG strategy, trends, risks and opportunities and all directors are encouraged to attend sessions on ESG matters at meetings of the CGNC. The CGNC reviews the progress made on our sustainability strategy and stays informed of ESG trends, risks and opportunities through management reporting. Members of the CGNC include the Chairman of the Board and six independent Board members. The CGNC reviews and guides progress on our Climate Action Plan (i.e. target setting, performance) which includes related goals linked to executive compensation, as well as the review and approval of our TCFD disclosure. The Board's Risk Committee also considers climate-related risks and opportunities through the ongoing monitoring and reporting of emerging risks.

FW-FS1.2

(FW-FS1.2) Provide the highest management-level position(s) or committee(s) with responsibility for forests- and/or water-related issues.

Position or committee
Chief Investment Officer (CIO)

Issue area(s)
Forests
Water

Forests- and/or water-related responsibilities of this position
Assessing forests- and/or water-related risks and opportunities
Managing forests- and/or water-related risks and opportunities

Coverage of responsibilities
Risks and opportunities related to our investing (asset management) activities

Reporting line
CEO reporting line

Frequency of reporting to the board on forests- and/or water-related issues via this reporting line
As important matters arise

Please explain
Manulife's Chief Investment Officer has oversight of the assessment of our portfolio's exposure to forest and water-related risks and opportunities when they are considered material to
our investment processes . However, it is not a systemic part of our process for all investments.

FW-FS2.1

(FW-FS2.1) Do you assess your portfolio's exposure to forests- and/or water-related risks and opportunities?

	We assess our portfolio's exposure to this issue area	Explain why your portfolio's exposure is not assessed for this issue area and any plans to address this in the future
Banking – Forests exposure	<Not Applicable>	<Not Applicable>
Banking – Water exposure	<Not Applicable>	<Not Applicable>
Investing (Asset manager) – Forests exposure	Yes	<Not Applicable>
Investing (Asset manager) – Water exposure	Yes	<Not Applicable>
Investing (Asset owner) – Forests exposure	No, but we plan to within the next two years	Our General Account assess our portfolio's exposure to forest and water-related risks and opportunities when they are considered material to our investment process. However, it is not a systemic part of our process for all investments. In 2023, Manulife's General Account will undergo a biodiversity risk assessment that will cover exposure to select risks in forests and water in our portfolio.
Investing (Asset owner) – Water exposure	No, but we plan to within the next two years	Our General Account assess our portfolio's exposure to forest and water-related risks and opportunities when they are considered material to our investment process. However, it is not a systemic part of our process for all investments. In 2023, Manulife's General Account will undergo a biodiversity risk assessment that will cover exposure to select risks in forests and water in our portfolio.
Insurance underwriting – Forests exposure	<Not Applicable>	<Not Applicable>
Insurance underwriting – Water exposure	<Not Applicable>	<Not Applicable>

FW-FS2.1a

(FW-FS2.1a) Describe how you assess your portfolio's exposure to forests- and/or water-related risks and opportunities.

Investing (Asset manager) – Forests exposure

Type of risk management process
Integrated into multi-disciplinary company-wide risk management process

Proportion of portfolio covered by risk management process
100

Type of assessment
Qualitative and quantitative

Time horizon(s) covered
Short-term
Medium-term
Long-term

Tools and methods used
External consultants
Global Forests Watch Pro
Internal tools/methods
Risk models
Scenario analysis
WRI Aqueduct

% of clients/investees (by number) exposed to substantive risk
0

% of clients/investees (by portfolio exposure) exposed to substantive risk
0

Provide the rationale for implementing this process to assess your portfolio's exposure to forests- and/or water-related risks and opportunities
Our timberland and agriculture businesses follow a strict deforestation policy and conduct investment due diligence to ensure that assets we invest in are not associated with deforestation. The process we follow is documented in our Timberland and Agriculture Sustainable Investing Framework.

