Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

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

Manulife Financial Corporation is a leading international financial services provider that helps people make their decisions easier and lives better. With 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. At the end of 2021, we had more than 38,000 employees, over 119,000 agents, and thousands of distribution partners, serving over 33 million customers. Our principal operations are in Asia, Canada, and the US, where we have served customers for more than 160 years. We trade as 'MFC' on the Toronto, New York, and the Philippine stock exchanges and under '945' in Hong Kong. In 2021, we made CAD$32.7 billion in payments to our customers.

In 2021, we shared the initial phase of our Climate Action Plan, a long-term commitment to reducing our environmental footprint, supporting the transition to a net zero future, and investing in climate change mitigation and resilience. While we are already net zero on Scope 1 and 2 emissions, we will pursue our objective to reduce our absolute Scope 1 and 2 emissions by 35% by 2035, and we have committed to net zero financed emissions by 2050 with short-term science-based targets to be established. We also added goals linked to our Climate Action Plan into executive performance and compensation to ensure leaders across our business are engaged in this work.

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. Policies and practices covered in this submission pertaining to Manulife Investment Management refer to its internal asset management capabilities and do not cover sub-advised strategies by other investment managers.
- Corporate and Other – comprised of 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.

Businesses within Manulife Investment Management to highlight:

- Timberland and Agriculture – specialized 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 6 million acres of forest and farmland, with approximately US$15.3 billion in assets under management as of March 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 over these.

We also highlight Manulife's General Account (GA), which supports the operations of our Asia, Canada, and US 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 are a market leader in financing renewable energy and energy efficiency projects. As of December 31, 2021, C$44.9 billion or 11% 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.

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C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1, 2021	December 31, 2021	Yes	2 years

C0.3

(C0.3) Select the countries/areas in which you operate.

Australia
Barbados
Bermuda
Brazil
Cambodia
Canada
Chile
China
Germany
Hong Kong SAR, China
India
Indonesia
Ireland
Japan
Malaysia
Myanmar
New Zealand
Philippines

Singapore
Switzerland
Taiwan, China
Thailand
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		
Investing (Asset manager)	Yes		Exposed to all broad market sectors
Investing (Asset owner)	Yes		Exposed to all broad market sectors

Insurance underwriting (Insurance company)	Yes	Life and/or Health	

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(s)	Please explain
Board-level committee	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 reporting. Members of the CGNC include the Chair of the Board and six independent Board members. Board members also receive ongoing education through presentations and information packages about emerging issues and topics relevant to our business and operations and the regulatory environment to enhance their knowledge and understanding of ESG matters. An example

	of a climate-related matter considered by this committee within the last two years include: review and guide progress on our Climate Action Plan (I.e. target setting, performance) which includes the approval of related goals linked to executive compensation. In addition, the Board's Risk Committee oversees the management of our principal risks and our programs and procedures to manage those risks. The Board's Risk Committee also considers climate-related risks and opportunities through the ongoing monitoring and reporting of emerging risks. The Audit Committee oversees the external auditors, internal control over financial reporting and our finance, actuarial, internal audit and global compliance functions, serves as the conduct review committee, and reviews our compliance with legal and regulatory requirements. The committee reviews and approves Manulife's Management Discussion and Analysis which includes our approach to environmental, social and governance risk (TCFD disclosure). We included both pandemic and climate stress scenarios in our annual Financial Condition Testing (FCT) overseen by the Board and reported to OSFI.

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	Reviewing and guiding strategy Reviewing and guiding major plans of action	Climate-related risks and opportunities to our own operations Climate-related risks and opportunities to	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 reporting. Members of the CGNC include the Chair of the Board and six independent Board members. The CGNC reviews and guides progress on

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	Reviewing and guiding risk management policies Monitoring and overseeing progress against goals and targets for addressing climate-related issues	our investment activities The impact of our own operations on the climate The impact of our investing activities on the climate	our Impact Agenda, Climate Action Plan (i.e. target setting, performance) which includes related goals linked to executive compensation, and reviews the Company's annual ESG Report which includes environmental data. The Board's Risk Committee also considers climate-related risks and opportunities through the ongoing monitoring and reporting of emerging risks. The Board's Audit Committee reviews and approves Manulife's Management Discussion and Analysis which includes our approach to environmental risk (TCFD disclosure).

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
Row 1	Yes	Directors are expected to have a significant 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. To support the board's role in overseeing Manulife's ESG framework, experience in and an understanding of ESG matters are considered essential characteristics for a member of the board.

C1.2

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

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the

				board on climate-related issues
Chief Executive Officer (CEO)	Reports to the board directly	Both assessing and managing climate-related risks and opportunities	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	More frequently than quarterly
Chief Financial Officer (CFO)	CEO reporting line	Both assessing and managing climate-related risks and opportunities	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	More frequently than quarterly
Chief Risks Officer (CRO)	CEO reporting line	Both assessing and managing climate-related risks and opportunities	Risks and opportunities related to our banking	More frequently than quarterly

			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	
Chief Operating Officer (COO)	CEO reporting line	Both assessing and managing climate-related risks and opportunities	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	More frequently than quarterly
Chief Sustainability Officer (CSO)	Corporate Sustainability/CSR reporting line	Both assessing and managing climate-related risks and opportunities	Risks and opportunities related to our investing activities Risks and opportunities related	More frequently than quarterly

			to our insurance underwriting activities Risks and opportunities related to our own operations	
Other, please specify Executive Sustainability Council (ESC): Members are: Chief Financial Officer, Chief Risk Officer, Chief Investment Officer, General Counsel, Chief Marketing Officer, President and CEO of Global Wealth and Asset Management.	CEO reporting line	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.	Risks and opportunities related to our banking 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	More frequently than quarterly

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	Members of the Executive Leadership Team currently have performance goals linked to Manulife's Climate Action Plan, diversity, equity, and inclusion, employee engagement, and leadership accountability within the strategic

		initiatives area. 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	Type of incentive	Activity incentivized	Comment
Other, please specify Real Estate Asset Manager	Monetary reward	Energy reduction target Other (please specify) Water and waste reduction targets	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 (ESG) 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.
Corporate executive team	Monetary reward	Emissions reduction project Emissions reduction target	Executives have performance goals linked to ESG metrics such as diversity, equity, and inclusion (DEI), employee engagement, and leadership accountability. In 2021, goals linked to Manulife's Climate Action Plan were added to the executive leadership team performance goals.
Chief Sustainability Officer (CSO)	Monetary reward	Emissions reduction target Energy reduction project Company performance against a climate-related sustainability index	The Chief Sustainability Officer has performance goals linked to Manulife's ESG strategy, including the Climate Action Plan.

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
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.

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 20+ 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 parameters of the Prudential Regulatory Authority. The tests confirmed 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 lays a foundation for the management of environmental risks and opportunities within our business activities. 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. While we only pursue risks we can appropriately analyze and monitor, 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.

Governance - The Board's CGNC oversees matters related to climate change as part of the oversight of the Manulife 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. The Manulife 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.

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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

The minimum requirements for identification and assessment of climate-related risks are communicated through an Environmental Risk Policy, which sets out an enterprise-wide framework for the management of environmental risks within our business activities. ESG Guidelines for the General Account assets and MIM's ESG Engagement Policy cover climate change risk factors in investment decision-making. For example, MIM's public markets team directly engages some of the world's largest emitters on climate-related risks and opportunities, as well as through the collaborative industry program Climate Action 100+. In addition, there is a Manulife Investment Management Responsible Investing approach that integrates ESG considerations and the General Account has a set of ESG guidelines that seek to do the same for the assets we own.

Governance - The Board's CGNC oversees matters related to climate change as part of the oversight of the Manulife 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. The Manulife 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.

Corporate: Manulife considers a climate-related risk and opportunities to be financially substantive if it has a material impact on our financial position or our ability to operate. These impacts may be direct or indirect and may include business losses or disruption resulting from extreme weather conditions; the impact of changes in legal or regulatory framework made to address climate change; or increased mortality or morbidity resulting from environmental damage or climate change. Management of material climate-related issues for our real assets is carried out at the

Business Unit (BU) level. Systems for risk identification, assessment and management are built into existing policies and procedures and are specific to the asset (e.g. oil and gas, real estate, forestry, agriculture etc.). BU Sustainability leads report on environmental issues, including issues related to climate change. Examples: Manulife Investment Management's Real Estate arm: Real Estate considers climate and natural hazard risks during its acquisition due diligence process. 3rd 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 Engineering and Technical Services team assesses portfolio-level CC risks and opportunities and tracks and benchmarks energy and GHG emissions. As building owners and managers, we minimize our environmental footprint by systematically investing in resource efficiency and embedding conservation practices throughout our operations. 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. This form specifically asks if there are any climate related risks identified during the due diligence process. We have set five-year targets for energy, water and waste and a long-term greenhouse gas emissions target for 2040 that aligns with national and international greenhouse gas emission reduction commitments. 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. Manulife Investment Management's Agriculture and Timber 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 Agriculture and Timber group's CFO uses quarterly risk registry updates to assess climate-related risks and opportunities; whereas the Agriculture and Timber group's COO uses those registries to manage related risks.