Investing (Asset manager) – Water exposure

Type of risk management process
Integrated into multi-disciplinary company-wide risk management process

Proportion of portfolio covered by risk management process
100

Type of assessment
Qualitative and quantitative

Time horizon(s) covered
Short-term
Medium-term
Long-term

Tools and methods used
External consultants
Internal tools/methods
Risk models
Scenario analysis
WRI Aqueduct

% of clients/investees (by number) exposed to substantive risk
0

% of clients/investees (by portfolio exposure) exposed to substantive risk
0

Provide the rationale for implementing this process to assess your portfolio's exposure to forests- and/or water-related risks and opportunities
Our timberland and agriculture businesses create value through the sustainable management of natural resource investments. Our guiding principle is that good stewardship is good business. As managers of major forest and agricultural holdings throughout the world, we create value through our stewardship of people and the environment. We're stewards of our employees and their families, contractors with whom we work, and the communities in which we operate. We're also stewards of the environment— the water, soil, air, plants, and animals entrusted to our care. We seek to manage farmland and timberland to maintain and enhance their ecological health and productivity well into the future.

FW-FS2.2

(FW-FS2.2) Does your organization consider forests- and/or water-related information about clients/investees as part of its due diligence and/or risk assessment process?

	We consider forests- and/or water-related information	Explain why information related to this issue area is not considered and any plans to address this in the future
Banking – Forests-related information	<Not Applicable>	<Not Applicable>
Banking – Water-related information	<Not Applicable>	<Not Applicable>
Investing (Asset manager) – Forests-related information	Yes	<Not Applicable>
Investing (Asset manager) – Water-related information	Yes	<Not Applicable>
Investing (Asset owner) – Forests-related information	No, but we plan to do so within the next two years	We assess forest and water-related information about clients only when it is material to our due diligence and risk assessment process.
Investing (Asset owner) – Water-related information	No, but we plan to do so within the next two years	We assess forest and water-related information about clients only when it is material to our due diligence and risk assessment process.
Insurance underwriting – Forests-related information	<Not Applicable>	<Not Applicable>
Insurance underwriting – Water-related information	<Not Applicable>	<Not Applicable>

FW-FS2.2a

(FW-FS2.2a) Indicate the forests- and/or water-related information your organization considers about clients/investees as part of your due diligence and/or risk assessment process, and how this influences decision making.

	Type of information considered	Process through which information is obtained	Industry sector(s) covered by due diligence and/or risk assessment process	State how these forests- and/or water-related information influences your decision making
Banking – Forests-related information	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Banking – Water-related information	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Investing (Asset manager) – Forests-related information	Scope and content of forests policy Commitment to eliminate deforestation/conversion of other natural ecosystems Forests risk commodity volumes Certification of forests risk commodities Proportion of forest risk commodity volumes in compliance with no deforestation/conversion Traceability of forest risk commodities Origin of forest risk commodities	Directly from the client/investee From an intermediary or business partner Data provider Public data sources	Energy Materials Capital Goods Commercial & Professional Services Consumer Durables & Apparel Food & Staples Retailing Food, Beverage & Tobacco Household & Personal Products Semiconductors & Semiconductor Equipment Real Estate Other, please specify (Forestry and Sovereigns)	We may consider any one of these issues when evaluating forest-related risks of issuers. We evaluate the materiality of sustainability issues at the sector, industry and issuer level. Where we find forest-related risk material, our assessment helps inform our engagement with companies and our proxy voting decisions. They are an element in our Sustainability toolkit.
Investing (Asset manager) – Water-related information	Scope and content of water policy Water withdrawal and/or consumption volumes Water withdrawn from water stressed areas Water discharge treatment data Breaches to local water regulations Impingements on the human right to water in communities Access to WASH in the workplace	Directly from the client/investee From an intermediary or business partner Data provider Public data sources	Energy Materials Consumer Durables & Apparel Consumer Services Food & Staples Retailing Food, Beverage & Tobacco Household & Personal Products Semiconductors & Semiconductor Equipment Utilities Real Estate	We may consider any one of these issues when evaluating water-related risks of issuers. We evaluate the materiality of sustainability issues at the sector, industry and issuer level. Where we find water-related risks material, our assessment helps inform our engagement with companies and proxy voting decisions. They are an element in our Sustainability toolkit.
Investing (Asset owner) – Forests-related information	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Investing (Asset owner) – Water-related information	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insurance underwriting – Forests-related information	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insurance underwriting – Water-related information	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

FW-FS2.3

(FW-FS2.3) Have you identified any inherent forests- and/or water-related risks in your portfolio with the potential to have a substantive financial or strategic impact on your business?

	Risks identified for this issue area	Primary reason why your organization has not identified any substantive risks for this issue area	Explain why your organization has not identified any substantive risks for this issue area
Forests	No	Risks exist, but none with the potential to have a substantive financial or strategic impact on business	Risks exist, but none with the potential to have a substantive financial or strategic impact on business.
Water	Yes	<Not Applicable>	<Not Applicable>

FW-FS2.3a

(FW-FS2.3a) Provide details of forests- and/or water-related risks in your portfolio with the potential to have a substantive financial or strategic impact on your business.