Value chain stage(s) covered

Upstream

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

We review and assess climate-related upstream risks through engagements with partners at many stages in our relationship. As a global financial services company, we rely on goods and services such as paper, data centres, and travel to carry out our work and integrate climate-related risk into our procurement decisions. Manulife includes ESG-related questions, including questions on climate change, in Requests For Proposals (RFPs) as part of our overall vendor management and engagement processes. We also provide training to our category managers on the evaluation of vendors on ESG-related aspects, including types of responses deemed acceptable from suppliers participating in a RFP. For example, we include questions around climate change targets and performance, including Scope 1–3 GHG emissions. We actively conduct engagement sessions with key suppliers to identify sustainability issues on which we can collaborate.

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 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 some of the world's largest emitters on climate-related risks and opportunities, as well as through the collaborative industry program Climate Action 100+. In addition, there is a Manulife Investment Management Responsible Investing approach that integrates ESG considerations. Manulife Investment Management Real Estate considers climate and natural hazard risks during its acquisition due diligence process. 3rd 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 Engineering and Technical Services team assesses portfolio-level CC risks and opportunities and tracks and benchmarks energy and GHG emissions. As building owners and managers, we seek to minimize our environmental footprint by systematically investing in resource efficiency and embedding conservation practices throughout our operations. 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. This form specifically asks if there are any climate related risks identified during the due diligence process. We have set five-year targets for energy, water and waste and a long-term greenhouse gas emissions target for 2040 that aligns with national and international greenhouse gas emission reduction commitments. 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. Manulife Investment Management's Agriculture and Timber 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 Agriculture and Timber group's CFO uses quarterly risk registry updates to assess climate-related risks and opportunities; whereas the Agriculture and Timber group's COO uses those registries to manage related risks.

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. 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 Legal and 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 that we own assets.
Emerging 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. Examples: 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 Agriculture and Timber closely monitors carbon regulation and markets to be prepared to offer solutions to investors in the event of increased or more widespread carbon prices. In 2020, we performed a series of climate change stress tests to gain insight into the impact of climate-related risks on our investment portfolios and to inform capital management. In 2020, this included the Prudential Regulation Authority Scenario A climate stress test that models the immediate and sudden impact of disorderly economic

		transition to constraining the rise in temperature to less than +2°C. Having stressed the General Account assets with market value shocks ranging from +15% to -65% for various industrial sub-sectors, our capital levels remained well above the minimum regulatory capital requirements. 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.
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. Manulife Corporate and our business units are always assessing the risks associated with new technologies in the market. Examples include in our utilities investment team considers 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. Examples: We consistently monitor the potential of legal actions or shareholder proposals/resolutions regarding our management of climate change risks.

Market	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/guidelines provide enterprise-wide protocols for managing environmental risks, incl. climate change. Business units are responsible for observing protocols and exercising due diligence to identify and manage environmental risks in accordance with these policies. Examples: Manulife Investment Management Real Estate has a Sustainable Real Estate Framework to supplement the Manulife Investment Management'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 demands. 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. Manulife Investment Management 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.
Reputation	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. 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 works in tandem with our Investor Relations, Brand Marketing, Regulatory and Public Affairs groups to monitor emerging reputational risks associated with such sustainability factors. Examples: Manulife Investment Management's Agriculture and Timber 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. 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 Agriculture and Timber group considers wildfire risk in its timberland acquisition due diligence.
Chronic 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

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		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. 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
Investing (Asset manager)	Yes
Investing (Asset owner)	Yes
Insurance underwriting (Insurance company)	Yes

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
Investing (Asset manager)	Integrated into multi-disciplinary company-wide risk management process	60	Qualitative and quantitative	Short-term Medium-term Long-term	The Transition Pathway Initiative (TPI) Portfolio temperature alignment Scenario analysis Internal tools/methods External consultants	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. These impacts will manifest as risks and opportunities for almost all companies in all industries and therefore must be properly assessed by investors in order to safeguard clients' assets. To understand the impact of climate change on investment decisions, asset managers should assess the transition risk, physical risk, and opportunities posed by climate change to the companies in which they are invested. We recognize that climate change could have an economic impact, which will vary from company to company. The varying degree will depend on the exposure level of each sector, industry, and geography. We believe that the understanding of climate change across the capital markets remains varied, leading to potential mispricing of assets, and that many companies may be inadequately prepared to respond to the risks and opportunities of this transition.

						Our goal to achieve attractive risk-adjusted returns remains consistent as we aspire to integrate environmental, social, and governance factors, including climate related factors, throughout our due diligence and investment decision-making processes. Our integration process focuses on defining climate risks and opportunities at the asset level, factoring in the differences between industries, geographies, and operating models, with the objective of ensuring portfolio resiliency over the long term. In some asset classes, we seek opportunities to leverage growth potential derived from the climate transition. As climate science is evolving, so too is our approach to integrate climate-related considerations into the investment process. Our approach is informed by industry initiatives, available information, and the understanding that perfect data is nonexistent. Some of these considerations include: • We aim to develop differentiated analytical techniques to assess climate-related risks and opportunities both in public and private markets consistent with the types of assets and the ownership and operating structures across asset classes

						• We are gradually incorporating transition and physical risk data to assess climate risks and opportunities. We look to leverage third-party data and tools that assist in identification of regions or industries highly exposed to climate-related risks and assess the alignment of these exposures with our business strategy • As science evolves and different tools and resources are developed, continuous education of our investment teams is a cornerstone of our approach to climate change. We also strive for ongoing dialogue and content dissemination for our investors to keep them informed with the latest facts/understandings • We recognize the value of scenario analysis as a tool to assess a potential range of future outcomes and impacts associated with climate change. When appropriate data and tools become available, we are committed to running climate scenario analysis for all asset classes. As a component of fundamental analysis, we will review scenario analysis completed by companies we invest in or for individual assets if available; otherwise, we will encourage companies to complete the beneficial exercise of scenario analysis The effectiveness of these activities relies on the quality and availability of data from companies, managers, and assets. We endorse the TCFD

						recommendations and we believe that a wider adoption of this framework will enhance our ability to provide a reasonable assessment of investment risks. We recognize that the transition to a low-carbon economy creates investment opportunities and we embrace changes to technologies, protocols, and financial instruments arising from efforts to achieve carbon neutrality. Our investment teams look to identify opportunities to invest and engage in low-carbon solutions, including renewable energy, certified sustainable real estate , natural climate solutions, global carbon markets, and green bonds. Our Timberland and Agriculture business takes a customized approach to understanding climate risks and opportunities in the land sector. This includes reviewing geography-specific scientific projections of the impacts of climate change, as well as interviewing key operations staff about how they are mitigating and adapting to climate change. In our infrastructure and private equity and credit businesses we have begun to assess the climate risk of our investments due to the potential downside risk associated with climate change. 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 risk when material. Post investment, we monitor climate related metrics across our portfolio, have measured emissions, and further assess any climate risk or opportunities.
Investing (Asset owner)	Integrated into multi-disciplinary company-wide risk management process	86	Qualitative and quantitative	Short-term Medium-term Long-term	Scenario analysis Internal tools/methods	Manulife has undertaken, and will continue to implement, various processes to enable climate change risks assessments within its investment portfolio. An assessment of the overall carbon emissions of our investment portfolio is in progress. This assessment utilizes third party data sources and internal models to assist in the calculation of these measures. In addition, Manulife is currently undergoing an assessment of higher-risk sectors within the portfolio to assist in setting decarbonization targets, with an expectation that an assessment of the Power/Utilities sector will be completed in 2022, with Oil & Gas and other higher-emitting sectors following. As it relates to climate risks 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, etc.) Additionally, in 2020, the Corporate Finance group created 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	2	Qualitative and quantitative	Short-term Medium-term Long-term	Internal tools/methods	We continue to enhance underwriting practices, and in 2021 by integrating climate risk as a key factor into how we classify foreign countries and included climate risk as part of how we establish risk parameters for our Geographic Concentration of Risk Policy. This was a company-wide initiative with increased climate-related impacts through a series of presentations and learning sessions by risk committees and internal SMEs. We are also constantly exploring new ways in which we can further integrate climate risk into critical illness analysis. With respect to the approximate portfolio coverage provided, our businesses are required to follow corporate standards and policies, and therefore would apply to all new business issued to foreign

						residents starting in 2020, and group life sales starting at the end of 2021.

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
Investing (Asset manager)	Yes
Investing (Asset owner)	Yes

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
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

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

Energy
Utilities
Real Estate

State how this climate-related information influences your decision-making

Manulife's General Account has established a formalized ESG assessment framework for each investment across our portfolio. This assessment includes a comprehensive review of a given entity's current emissions profile, GHG reduction targets and an analysis of risks/opportunities related to the energy transition. Ultimately, an ESG Impact Score is assigned to each investment, on a 1 – 5 scale. The score for a given investment is compared to a baseline score for each sector, with justification for why a score is higher/lower than the relevant sector baseline.

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

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

Our teams actively engage with company management to assess a company's exposure — and potentially help enhance its resiliency — to different types of ESG risks. This insight can help shape the teams' modeling and define sensitivities around their estimates of fair value.

Our public markets sustainable investing team developed models and tools to assess the potential impact on our business of the four Intergovernmental Panel on Climate Change (IPCC) scenarios. The climate-related risks identified in the climate VaR metric are now integrated into our investment decision-making and risk management processes. ESG information is included in our daily risk reporting and portfolio analysis reports for our public asset classes. These are complemented by regular discussions with our risk team regarding emerging risks alongside regular risk reviews with all our investment teams 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.

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 is documented in our investment memorandum's and is 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

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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 temperature (air, freshwater, marine water)

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

Operational risk

Company-specific description

Flooding can cause asset damage, downtime, and incurred costs through insurance premiums and deductibles. Flooding may affect our ability to obtain insurance in vulnerable markets. 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). 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) through our insurance program. In addition, our insurance program includes physical risk and probable loss assessments for flooding and earthquakes on a three-year rolling cycle across all properties. In addition, we launched two new proprietary building standards in our real estate portfolio: 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. 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.

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Manulife Investment Management Real Estate has not assessed the scale of this risk in financial terms, but we expect disruptions caused by extreme temperatures to have minimal impact on financial returns given the distributed nature of Real Estate's operations and the business continuity plans already in place for such events. Real Estate has already equipped properties with generation capacity to provide electricity during black-outs. Both at the time of the acquisition, and on a rolling review basis, we identify flood risk, and prepare flood plans. These are conducted both by our Technical Services team, and our insurance provider.

Cost of response to risk

5,000,000

Description of response and explanation of cost calculation

Most properties have a business continuity plan to respond to supply disruptions. We also view improved energy efficiency as a method to manage the risk of extraordinary energy costs during periods of high electricity demand. Energy is tracked at all properties that pay for utilities. Annual performance at all properties is examined and reported internally by our energy management provider, Solution105. The cost to develop and implement business continuity plans and flood plans is low, and mainly relates to internal employee training costs. With respect to energy costs, the extraordinary costs related to extreme weather in the real estate portfolio are estimated at $5 million per year. Our insurance team reviews portfolio flood exposure annually to understand insurance implications. Properties have regular site assessment completed by our insurer, which include recommendations for protection measures. 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 where 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.

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)

4,800,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

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The Canadian Tax Journal estimates that a $50 per tonne Carbon tax would mean a 30% price increase in natural gas and a 13% price increase in electricity. This would translate to additional costs of $4.8 million for all Canadian operations by 2022. Other regions, such as California, would also see proportionally similar costs.

Cost of response to risk

0

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. There is no additional cost for managing this risk. It is part of Manulife Real Estate's Operations and Engineering and Technical Services group mandate.

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 reduction target of 80% by 2050.* The working group, which has representation from our real estate, engineering and technical services, asset management and sustainability teams, is responsible for overseeing property-specific carbon reduction plans and the rollout of portfolio GHG management plan. It 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.

* 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 (footnote)

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 a operational and strategic risk.

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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 response to this risk is absorbed in our regular business activities.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Investing (Asset manager) portfolio

Risk type & Primary climate-related risk driver

Emerging regulation

Other, please specify

Regulation and supervision of water-related risk in the agriculture sector

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

Operational risk

Company-specific description

Emerging regulation in some water-scarce agricultural regions has the potential to affect investment performance. For us, water stewardship is important everywhere, but it’s critical in California’s Central Valley and in most of Australia. For Manulife Investment Management Timberland and Agriculture, this means we use water judiciously, and we also put excess water back into the ground in order to help restore our aquifers. For example, after acquiring one of our California orchards in 2010, we discovered that an area to the northwest of the orchard was experiencing a high degree of subsidence (sinking) due to groundwater depletion. Over the following years, we fallowed some of that orchard in order to store excess flood water, providing more consistent access to clean water for us and a source of aquifer recharge for other watershed users. By 2020, the subsidence rate had declined from 12 inches per year to less than 1 inch per year as a direct result of our management activities.

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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

The cost of response 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

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.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Unknown

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

1,000,000,000

Explanation of financial impact figure

Investment product being launched. Financial impact contingent on market demand.

Cost to realize opportunity

1,000,000

Strategy to realize opportunity and explanation of cost calculation

The potential cost involved with the launch of investment product.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Investing (Asset manager) portfolio

Opportunity type
Resilience

Primary climate-related opportunity driver
Increased reliability, climate- resilience of investment chain

Primary potential financial impact
Increased portfolio value due to upward revaluation of assets

Company-specific description
We conduct scenario analysis 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 believe this builds resilience into our portfolios and for all our stakeholders, from our employees to our clients and the communities in which we operate. This is because our understanding of climate risks, future pathways, and transition opportunities equips us to properly act as stewards of our assets under management. Accordingly, we engage with regulators and policymakers, civil society, investee companies, and our peers in financial markets to address climate change systemically. Activities include:

• Proxy voting in support of shareholder proposals encouraging issuers to address climate risk (e.g. voted FOR 84% of proposals requesting climate disclosure/action in 2021).
• Engagement with issuers on climate risk (e.g. GHG emissions was the most discussed topic in 2021)
• Engagement with regulators (e.g. we responded to the SEC's general request for comments regarding a (then potential) rule regarding climate disclosure.
• Participation as lead in collaborative engagement initiatives including Climate Action 100+, Climate Engagement Canada and the Asia Investor Group on Climate Change.
• New fund offerings including the Climate Action Fund which focuses on transition opportunities and best practitioners regarding climate risk.
• Integration of climate data into our investment processes (e.g. Climate Value at Risk data in our daily portfolio risk reports using 1.5 degree, 2 degree and 3 degree scenarios).

For more information review our Stewardship Report, SRI Report and/or Climate-related Financial Disclosure report available here: https://www.manulifeim.com/institutional/us/en/sustainability

Time horizon

Long-term

Likelihood

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The impact has not yet been quantified financially.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

This is incorporated into our risk analysis and there is no additional cost to realize opportunity. For example, in 2019, we began evaluating physical climate change risks to our properties by piloting a climate value at risk model and contributing to a scenario analysis and guidance report. This was completed as part of the UNEP FI leadership group. Building on this momentum, in 2020 we conducted our own portfolio-wide risk study. Drawing on third-party data that combines both historical data and forward-looking climate model outputs, we evaluated seven distinct risks: floods, extreme windstorms, wildfire, sea-level rise, drought, heat stress, and earthquakes. This allowed us to produce

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comprehensive risk exposure profiles out to 2040. Assessing both our physical climate risks and resilience aligns us with the recommendations of the TCFD. More important, it helps us manage long-term risk—the right thing for a responsible building owner and manager to do.

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

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 a 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.

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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. A study commissioned by the US Department of Energy (DOE) found that, in 2018, estimated rental premia were generally around 5% for LEED and Energy Star certifications, but in some cases ranged up to 20%. More recently, the KTH Royal Institute of Technology released a report in 2022, estimating that rental prices could go up to 23% for certified buildings as well as noticing that the willingness to pay a premium is connected to a higher productivity level in sustainable buildings. Numerous other benefits have been identified, including lower rent concessions, higher occupancy and lower operating costs.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

Energy efficiency investment and green building certification is 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 2021, Manulife had 52.4 million square feet certified to LEED, BOMA BEST or Energy Star. Sustainability best-practice 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 best-in-class 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 2021, Manulife's real estate portfolio reduced its energy usage by 32,126 kWh, equivalent to the energy required to power 1,200 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

C3. Business Strategy

C3.1

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

Row 1

Transition plan

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

Explain why your organization does not have a transition plan that aligns with a 1.5°C world and any plans to develop one in the future

We have committed to the Business Ambition for 1.5°C, recognizing the importance of aligning our emissions trajectories with the latest science — and are working to validate our targets in line with the criteria and recommendations of the Science Based Targets initiative .

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
Row 1	Yes, qualitative and quantitative

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		Our general account investment team conducts climate scenario analysis and evaluates the total fund's carbon emission profile. We continue to engage with our regulators on scenario analysis in our General Account. Launched in 2020, we 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. The results inform OSFI's approach and tools for stress testing Canadian financial institutions. The scenarios entail very conservative assumptions about the evolution of green technologies and do not capture potential disruptive technology impacts or opportunities. The scenarios excludes physical risks. 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 4.5	Portfolio		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.
Physical climate scenarios RCP 8.5	Portfolio		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.

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?

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. Over the past two years, 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. In addition, we 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.
Manulife Investment Management 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, North America agriculture, Australia/Victoria timberland, Australia/Queensland timberland, Australia agriculture, New Zealand timberland and South America timberland and agriculture. In addition, in 2019 Manulife Investment Management Real Estate began evaluating physical climate change risks to our properties by piloting a "climate value at risk" model. We also contributed to a scenario analysis and guidance report produced as part of our membership in UNEP FI's real estate TCFD pilot project. Our underwriting focuses on insurance policies in place, asset location, and vulnerability to extreme weather events.

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	We acknowledge the risks and opportunities associated with climate change and the transition to a lower-carbon economy, and we are actively incorporating climate change considerations into our

		decision making, including how we develop and offer financial products and services. We are accelerating the pace of innovation around developing products that both solve customer needs and help create a more sustainable future. For example, we continue to grow our offerings of dedicated sustainable investing strategies, including natura-based solutions to climate change; and we are encouraging the adoption of sustainable business practices in public markets, promoting action that enables sustainable long-term growth and reduces the potential impact of material sustainability risks over time. We also contribute to a growing body of knowledge on the impact of climate change on human health, strengthening our ability to respond to client needs. 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. Across our asset management business, we made improvements to ESG integration, reporting and monitoring in 2021, which incorporates climate-related factors. We also launched dedicated climate-related strategies in support of our clients
Supply chain and/or value chain	Yes	Climate-related risks and opportunities have influenced Manulife’s supply chain/value chain strategies. For example, we have integrated these risks and opportunities into our procurement decisions by including ESG-related questions in our vendor selection processes (including Requests for Proposal, or “RFP”), including climate change, as part of our overall vendor management and engagement processes. 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 and green leases — however, we continue to prioritize addressing our most significant value chain footprint through our investment.