Identifier
Risk1

Portfolio where risk driver occurs
Investing (Asset manager) portfolio

Issue area risk relates to
Water

Risk type & Primary risk driver

Current regulation	Other, please specify (Water stress)

Primary potential financial impact
Increased indirect (operating) costs

Risk type mapped to traditional financial services industry risk classification
Operational risk

Company-specific description
Manulife Investment Management Timberland and Agriculture has several agriculture properties in the San Joaquin Valley in California, a region that has suffered from sustained drought. To mitigate this risk, we are exploring the fallowing of fields alongside our current use of water recharge methods where possible and broad use of water efficiency technologies.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure - minimum (currency)
<Not Applicable>

Potential financial impact figure - maximum (currency)
<Not Applicable>

Explanation of financial impact figure

Cost of response to risk

Description of response and explanation of cost calculation

Comment

FW-FS2.4

(FW-FS2.4) Have you identified any inherent forests- and/or water-related opportunities in your portfolio with the potential to have a substantive financial or strategic impact on your business?

	Opportunities identified for this issue area	Primary reason why your organization has not identified any substantive opportunities for this issue area	Explain why your organization has not identified any substantive opportunities for this issue area
Forests	Yes	<Not Applicable>	<Not Applicable>
Water	No	Evaluation in process	Evaluation in process.

FW-FS2.4a

(FW-FS2.4a) Provide details of forests- and/or water-related opportunities in your portfolio with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Portfolio where opportunity occurs
Investing (Asset manager) portfolio

Issue area opportunity relates to
Forests

Opportunity type & Primary opportunity driver

Products and services	Other, please specify (The development of new revenue streams from new/emerging environmental markets and products)

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company- specific description
Manulife Investment Management Timber and Agriculture has developed an opportunity that supports the preservation of trees in exchange for carbon credits. The Forest Climate Strategy will invest in timberlands for the purpose of sequestering carbon alongside sustainable management of timberlands.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
500000000

Potential financial impact figure - minimum (currency)
<Not Applicable>

Potential financial impact figure - maximum (currency)
<Not Applicable>

Explanation of financial impact figure
$500 million investment product.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation
Unquantifiable and incorporated into ordinary business.

Comment

FW-FS3.1

(FW-FS3.1) Do you take forests- and/or water-related risks and opportunities into consideration in your organization's strategy and/or financial planning?

Forests

Risks and opportunities related to this issue area taken into consideration in strategy and/or financial planning

Yes, we take these risks and opportunities into consideration in the organization's strategy and financial planning

Description of influence on organization's strategy including own commitments

Our timberland and agriculture businesses exist to create value through the sustainable management of natural resource investments. We seek to limit the impacts of climate change by responsibly using and managing land, creating carbon sequestration opportunities with our forests and farms and mitigating climate change through investing in renewables and energy efficiency. Forest-related risks and opportunities have influenced our sustainability strategy including priority areas for engagement, joining industry groups, setting external commitments and product development

In the forests and farms Manulife Investment Management manages, we operate in a way that responsibly manages land and protects sensitive lands and biodiversity through stewardship practices. Manulife Investment management is signatory to the Finance for Biodiversity Pledge and have an engagement campaign focused on deforestation risks.

Our General Account invests $6.8 billion in sustainably managed forests and farmlands through Manulife Investment Management Timberland and Agriculture.

Financial planning elements that have been influenced

Revenues

Capital allocation

Description of influence on financial planning

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 (SFI) and the Forest Stewardship Council (FSC), and in agriculture this includes Leading Harvest and others (for example: Global GAP, USDA GAP, Lodi, SAI-FSA). As of year-end 2021, 100% of our forests were certified under either SFI or FSC, and 100% of our U.S. farmland was certified under Leading Harvest. We continue to grow our certified sustainable farmland acreage, with the goal of 100% certification of eligible properties under the Leading Harvest Farmland Management Standard globally.