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. 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 2021, research and analysis conducted considered the impact of climate change on extreme weather events, and increased temperatures on morbidity and/or mortality, including aspects such as mental health, cardiovascular and respiratory diseases. This research and data inform underwriting, as it relates to impact of physical climate change to morbidity and mortality. We additionally contributed to continued scaling of work by the Geneva Association to identify the role that insurers and other stakeholders can play to help mitigate and adapt to a changing climate and environment.
Operations	Yes	Our effort to combat climate change is embedded across our business strategy. We are taking steps to becoming a net zero company though our operations, which involve real estate, timberland and agriculture investment property operations and day-to-day business activities across Manulife's business segments. We are actively incorporating climate change considerations into our decision making, including how we manage our operations and how we make investment decisions. We take action to minimize our operational footprint to lessen our environmental impact and reduce operating costs — helping prepare our business for a sustainable path forward. We continue to take action to reduce our footprint by, for example, making substantial investments in high quality, natural climate solutions; and by working to reduce our absolute Scope 1 and 2 emissions 35% by 2035, taking steps to operate more efficiently through measures such as fuel switching and energy retrofits. We have also committed to the Business Ambition for 1.5°C, recognizing the importance of aligning our emissions

		trajectories with the latest science — and are working to validate our targets in line with the criteria and recommendations of the SBTi.

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 Capital expenditures Capital allocation Acquisitions and divestments Access to capital	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). The majority 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. At Manulife Investment Management, the climate-related risks and opportunities that we identify are integrated into our investment process and managed in our business strategy and planning. In our integration process, 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 too does our approach. 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 firsthand 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

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		go beyond buy and sell decisions to include engagement focused on climate action and active stewardship in our investment process. Manulife Investment Management's real estate group has developed a model of estimates of GHG reduction, capital cost, incremental life cycle cost, and GHG abatement cost (i.e. $/tCO2e). Furthermore, we have improved our ESG data inputs for the GHG model and the regulatory reporting is improving our data coverage and quality. Improving our portfolio GHG emissions helps assess the carbon footprint of new acquisitions. Therefore, we have updated our Investment ESG due diligence process to take climate change into account. At select properties, capital projects, such as installation of battery storage and electric vehicle charging stations increase capital expenditures. Ideally, these items are either offset by savings from energy efficiency or help to increase tenant satisfaction and decrease vacancy. Further, we are integrating climate mitigation and adaptation into our property management Sustainable Building Standards. In Manulife Investment Management Real Estate group, the financial impacts of climate change on this asset class 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 Agriculture and Timberland 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. Corporate: We raise capital on an ongoing basis and have issued several green bonds over the past few years. We are the first global life insurer to issue green bonds. As at March 31, 2022, Manulife's total green bond issuance to date is over $2 billion. The estimated annual environmental benefit from our first two issuances ($1B) was over 240,000 tons of avoided carbon dioxide emissions. Furthermore, our Credit Risk Management group has performed climate change stress testing across our General Account's investments in industrial sub-sectors which included value shocks ranging from +15% to –65% over a five-year time horizon. In all scenarios, capital levels remained well above regulatory minimums.

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?

Yes, our policies include climate-related requirements that clients/investees need to meet

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

Sustainable/Responsible Investment Policy

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

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Exceptions to policy based on

Explain how 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 GA 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.

C-FS3.6c

(C-FS3.6c) Why does the policy framework for your portfolio activities not include climate-related requirements for clients/investees, and/or exclusion policies?

Manulife's General Account maintains formalized ESG Guidelines which require elevated approval from numerous senior executives in order to facilitate investment in certain sectors. The policy is not exclusionary by nature, but intends to facilitate dialogue around potential opportunities in sensitive sectors. The General Account's ESG Guidelines were updated in July 2021 to primarily identify those sectors that require greater scrutiny from the Credit Committee. These sectors represent sensitive areas and in which the General Account has very limited or no existing exposure, including cannabis, military weapons, non-military weapons, thermal coal and tobacco.

For Manulife Investment Management's private markets Infrastructure portfolio we acknowledge the risks and opportunities associated with climate change and the transition to a low-carbon economy. Our infrastructure investment team is an active participant in the energy transition in the United States, with investments in industries such as solar, wind, and battery storage. We believe these and other renewable energy assets are the key components of a low-carbon electricity system. For natural gas-fired plants, our infrastructure team looks at a few opportunities where these plants are integrated or have the potential to be integrated with the broader renewable energy strategy in the region to help provide system stability for the intermittency of wind and solar power. Natural gas has been the principal driver in the United States for the decreased dependence on coal-fired energy generation.

The investment team has and will continue to consider investment opportunities in utilities that are working to transition to a low-carbon economy. This may include utilities that have plans to retire their legacy-owned coal-fired power stations as part of an energy transition strategy. In line with our views on energy transition, our infrastructure team no longer evaluates investments in individual coal-fired power plants. In addition, we believe there are increasing economic and environmental risks to coal-fired assets.

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
Row 1	Yes

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

Year target was set

2021

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Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Base year

2019

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

102,739

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

193,776

Base year Scope 3 emissions covered by target (metric tons CO2e)

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

296,515

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 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

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 (%)

35

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

192,734.75

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

162,749

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

124,076

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

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

286,825

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

9.3370366712

Target status in reporting year

Underway

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Is this a science-based target?

Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

Target ambition

Well-below 2°C aligned

Please explain target coverage and identify any exclusions

This target is company-wide and covers 100% of both our Scope 1 and 2 emissions.

Plan for achieving target, and progress made to the end of the reporting year

We are working to reduce our absolute Scope 1 and 2 emissions 35% by 2035, taking active steps to operate more efficiently through measures such as fuel switching and energy retrofits. We are taking steps in our real estate business such as enhanced efficiency measures, fuel switching, and use of onsite renewables in our buildings.

To ensure this target has a meaningful impact, we have committed to the Science Based Targets initiative, to guide and validate our target setting, measurement and progress reporting.

List the emissions reduction initiatives which contributed most to achieving this target

C4.1b

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

Target reference number

Int 1

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)

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 (metric tons CO2e per unit of activity)

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

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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 (in all Scope 3 categories) covered by this Scope 3 intensity figure

% 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)

0.77

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

2.26

Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)

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

3.03

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

405.8823529412

Target status in reporting year

Achieved

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

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

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

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)

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 (metric tons CO2e per unit of activity)

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 (in all Scope 3 categories) covered by this Scope 3 intensity figure

% 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)

0.77

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

2.26

Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)

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

3.03

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

49.25

Target status in reporting year

Underway

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

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.

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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

C-FS4.1d

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

Target reference number

Por1

Year target was set

2,021

Portfolio

Investing (Asset owner)

Product type/Asset class/Line of business

All asset classes

Sectors covered by the target

All sectors

Portfolio coverage of target

100

Target type

Other, please specify

Manulife is in the process of setting short-term Science Based Targets to support achievement of our long-term net-zero by 2050 financed emissions target. Manulife is exploring both temperature and sector decarbonization options per SBTi guidance.

Target type: Absolute or intensity

Absolute

Scopes included in temperature alignment

Metric (or target numerator if intensity)

Other, please specify

Manulife is in the process of setting short-term Science Based Targets to support achievement of our long-term net-zero by 2050 financed emissions target. Manulife is exploring both temperature and sector decarbonization options per SBTi guidance.

Target denominator

Base year

2,020

Figure in base year

38,300,000

Percentage of portfolio emissions covered by the target

73

Interim target year

Figure in interim target year

Target year

2,050

Figure in target year

0

Figure in reporting year

38,300,000

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

0

Aggregation weighting used

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

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

INTERNAL

Target status in reporting year

New

Is this a science-based target?

Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science-based target initiative in the next two years

Target ambition

Well-below 2°C aligned

Please explain target coverage and identify any exclusions

The net-zero financed emissions standard has not yet been released by SBTi; therefore, we are unable to provide detailed target information. Manulife is setting interim short-term targets, in alignment with SBTi requirements that will span 5-15 years from date of target validation. We will cover all required asset classes and aligned with portfolio coverage requirements from SBTi.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Net-zero target(s)

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number

NZ1

Target coverage

Investing (Asset owner)

Absolute/intensity emission target(s) linked to this net-zero target

Not applicable

Target year for achieving net zero

2050

Is this a science-based target?

Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next 2 years

Please explain target coverage and identify any exclusions

We are committed to steering our investment portfolio to be net zero by 2050. To drive our journey, we are taking a sector-based approach, focusing first on the heavy emitting industries, such as power generation, and we will establish near-term emissions reduction targets. Manulife has committed to the Science Based Targets initiative, which will guide target setting, measurement, and progress reporting.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?

Yes

Planned milestones and/or near-term investments for neutralization at target year

We have begun actively evaluating the climate-related implications of every new investment. The General Account has implemented a comprehensive ESG evaluation for all new transactions and existing investments which detail the investee's existing emissions profile, future ambitions, and a range of other factors to derive a proprietary internal ESG Impact Score. This score is a critical input to determining our participation in a given transaction and importantly, leads to implications on pricing, tenor and hold size.

Planned actions to mitigate emissions beyond your value chain (optional)

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	16	49.1
To be implemented*	9	24.6
Implementation commenced*	7	7.5
Implemented*	87	14,636.9
Not to be implemented	11	38.2

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

Other, please specify

Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)

14,335

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)

185,359

Payback period

No payback

Estimated lifetime of the initiative

<1 year

Comment

Manulife Investment Management Real Estate purchased renewable energy for 18 buildings in 2021. A total of 45,763 MWh of renewable energy was purchased

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Initiative category & Initiative type

Energy efficiency in buildings

Building Energy Management Systems (BEMS)

Estimated annual CO2e savings (metric tonnes CO2e)

30.9

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)

5,700

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

15,200

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings

Building Energy Management Systems (BEMS)

Estimated annual CO2e savings (metric tonnes CO2e)

11.6

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

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

5,068

INTERNAL

Investment required (unit currency – as specified in C0.4)
5,520

Payback period
1-3 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)
213

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)
654,318

Investment required (unit currency – as specified in C0.4)
4,010,209

INTERNAL

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings

Motors and drives

Estimated annual CO2e savings (metric tonnes CO2e)

2.1

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)

13,700

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

166,000

Payback period

11-15 years

Estimated lifetime of the initiative

11-15 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings

Motors and drives

Estimated annual CO2e savings (metric tonnes CO2e)

7.7

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

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

7,056

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

18,000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings

Heating, Ventilation and Air Conditioning (HVAC)

Estimated annual CO2e savings (metric tonnes CO2e)

20.1

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)

132,917

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

2,908,620

Payback period

21-25 years

Estimated lifetime of the initiative

21-30 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings

Other, please specify

Controls

Estimated annual CO2e savings (metric tonnes CO2e)

2.2

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)

12,993

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

1,701

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

INTERNAL

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. Retrofits, building upgrades, retrocommissioning 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.
Dedicated budget for other emissions reduction activities	Manulife Investment Management Real Estate's select properties and regions have a dedicated budget for purchasing renewable energy credits. A total of 18 buildings purchased renewable energy in 2021, and 45,763 MWh of renewable energy was purchased.
Employee engagement	Real Estate provides tools and training to investment, 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. More broadly, the Manulife Investment Management ESG 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 ESG integration 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 ESG 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 and waste reporting and disclosure in the jurisdictions that 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 13 sustainability focus areas, of which 4 can be directly linked to mitigating climate impacts.

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)

19,623,405,523

% of total portfolio value

94

INTERNAL

Type of activity financed/insured or provided

Carbon removal
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?

Yes, a divestment

Name of organization(s) acquired, divested from, or merged with

Divested from NAL Resources

Details of structural change(s), including completion dates

NAL Resources was a wholly owned Manulife subsidiary and was sold with a completion date of January 4, 2021, which previously represented the majority of our energy use and emissions.

INTERNAL

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	Yes, a change in boundary No, but we have discovered significant errors in our previous response(s)	The divestiture of NAL Resources, a wholly owned subsidiary of Manulife which was sold on January 4, 2021, triggered re-baselining of 2019 and 2020 data. The re-baselining activity identified material errors in our 2020 response associated with misallocation of emissions in Scope 1 in Timber and Agriculture operations as well as misallocation of emissions in Scope 1 and 2 for leased office space where Manulife did not have operational control. Total company Scope 1 emissions were 143,194 tCO2e in 2020 (revised from 66,523 tCO2e, with the exclusion of NAL Resources). Scope 3 emissions from “contractor fuel use” were 159,617 tCO2e in 2020 (revised from 236,370 tCO2e).

C5.1c

(C5.1c) Have your organization’s base year emissions been recalculated as result of the changes or errors reported in C5.1a and C5.1b?

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	Yes	MFC follows the guidelines in Chapter 5: Tracking Emissions Over Time of the Greenhouse Gas Protocol for adjusting the base year GHG inventory. The base year inventory is adjusted on an annual basis, even if considered insignificant. Annual re-statement of base year emissions will include the following: • In the case of a merger or acquisition, the emissions from the entity/source and/or assets of the acquired entity will be added to the base year inventory. Base year emissions for acquired entities/sources and/or assets will ideally be calculated using actual consumption data for the base year. If this data is unavailable, the earliest year of data will be used and kept constant back to the base year • Emissions from entities/sources and/or assets that are part of a divested business unit will be removed from the base year

		inventory • When the merger or acquisition happens partway through the year, floor area and/or other denominators will be prorated accordingly so that intensity figures will be represented accurately based on data provided A limitation of MFC's re-baselining approach relates to the challenging nature of accounting for emissions from agricultural operations. As a result, while Manulife endeavours to enhance the accuracy and completeness of reporting on emissions from owned and operated farms, there are notable limitations -- specifically, Manulife may not be able to retroactively re-baseline all agricultural emissions and comparability of this data may be more limited than for other business segments.

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)

102,739

Comment

The 2019 GHG Emissions Inventory has been re-baselined by removing NAL Resources and to account for revised operational control of Real Estate and corporate portfolio.

Scope 2 (location-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

193,776

Comment

The 2019 GHG Emissions Inventory has been re-baselined by removing NAL Resources and to account for revised operational control of Real Estate and corporate portfolio.

Scope 2 (market-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

183,611

Comment

The 2019 GHG Emissions Inventory has been re-baselined by removing NAL Resources and to account for revised operational control of Real Estate and corporate portfolio.

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)

197,330

Comment

2019 Purchased goods and services covered paper, data center energy use and contractor fuel.

Scope 3 category 2: Capital goods

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

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)

INTERNAL

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)

3,018

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)

25,660

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)

42,313

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

INTERNAL

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

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 15: Investments

Base year start

Base year end

Base year emissions (metric tons CO2e)

INTERNAL

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

INTERNAL

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
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)
162,749

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 1

Gross global Scope 1 emissions (metric tons CO2e)

150,673

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.

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

102,739

Start date

January 1, 2019

End date

December 31, 2019

Comment

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

124,076

Scope 2, market-based (if applicable)

109,442

Start date

January 1, 2021

End date

December 31, 2021

Comment

Past year 1

Scope 2, location-based

128,155

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Scope 2, market-based (if applicable)

113,249

Start date

January 1, 2020

End date

December 31, 2020

Comment

Past year 2

Scope 2, location-based

193,776

Scope 2, market-based (if applicable)

183,611

Start date

January 1, 2019

End date

December 31, 2019

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

INTERNAL

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)

1,068,441

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”.

Capital goods

Evaluation status

Not relevant, explanation provided

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".

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

Evaluation status

Not relevant, explanation provided

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

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

INTERNAL

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)
1,560

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

INTERNAL

Emissions in reporting year (metric tons CO2e)

1,985

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

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)

34,909

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

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

Please explain

As a financial institution, emissions associated with processing of sold products 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

Please explain

As a financial institution, emissions associated with use of sold products 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

Please explain

As a financial institution, emissions associated with end-of-life treatment of sold products 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)

195,684

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 agriculture and timber 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

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)
6,626

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

Please explain
We are providing data in this category for:

- 5705 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.
- 921 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)

195,330

Emissions calculation methodology

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

Please explain

We calculate emissions from Contractor Fuel Use from the Manulife Investment Management's Agriculture and Timber 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

INTERNAL

Start date

January 1, 2020

End date

December 31, 2020

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

168,063

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)

1,751

Scope 3: Business travel (metric tons CO2e)

6,044

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

78,626

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

INTERNAL

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)

199,569

Scope 3: Franchises (metric tons CO2e)

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

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

Comment

Past year 2

Start date

January 1, 2019

End date

December 31, 2019

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

INTERNAL

197,330

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)

3,018

Scope 3: Business travel (metric tons CO2e)

25,660

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

42,313

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)

239,093

Scope 3: Franchises (metric tons CO2e)

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

0.0000046396

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

286,825

Metric denominator

unit total revenue

INTERNAL

Metric denominator: Unit total

61,821,000,000

Scope 2 figure used

Location-based

% change from previous year

31

Direction of change

Increased

Reason for change

The overall 33% increase in intensity is attributed to a Scope 1 and 2 emissions increase by 3% while revenue decreased by 22%.

Intensity figure

7.52

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

286,825

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

38,137

Scope 2 figure used

Location-based

% change from previous year

0.34

Direction of change

Increased

Reason for change

Intensity figure increased due to an increase in total FTE from 37,198 in 2020 to 38,137 in 2021 and an increase in emissions.

C7. Emissions breakdowns

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?