Explain why forests- and/or water-related risks and opportunities have not influenced your strategy and/or financial planning

<Not Applicable>

Water

Risks and opportunities related to this issue area taken into consideration in strategy and/or financial planning

Yes, we take these risks and opportunities into consideration in the organization's strategy and financial planning

Description of influence on organization's strategy including own commitments

We create strategic value through our sustainable management of forests and farms. Protecting and improving watersheds is vital for the ecosystems and communities that depend on them. We protect sensitive lands, seek adherence to strict water and land management policies and best practices and support forest growth. Forest-related risks and opportunities have influenced our sustainability strategy including priority areas for engagement, joining industry groups, setting external commitments and product development. Manulife Investment Management joined Ceres's Valuing Water Finance Initiative.

Financial planning elements that have been influenced

Capital allocation

Description of influence on financial planning

Sustainable investments at Manulife, including green investment categories (defined by Manulife Sustainable Bond Framework) and social investments from our General Account and private third-party assets, have invested over $0.7 billion in the private debt financing of water recycling and purification businesses.

Explain why forests- and/or water-related risks and opportunities have not influenced your strategy and/or financial planning

<Not Applicable>

FW-FS3.2

(FW-FS3.2) Has your organization conducted any scenario analysis to identify forests- and/or water-related outcomes?

Forests

Scenario analysis conducted to identify outcomes for this issue area
Yes, we have conducted scenario analysis, but we have not identified any outcomes for this issue area

Type of scenario analysis used
Climate-related

Parameters, assumptions, analytical choices
<Not Applicable>

Description of outcomes for this issue area
<Not Applicable>

Explain how the outcomes identified using scenario analysis have influenced your strategy
<Not Applicable>

Explain why your organization has not conducted scenario analysis for this issue area and any plans to address this in the future
<Not Applicable>

Water

Scenario analysis conducted to identify outcomes for this issue area
Yes, we have conducted scenario analysis, but we have not identified any outcomes for this issue area

Type of scenario analysis used
Climate-related

Parameters, assumptions, analytical choices
<Not Applicable>

Description of outcomes for this issue area
<Not Applicable>

Explain how the outcomes identified using scenario analysis have influenced your strategy
<Not Applicable>

Explain why your organization has not conducted scenario analysis for this issue area and any plans to address this in the future
<Not Applicable>

FW-FS3.3

(FW-FS3.3) Has your organization set targets for deforestation free and/or water secure lending, investing and/or insuring?

	Targets set	Explain why your organization has not set targets for deforestation free and/or water secure lending, investing and/or insuring and any plans to address this in the future
Forests	Yes	<Not Applicable>
Water Security	No, but we plan to set targets within the next two years	Evaluation in process.

FW-FS3.3a

(FW-FS3.3a) Provide details of your targets for deforestation free and/or water secure lending, investing and/or insuring.

Portfolio
Investing (Asset manager)

Issue area(s) the target covers
Forests

Targets set
Targets for deforestation free/water secure investments

Sectors covered by the target
Other, please specify (Natural assets)

Target metric
% of your portfolio value

Target value (as %)
100

Target value
<Not Applicable>

Target year
2023

% of target achieved
100

Provide details of the target
Manulife Investment Management is committed to halting global deforestation and will not engage in deforestation or purchase land on which deforestation has occurred. For more information see our Timberland and Agriculture Deforestation Policy. For additional information regarding Manulife Investment Management's ESG investment capabilities for institutional investors only, please visit www.manulifeim.institutional/sustainability.

FW-FS3.4

(FW-FS3.4) Do any of your existing products and services enable clients to mitigate deforestation and/or water insecurity?

	Existing products and services that enable clients to mitigate deforestation and/or water insecurity	Explain why your organization does not offer products and services which enable clients to mitigate deforestation and/or water insecurity and any plans to address this in the future
Forests	No, but we plan to address this within the next two years	We are working on a Nature and Biodiversity Statement for Manulife Investment Management, and we have released a Nature Statement.
Water	No, but we plan to address this within the next two years	We are working on a Nature and Biodiversity Statement for Manulife Investment Management, and we have released a Nature Statement.

FW-FS3.5

(FW-FS3.5) Does the policy framework for the portfolio activities of your organization include forests- and/or water-related requirements that clients/investees need to meet?

	Policy framework includes this issue area	Explain why your organization does not include this issue area in the policy framework and any plans to address this in the future
Forests	No, but we plan to include this issue area within the next two years	We manage assets sustainably on behalf of our clients and engage with them on forestry and water-related issues when appropriate.
Water	No, but we plan to include this issue area within the next two years	We manage assets sustainably on behalf of our clients and engage with them on forestry and water-related issues when appropriate.