Increased

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	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	272	Decreased	0.034	The total renewable energy (RECs) purchases during 2020 and 2021 are used in the calculation. Our green power purchases experienced a slight decrease compared to 2020. 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	8,270	Increased	3	Our Gross Scope 1 + 2 (market-based) emissions increased by 3% compared to the previous year. Percent Change calculation = (2021 Scope 1+2 emissions – 2020 Scope 1+2 emissions) ÷ 2020 Scope 1+2 emissions Manulife Investment Management Real Estate portfolio experienced a 9% decrease in Scope 1 & 2 emissions due emission reduction activities, purchase of renewable energy, enhanced efficiency measures and impact of COVID-19. In 2021, we continued to strengthen the foundations of decarbonization across our business. Real estate continues to implement a GHG management strategy to address current commitments, client demand and industry trends. At the same time, the Scope 1+2 emissions from Manulife Investment Management Timber and Agriculture portfolio that ranges from the application of fertilizers to the cultivation of rice fields, saw an increase as we further strengthen data collection and coverage to improve the carbon footprint of our operations.
Divestment	590,535	Decreased	74	Manulife divested from NAL Resources with a completion date of January 4, 2021, which previously represented a large portion of our energy use and GHG emissions. As per the GHG Protocol Corporate Standard, we adjusted the 2019 baseline emissions to ensure an accurate comparison of emissions over time.
Acquisitions				
Mergers				
Change in output				

Change in methodology				
Change in boundary	60,042	Increased	8	The change is boundary is associated with misallocation of emissions in Scope 1 in Timber and Agriculture operations as well as misallocation of emissions in Scope 1 and 2 for corporate leased office space where Manulife did not have operational control. The % figure reported has been calculated as follows: 100 X (change in scope 1+2 emissions attributed to change in boundary / previous year scope 1+2 emissions), where change in scope 1+2 emissions attributed to change in boundary = 60,042 tCO2e and previous year scope 1+2 emissions =797,438 tCO2e, thus 8%.
Change in physical operating conditions				
Unidentified				
Other				

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

INTERNAL

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	928,394	928,394

Consumption of purchased or acquired electricity		45,764	386,328	432,092
Consumption of purchased or acquired steam		0	20,818	20,818
Consumption of purchased or acquired cooling		0	0	0
Total energy consumption		45,764	1,335,541	1,381,304

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area

Australia

Consumption of electricity (MWh)

823

Consumption of heat, steam, and cooling (MWh)

0

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

823

Country/area

Canada

Consumption of electricity (MWh)

228,104

Consumption of heat, steam, and cooling (MWh)

5,495

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

233,599

Country/area

China

Consumption of electricity (MWh)

7,658

Consumption of heat, steam, and cooling (MWh)

0

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

7,658

Country/area

Japan

Consumption of electricity (MWh)

6,245

Consumption of heat, steam, and cooling (MWh)

0

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

6,245

Country/area

Malaysia

Consumption of electricity (MWh)

2,767

Consumption of heat, steam, and cooling (MWh)

0

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

2,767

Country/area

Singapore

Consumption of electricity (MWh)

5,945

Consumption of heat, steam, and cooling (MWh)

0

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

5,945

Country/area

United States of America

Consumption of electricity (MWh)

178,323

Consumption of heat, steam, and cooling (MWh)

15,324

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

193,647

Country/area

Viet Nam

Consumption of electricity (MWh)

967

Consumption of heat, steam, and cooling (MWh)

0

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

INTERNAL

967

Country/area

Indonesia

Consumption of electricity (MWh)

372

Consumption of heat, steam, and cooling (MWh)

0

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

372

Country/area

Hong Kong SAR, China

Consumption of electricity (MWh)

789

Consumption of heat, steam, and cooling (MWh)

0

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

789

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_Opinion_for_Manulife_Hancock_Timber_Resources_Group's_2021_Inventory_Final.pdf

Manulife_Agricultural_2021_GHG_Inventory_Verification_Opinion_Final.pdf

LRQA-CY21-assurance-statement-for-Manulife.pdf

Page/ section reference

1-5

Relevant standard

ISO14064-3

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

INTERNAL

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Verification_Opinion_for_Manulife_Hancock_Timber_Resources_Group's_2021_Inventory_Final.pdf

Manulife_Agricultural_2021_GHG_Inventory_Verification_Opinion_Final.pdf

LRQA-CY21-assurance-statement-for-Manulife.pdf

Page/ section reference

1-5

Relevant standard

ISO14064-3

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: Waste generated in operations
Scope 3: Business travel

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_Opinion_for_Manulife_Hancock_Timber_Resources_Group's_2021_Inventory_Final.pdf
Manulife_Agricultural_2021_GHG_Inventory_Verification_Opinion_Final.pdf
LRQA-CY21-assurance-statement-for-Manulife.pdf

Page/section reference
1-5

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Business travel

INTERNAL

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

LRQA-CY21-assurance-statement-for-Manulife.pdf

Page/section reference

1-5

Relevant standard

ISO14064-3

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?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Energy consumption	Energy Use was verified to limited assurance using the ISO14064-3 standard .	Manulife decided to verify energy use which includes kWh equivalent energy from use of electricity & steam, and combustion of natural gas & diesel fuel for Manulife Investment Management operated real estate properties, in order to provide accuracy and transparency in the values we are reporting. [1]

[1]LRQA-CY21-assurance-statement-for-Manulife.pdf

C11. Carbon pricing

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

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.

Objective for implementing an internal carbon price

Drive energy efficiency

GHG Scope

Scope 1

Scope 2

Application

Manulife Investment Management Real Estate's GHG management uses internal carbon price for building carbon audits

Actual price(s) used (Currency /metric ton)

160

Variance of price(s) used

No variance.

Type of internal carbon price

Shadow price

Impact & implication

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, in Request for Proposals (RFPs)

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% 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. Achieving this requires a commitment to integrity and consistent high standards from all partners, including our vendors. Accordingly, all vendors who provide Manulife with services and/or products are expected to adhere to the requirements of Manulife's Vendor Code of Conduct which includes environmental protection and conservation.

Impact of engagement, including measures of success

All vendors who provide Manulife with services or products are provided with and expected to adhere to the requirements of 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. Manulife also includes ESG-related questions, including climate change, in RFPs as part of our overall vendor management and engagement processes. This includes training category managers on the evaluation of vendors on ESG-related aspects, including types of responses deemed acceptable from suppliers participating in an RFP.

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

Provide asset owner clients with information and analytics on net zero investing and climate risk and opportunity

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

in client meetings we will ask about client preferences.

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

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 the needs and desires of our clients through regular interactions. At a minimum, we speak directly with each client on an annual basis. In these discussions, we elicit clients' feedback on their investment goals and will specifically review sustainable investment goals as directed by individual clients.

In 2021, we began developing ESG education for our institutional investors in Canada. This curriculum is being designed to communicate the basics of sustainable investing, including many aspects of stewardship, but it will also go deeper with decision-useful information on how to incorporate ESG considerations into investment policies and governance.

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

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

0

Investing (Asset managers) portfolio coverage

Investing (Asset owners) portfolio coverage

100

INTERNAL

Rationale for the coverage of your engagement

Engagement targeted at investees with increased climate-related risks

Impact of engagement, including measures of success

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

Over the past year we've also continued collaborating with a cement producer in China that has already committed to making significant carbon reductions, with targets set at five-year intervals through 2035. The company intends to generate lower emissions per ton of cement generated by using natural materials and industrial solid waste. While this plan puts the issuer ahead of peers, we encouraged the company to verify its carbon reduction target and ensure full alignment with the goals of the Paris Agreement. We also requested that it publish a physical and transitional risk assessment using the TCFD framework. We continue to work with the company on its long-term decarbonization plan and to accelerate its interim targets.

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 GA 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).

Type of engagement

Engagement & incentivization (changing investee behavior)

Details of engagement

Exercise active ownership

Encourage better climate-related disclosure practices among investees

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

0

Investing (Asset managers) portfolio coverage

Investing (Asset owners) portfolio coverage

Rationale for the coverage of your engagement

Engagement targeted at investees with increased climate-related risks

Impact of engagement, including measures of success

As an example in 2021, there was a significant proxy contest at a major oil firm that we held in some portfolios. A minority shareholder made a strong case for board turnover due in part to strategic missteps and operational underperformance. The dividend growth rate, for example, averaged 8% from 2001 through 2016, but slowed to 4% between 2017 and 2020. A third prong of the shareholder's argument was compelling from an environmental standpoint: The issuer had failed to adequately address climate risk, as evidenced by the fact that peers had earmarked significantly more capital expenditure for low-carbon technologies while the company hadn't set meaningful emissions reduction targets. We saw these as compelling arguments and supported the shareholder's entire proposal. Ultimately, three of the four shareholders' nominees were elected to the company's board. In addition, the company more recently committed to achieve net zero scope 1 and scope 2 emissions across its operations by 2050.

In addition, through collaborative engagements, we encourage better climate-related disclosure practices. For example, we have held a U.S. home builder for over a decade which, historically, was lacking credible ESG disclosures. Through our interactions and encouragement, the company produced its first stand-alone sustainability report in 2021. As a long-term investor, we see the progress the company is making on its sustainability goals across each of our ESG pillars. As another example, our Japan fixed-income team started to engage with a large U.S. insurer in 2018, whose MSCI ESG rating was B at the time. Our team noted that the company's ESG strategy and disclosure were somewhat lacking, and the company worked on our comments and subsequently formulated a disclosure and performance strategy. As of this writing, the firm dedicates several pages of its investor relations presentation to ESG, and its MSCI ESG rating has improved to a BBB rating.

INTERNAL

C12.1d

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

Manulife is a leading member of several global sustainability networks. In order to combat the consequences of climate change, we collaborate with other like-minded organizations that feel passionately about the cause. Our strategy is to work together with those from diverse backgrounds and in different industries. It is a well-rounded approach that checks off proactive milestones, so we are all held accountable in the global fight to preserve our environment.

We are committed to a program of ongoing education on sustainability for our clients in our value chain and, in 2021, began development of an education curriculum — the Manulife Investment Management Sustainable Investing Academy. This curriculum will cover varying levels of sustainability, from foundational through to more advanced topics. The education program will initially be made available to institutional investors in Canada in 2022, 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
Row 1	Yes

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 directly

How do you ensure your shareholder voting rights are exercised in line with your overall climate strategy?