FW-FS4.1

(FW-FS4.1) Do you engage with your clients/investees on forests- and/or water-related issues?

	We engage with clients/investees on this issue area	Explain why you do not engage with your clients/investees on the issue area and any plans to address this in the future
Clients – Forests	No, but we plan to within the next two years	Manulife engages with clients on forests-related issues only when material to the process. It is not a formal part of broad investment process.
Clients – Water	No, but we plan to within the next two years	Manulife engages with clients on water-related issues only when material to the process. It is not a formal part of broad investment process.
Investees – Forests	Yes	<Not Applicable>
Investees – Water	Yes	<Not Applicable>

FW-FS4.1b

(FW-FS4.1b) Give details of your forests- and/or water-related engagement strategy with your investees.

Issue area this engagement relates to
Forests

Type of engagement
Education/information sharing

Details of engagement
Engage with investees on measuring exposure to forests-related risk

Investing (asset manager) portfolio coverage of engagement
100

Investing (asset owner) portfolio coverage of engagement

Rationale for the coverage of your engagement
Non-targeted engagement

Impact of engagement, including measures of success
We are unable to measure this; however, we view increasing investor interest in carbon and water to be evidence of the success of our engagement.
We educate our clients around the importance of forest, and educational materials are available to all.

Issue area this engagement relates to
Water

Type of engagement
Education/information sharing

Details of engagement
Engage with investees on measuring exposure to water-related risk

Investing (asset manager) portfolio coverage of engagement
100

Investing (asset owner) portfolio coverage of engagement

Rationale for the coverage of your engagement
Non-targeted engagement

Impact of engagement, including measures of success
We are unable to measure this; however, we view increasing investor interest in carbon and water to be evidence of the success of our engagement.
We educate our clients around the importance of accurately understanding water risks for agricultural investing. Educational materials are available to all.

FW-FS4.2

(FW-FS4.2) Does your organization exercise its voting rights as a shareholder on forests- and/or water-related issues?

	We exercise voting rights as a shareholder on this issue area	Issues supported in shareholder resolutions	Give details of the impact your voting has had on this issue area	Explain why your organization does not exercise voting rights on this issue area and any plans to address this in the future
Forests	Yes	Halting deforestation	We anticipate that over time our voting on these items will result in better disclosure that will allow us to assess, and engage on, progress.	<Not Applicable>
Water	Yes	Reduce water pollution	Manulife Investment Management anticipates that over time our voting on these items will result in better disclosure that will allow us to assess, and engage on, progress.	<Not Applicable>

FW-FS4.4

(FW-FS4.4) Does your organization engage in activities that could directly or indirectly influence policy, law, or regulation that may impact forests and/or water security?

	External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact this issue area	Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact this issue area	Explain why you do not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact this issue area
Forests	Yes, we fund organizations or individuals whose activities could influence policy, law, or regulation that may impact this issue area	<Not Applicable>	<Not Applicable>
Water	Yes, we fund organizations or individuals whose activities could influence policy, law, or regulation that may impact this issue area	<Not Applicable>	<Not Applicable>

FW-FS5.1

(FW-FS5.1) Does your organization measure its portfolio impact on forests and/or water security?

	We measure our portfolio impact on this issue area	Explain how your organization measures its portfolio impact on this issue area, including any metrics used to quantify impact	Primary reason for not measuring portfolio impact on this issue area	Explain why your organization does not measure its portfolio impact on this issue area and any plans to change this in the future
Banking – Impact on Forests	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Banking – Impact on Water	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Investing (Asset manager) – Impact on Forests	Yes	We adhere to sector-specific sustainability standards for forestry and agriculture, including but not limited to the Sustainable Forestry Initiative (SFI), Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC), and Leading Harvest Farmland Management Standard. All of these standards require demonstration of adherence to their principles, which include practices to promote forest health. 100% of forests we manage globally are certified to independent third-party sustainability standards, as are 100% of the farmland assets we manage in the United States.	<Not Applicable>	<Not Applicable>
Investing (Asset manager) – Impact on Water	Yes	We adhere to sector-specific sustainability standards for forestry and agriculture, including but not limited to the Sustainable Forestry Initiative (SFI), Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC), and Leading Harvest Farmland Management Standard. All of these standards require demonstration of adherence to their principles, which include practices to promote water quality. 100% of forests we manage globally are certified to independent third-party sustainability standards, as are 100% of the farmland assets we manage in the United States.	<Not Applicable>	<Not Applicable>
Investing (Asset owner) – Impact on Forests	No, but we plan to in the next two years	<Not Applicable>	Please select	
Investing (Asset owner) – Impact on Water	No, and we don't plan to in the next two years	<Not Applicable>	Please select	
Insurance underwriting – Impact on Forests	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insurance underwriting – Impact on Water	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

FW-FS5.2

(FW-FS5.2) Does your organization provide finance or insurance to companies operating in any stages of the following forest risk commodity supply chains, and are you able to report on the amount of finance/insurance provided?

	Finance or insurance provided to companies operating in the supply chain for this commodity	Amount of finance/insurance provided will be reported	Explain why your organization is unable to report on the amount of finance/insurance provided for this commodity
Lending to companies operating in the timber products supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Lending to companies operating in the palm oil products supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Lending to companies operating in the cattle products supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Lending to companies operating in the soy supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Lending to companies operating in the rubber supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Lending to companies operating in the cocoa supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Lending to companies operating in the coffee supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Investing (asset manager) to companies operating in the timber products supply chain	Yes	No, and we do not plan to assess our portfolio’s exposure in the next two years	We are unable to report on the amount due to a lack of data from issuers.
Investing (asset manager) to companies operating in the palm oil products supply chain	Yes	No, and we do not plan to assess our portfolio’s exposure in the next two years	We are unable to report on the amount due to a lack of data from issuers.
Investing (asset manager) to companies operating in the cattle products supply chain	Yes	No, and we do not plan to assess our portfolio’s exposure in the next two years	We are unable to report on the amount due to a lack of data from issuers.
Investing (asset manager) to companies operating in the soy supply chain	Yes	No, and we do not plan to assess our portfolio’s exposure in the next two years	We are unable to report on the amount due to a lack of data from issuers.
Investing (asset manager) to companies operating in the rubber supply chain	Yes	No, and we do not plan to assess our portfolio’s exposure in the next two years	We are unable to report on the amount due to a lack of data from issuers.
Investing (asset manager) to companies operating in the cocoa supply chain	Yes	No, and we do not plan to assess our portfolio’s exposure in the next two years	We are unable to report on the amount due to a lack of data from issuers.
Investing (asset manager) to companies operating in the coffee supply chain	Yes	No, and we do not plan to assess our portfolio’s exposure in the next two years	We are unable to report on the amount due to a lack of data from issuers.
Investing (asset owner) to companies operating in the timber products supply chain	Yes	No, and we do not plan to assess our portfolio’s exposure in the next two years	We are unable to report on the amount due to a lack of data from issuers.
Investing (asset owner) to companies operating in the palm oil products supply chain	No	<Not Applicable>	<Not Applicable>
Investing (asset owner) to companies operating in the cattle products supply chain	No	<Not Applicable>	<Not Applicable>
Investing (asset owner) to companies operating in the soy supply chain	No	<Not Applicable>	<Not Applicable>
Investing (asset owner) to companies operating in the rubber supply chain	No	<Not Applicable>	<Not Applicable>
Investing (asset owner) to companies operating in the cocoa supply chain	No	<Not Applicable>	<Not Applicable>
Investing (asset owner) to companies operating in the coffee supply chain	No	<Not Applicable>	<Not Applicable>
Insuring companies operating in the timber products supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insuring companies operating in the palm oil products supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insuring companies operating in the cattle products supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insuring companies operating in the soy supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insuring companies operating in the rubber supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insuring companies operating in the cocoa supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>
Insuring companies operating in the coffee supply chain	<Not Applicable>	<Not Applicable>	<Not Applicable>

FW-FS6.1

(FW-FS6.1) Have you published information about your organization's response to forests- and/or water-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Focus of the Publication
Forests

Publication
In mainstream reports

Status
Complete

Attach the document
MFC_ESGR_2022_EN.pdf
nature-statement-mim (4).pdf

Page/Section reference
2022 ESG Report: pages 44-45.
Nature Statement: pages1-7.

Content elements
Strategy

Comment

Focus of the Publication
Water Security

Publication
In mainstream reports

Status
Complete

Attach the document
MFC_ESGR_2022_EN.pdf
nature-statement-mim (4).pdf

Page/Section reference
2022 ESG Report: pages 44-45.
Nature Statement: pages1-7.

Content elements
Strategy

Comment

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In which language are you submitting your response?
English

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