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

Do you publicly disclose the rationale behind your voting on climate-related issues?

Yes, for all

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 climate strategy?

Vote tracking

Review external service provider’s climate-related policies

Review external service provider’s climate-related performance (e.g. active ownership, proxy voting records)

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

Do you publicly disclose the rationale behind your voting on climate-related issues?

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

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers
Yes, we engage indirectly through trade associations

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)

climate-change-statement-en.pdf
climate-approach-en-2020.pdf

INTERNAL

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

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 Climate Change Taskforce supports execution of our climate action plan and includes representation from subsidiary-specific working groups. 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.

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?

Focus of policy, law, or regulation that may impact the climate

Adaptation and/or resilience to climate change
Climate-related targets
Mandatory climate-related reporting
Sustainable finance

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Securities and Exchange Commission (SEC) call for commentary on proposed climate change disclosures.

Policy, law, or regulation geographic coverage

National

Country/region the policy, law, or regulation applies to

United States of America

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

Direct commentary sent to the agency in support of mandatory climate change disclosure requirements.

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

Manulife Investment Management generally supported the SEC's proposed climate change disclosures but suggested that scope 3 emissions be phased in after 3 years of required scope 1 and 2 emissions.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3b

(C12.3b) Provide details of the trade associations your organization 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, Investment management Association of Singapore, SITAC, ITA Japan, and others.

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

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

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.

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

Describe the aim of your organization's funding

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

Status

Complete

INTERNAL

Attach the document

- MFC_ESGR_2022_EN.pdf
- MFC_MDA_2021_Y1_EN.pdf

Page/Section reference

ESG Report: section: Environment, pages 29-54

MD&A – TCFD/environmental, social and governance risks section

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 November 2017 and are committed to adopting and aligning our disclosures to the TCFD recommendations. Our climate-related disclosure can be found on page 48 in our 2021 Management's Discussion and Analysis. Manulife's ESG Report provides additional disclosure on Manulife's position on climate change 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 2021 ESG report and in our 2021 Climate Change Statement.

In addition, during 2021, climate change was introduced as a strategic topic for Global Risk Management and leadership acknowledged the need to increase awareness and expertise within the function to better support the management of climate-relate risks across the organization. A working group was established to accelerate the effort in upskilling our risk staff, assess and adopt relevant industry practices and emerging regulatory expectations and enhance our existing Enterprise Risk Management (ERM) framework by embedding climate risk considerations into risk management activities across the enterprise.

INTERNAL

C-FS12.5

(C-FS12.5) 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	Climate Action 100+ Forest Stewardship Council (FSC) 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) UNEP FI Portfolio Decarbonization Coalition	• Climate Action 100+: we are the lead investor and supporting investor for companies in North America and Asia. • Investor Network on Climate Risk (INCR): we are a member. • 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 RCFD recommendations. Between 2017 and 2019, Manulife Investment Management participated in the United Nations Environment Programme Finance Initiative (UNEP FI) pilot project, which brought together 20 of the world’s largest investors to advance the recommendations of the TCFD. • Task Force on Nature-related Financial Disclosures (TNFD): Manulife Investment Management was a member of the informal working group developing the scope for TFND. • Forest Stewardship Council (FSC): Manulife Investment Management certifies our forests and farms under the FSC certification. • 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. • UNEP FI Portfolio Decarbonization Coalition: Manulife has been a contributing member since 2005.

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?

No, but we plan to assess our portfolio’s exposure in the next two years

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets

Other, please specify

We are reviewing development work that would be required to calculate this

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 reviewing development work that would be required to calculate this.

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

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets

Other, please specify

We are reviewing development work that would be required to calculate this

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 reviewing development work that would be required to calculate this.

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

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets

Other, please specify

We are reviewing development work that would be required to calculate this.

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 reviewing development work that would be required to calculate this.

Investing all carbon-related assets (Asset owner)

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

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets

Other, please specify

We are in a process of refining our internal investment databases for tracking of these metrics.

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 in a process of refining our internal investment databases for tracking of these metrics.

Investing in coal (Asset owner)

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

Primary reason for not providing a value for the financing and/or insurance to carbon-related assets

Other, please specify

We are in a process of refining our internal investment databases for tracking of these metrics.

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 in a process of refining our internal investment databases for tracking of these metrics.

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)

23,400,000,000

Percentage of portfolio value comprised of carbon-related assets in reporting year

5.7

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
Investing (Asset manager)	Yes	Other, please specify (Climate Value at Risk (% decrease/increase in portfolio value in climate scenarios); Portfolio Temperature Score (degree Celsius relative to the 1.5 degree global goal))
Investing (Asset owner)	Yes	Portfolio emissions Other, please specify Absolute total emissions, emission intensity (per revenue, per invested amount, weighted average intensity); low-carbon investments; high-carbon investments (assets under management and percentage of portfolio))

C-FS14.1a

(C-FS14.1a) Provide details of your organization's portfolio emissions in the reporting year.

Investing (Asset owner)

INTERNAL

Portfolio emissions (metric unit tons CO2e) in the reporting year

38,300,000

Portfolio coverage

73

Percentage calculated using data obtained from clients/investees

100

Emissions calculation methodology

The Global GHG Accounting and Reporting Standard for the Financial Industry

Please explain the details and assumptions used in your calculation

This reflects Manulife's estimated portfolio emissions for the reporting year of 2020. For the purpose of efficiency and 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. 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.

Our total disclosed portfolio coverage is 73%. 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). Manulife is undergoing a Science-based Target setting process and actively 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

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.

INTERNAL

Portfolio

Investing (asset manager)

Portfolio metric

Other, please specify

Energy intensity (ekWh/sq.ft)

Metric value in the reporting year

14

Portfolio coverage

100

Percentage calculated using data obtained from clients/investees

100

Calculation methodology

The energy intensity in ekWh/sq.ft covers 100% of Manulife Investment Management Real Estate's portfolio.

Portfolio

Investing (asset owner)

Portfolio metric

Weighted average carbon intensity (tCO_2e/Million revenue)

Metric value in the reporting year

677

Portfolio coverage

73

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).

C-FS14.2

(C-FS14.2) Are you able to provide a breakdown of your organization's portfolio impact?

	Portfolio breakdown
Row 1	Yes, by asset class Yes, by industry Yes, by country/region

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

INTERNAL

Investing Fixed Income	Weighted average carbon intensity (tCO2e/Million revenue)	740

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)	22,500,000
Investing (Asset owner)	Energy	Absolute portfolio emissions (tCO2e)	5,700,000
Investing (Asset owner)	Materials	Absolute portfolio emissions (tCO2e)	3,400,000
Investing (Asset owner)	Other, please specify Industrials	Absolute portfolio emissions (tCO2e)	2,000,000
Investing (Asset owner)	Consumer Services	Absolute portfolio emissions (tCO2e)	2,200,000
Investing (Asset owner)	Health Care Equipment & Services	Absolute portfolio emissions (tCO2e)	200,000
Investing (Asset owner)	Diversified Financials	Absolute portfolio emissions (tCO2e)	1,600,000
Investing (Asset owner)	Technology Hardware & Equipment	Absolute portfolio emissions (tCO2e)	500,000
Investing (Asset owner)	Telecommunication Services	Absolute portfolio emissions (tCO2e)	200,000
Investing (Asset owner)	Real Estate	Absolute portfolio emissions (tCO2e)	100,000

C-FS14.2c

(C-FS14.2c) Break down your organization's portfolio impact by country/region.

Portfolio	Country/region	Portfolio metric	Portfolio emissions or alternative metric
Investing (Asset owner)	United States of America	Absolute portfolio emissions (tCO2e)	2,000,000

INTERNAL

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	Please explain why you have not taken any action to align your portfolio with a 1.5°C world
Investing (Asset manager)	No, but we plan to in the next two years	Manulife Investment Management prioritizes the impact of climate change on the economy through our company engagements. Manulife Investment Management is, for example, a lead investor for a collaborative engagement with an Oil/Gas company through Climate Action 100+ and is also a member of the steering committee for that initiative Manulife Investment Management seeks to reduce emissions across the value chain. The team has the capability for meeting client mandates with specific objectives like reducing carbon footprints and building portfolios for client objectives. The investment teams conduct scenario analysis on the portfolios for 1.5, 2, and 3 degree alignment. Where Manulife Investment Management operates the asset class, the team works to reduce the carbon footprint.
Investing (Asset owner)	Yes	

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
Investing (Asset owner)	Yes, for all

INTERNAL

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	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.	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 Signatory to the Finance for Biodiversity Pledge.	F4B – Finance for Biodiversity

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?	Portfolio
Row 1	Yes, we assess impacts on biodiversity in both our upstream and downstream value chain	Investing portfolio (Asset manager)

C15.4

(C15.4) 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 Education & awareness Law & policy Other, please specify Working groups creating standards (TNFD, Finance for Biodiversity Pledge.

C15.5

(C15.5) 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	No, we do not use indicators, but plan to within the next two years	

C15.6

(C15.6) 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 Impacts on biodiversity Risks and opportunities	MFC 2021 ESG Report, pages 52-54 [1]

[1]MFC_ESGR_2022_EN.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)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

N/A

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	61,821,000,000

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

Accenture

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

16

Uncertainty (±%)

Major sources of emissions

Stationary combustion

Verified

No

Allocation method

Allocation based on the market value of products purchased

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Corporate level GHG emissions data was used to produce this allocation estimate. The market value of services purchased by Accenture was divided by the total market value of services delivered by Manulife in 2021. We used this proportion to allocate Manulife's corporate-level Scope 1 emissions data to Accenture. There are significant limitations to this process, namely that the delivery of insurance services is not directly linked to the GHG emitting activities of the firm which are located within Manulife's investment management division.

Requesting member

Accenture

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

11

Uncertainty (±%)

Major sources of emissions

Purchased electricity, district heating and cooling

Verified

No

Allocation method

Allocation based on the market value of products purchased

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Corporate level GHG emissions data was used to produce this allocation estimate. The market value of services purchased by Accenture was divided by the total market value of services delivered by Manulife in 2021. We used this proportion to allocate Manulife's corporate-level scope 2 GHG emissions data to Accenture. There are significant limitations to this process, namely that the delivery of insurance services is not directly linked to the GHG emitting activities of the firm which are located within Manulife's investment management division

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Requesting member

TD Bank Group

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

762

Uncertainty (±%)

Major sources of emissions

Stationary combustion

Verified

No

Allocation method

Allocation based on the market value of products purchased

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Corporate level GHG emissions data was used to produce this allocation estimate. The market value of services purchased by TD Bank Group was divided by the total market value of services delivered by Manulife in 2021. We used this proportion to allocate Manulife's corporate-level Scope 1 emissions data to TD Bank Group. There are significant limitations to this process, namely that the delivery of insurance services is not directly linked to the GHG emitting activities of the firm which are located within Manulife's asset management division.

Requesting member

TD Bank Group

Scope of emissions

Scope 2

Allocation level

Company wide

INTERNAL

Allocation level detail

Emissions in metric tonnes of CO2e

518

Uncertainty (±%)

Major sources of emissions

Purchased electricity, district heating and cooling

Verified

No

Allocation method

Allocation based on the market value of products purchased

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Corporate level GHG emissions data was used to produce this allocation estimate. The market value of services purchased by TD Bank Group was divided by the total market value of services delivered by Manulife in 2021. We used this proportion to allocate Manulife's corporate-level scope 2 GHG emissions data to TD Bank Group. There are significant limitations to this process, namely that the delivery of insurance services is not directly linked to the GHG emitting activities of the firm which are located within Manulife's asset management division

INTERNAL

Requesting member

Visteon

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

2

Uncertainty (±%)

Major sources of emissions

Stationary combustion

Verified

No

Allocation method

Allocation based on the market value of products purchased

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Corporate level GHG emissions data was used to produce this allocation estimate. The market value of services purchased by Visteon was divided by the total market value of services delivered by Manulife in 2021. We used this proportion to allocate Manulife's corporate-level Scope 1 emissions data to Visteon. There are significant limitations to this process, namely that the delivery of insurance services is not directly linked to the GHG emitting activities of the firm which are located within Manulife's asset management division.

Requesting member

Visteon

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

1

Uncertainty (±%)

Major sources of emissions

Purchased electricity, district heating and cooling

Verified

No

Allocation method

Allocation based on the market value of products purchased

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Corporate level GHG emissions data was used to produce this allocation estimate. The market value of services purchased by Visteon was divided by the total market value of services delivered by Manulife in 2021. We used this proportion to allocate Manulife's corporate-level scope 2 GHG emissions data to Visteon. There are significant limitations to this process, namely that the delivery of insurance services is not directly linked to the GHG emitting activities of the firm which are located within Manulife's asset management division.

Requesting member

Ecolab Inc.

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

23

Uncertainty (±%)

Major sources of emissions

Stationary combustion

Verified

No

Allocation method

Allocation based on the market value of products purchased

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Corporate level GHG emissions data was used to produce this allocation estimate. The market value of services purchased by Ecolab Inc. was divided by the total market value of services delivered by Manulife in 2021. We used this proportion to allocate Manulife's corporate-level Scope 1 emissions data to Ecolab Inc. There are significant limitations to this process, namely that the delivery of insurance services is not directly linked to the GHG emitting activities of the firm which are located within Manulife's asset management division.

Requesting member

Ecolab Inc.

Scope of emissions

Scope 2

INTERNAL

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

15

Uncertainty (±%)

Major sources of emissions

Purchased electricity, district heating and cooling

Verified

No

Allocation method

Allocation based on the market value of products purchased

Market value or quantity of goods/services supplied to the requesting member

Unit for market value or quantity of goods/services supplied

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Corporate level GHG emissions data was used to produce this allocation estimate. The market value of services purchased by Ecolab Inc. was divided by the total market value of services delivered by Manulife in 2021. We used this proportion to allocate Manulife's corporate-level scope

2 GHG emissions data to Ecolab Inc. There are significant limitations to this process, namely that the delivery of insurance services is not directly linked to the GHG emitting activities of the firm which are located within Manulife's asset management division.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

We do not use published information to allocate emissions in SM1.1. We use primary data based on our calculated GHG Inventory and our revenue. Since we are a financial services firm, we use the economic allocation approach. This is consistent with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. We have allocated scope 1 and 2 emissions based on each customer's contribution to our annual revenue for the 2020 reporting year.

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Customer base is too large and diverse to accurately track emissions to the customer level	The following would help overcome these challenges: more demand from customers to provide these emissions allocations; a methodology to provide greater certainty that the allocation of emissions is consistent by all respondents.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

No

SC1.4b

(SC1.4b) Explain why you do not plan to develop capabilities to allocate emissions to your customers.

The current 'allocation based on the market value of products purchased' is the most appropriate method to allocate emissions to our customers.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

FW-FS Forests and Water Security (FS only)

FW-FS1.1

(FW-FS1.1) Is there board-level oversight of forests- and/or water-related issues within your organization?

	Board-level oversight of this issue area	Explain why your organization does not have board-level oversight of this issue area and any plans to address this in the future
Forests	No, but we plan to within the next two years	
Water	No, but we plan to within the next two years	

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

Yes

Criteria used to assess competence of board member(s) on this issue area

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 significant 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

Yes

Criteria used to assess competence of board member(s) on this issue area

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 significant 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.

Name of the position(s) and/or committee(s)

Chief Investment Officer (CIO)

Reporting line

CEO reporting line

Issue area(s)

Forests
Water

Responsibility

Both assessing and managing risks and opportunities

Coverage of responsibility

Risks and opportunities related to our investing (asset management) activities

Frequency of reporting to the board on forests- and/or water-related issues

As important matters arise

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
Investing (Asset manager) – Forests exposure	Yes
Investing (Asset manager) – Water exposure	Yes
Investing (Asset owner) – Forests exposure	Yes
Investing (Asset owner) – Water exposure	Yes

FW-FS2.1a

(FW-FS2.1a) Describe how you assess your portfolio's exposure to forests- and/or water-related risks and opportunities.

Portfolio

Investing (Asset manager)

Exposure to

Forests-related risks and opportunities

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

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.

Portfolio

Investing (Asset owner)

Exposure to

Forests-related risks and opportunities

INTERNAL

Type of risk management process

A specific ESG-related 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

Internal tools/methods

Provide the rationale for implementing this process to assess your portfolio's exposure to forests- and/or water-related risks and opportunities

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.

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
Investing (Asset manager) – Forests-related information	Yes	

Investing (Asset manager) – Water-related information	Yes	
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.

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.

Portfolio

Investing (Asset manager)

Information related to

Forests

Type of information considered

Scope and content of forests policy
Commitment to eliminate deforestation/conversion of other natural ecosystems

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
Consumer Durables & Apparel
Food & Staples Retailing
Food, Beverage & Tobacco
Semiconductors & Semiconductor Equipment
Real Estate
Other, please specify
Forestry and Sovereigns.

State how these forests- and/or water-related information influences your decision making

They are an element Sustainability toolkit.

Portfolio

Investing (Asset manager)

Information related to

Water

Type of information considered

Scope and content of water policy

Process through which information is obtained

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

Consumer Durables & Apparel
Food & Staples Retailing
Food, Beverage & Tobacco
Semiconductors & Semiconductor Equipment
Real Estate

State how these forests- and/or water-related information influences your decision making

They are an element Sustainability toolkit.

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	No	Evaluation in process	We are in the process of evaluating any inhered water-related risks in our portfolio.

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

INTERNAL

Forests	No	Opportunities exist, but none with the potential to have a substantive financial or strategic impact on business	Opportunities exist, but none with the potential to have a substantive financial or strategic impact on business.
Water	No	Evaluation in process	Evaluation in process.

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 agriculture and timberland 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.

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.

Our General Account invests $5.9 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

INTERNAL

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.

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.

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.

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

No, we have not conducted any scenario analysis to identify outcomes for this issue area, and we don't plan to in the next two years

Explain why your organization has not conducted scenario analysis for this issue area and any plans to address this in the future

Water

Scenario analysis conducted to identify outcomes for this issue area

No, we have not conducted any scenario analysis to identify outcomes for this issue area, and we don't plan to in the next two years

Explain why your organization has not conducted scenario analysis for this issue area and any plans to address this in the future

FW-FS3.3

(FW-FS3.3) 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
Forests	Yes
Water	

FW-FS3.3a

(FW-FS3.3a) Provide details of your existing products and services that enable clients to mitigate deforestation and/or water insecurity.

Product type

Forestry

Taxonomy or methodology used to classify product(s)

Description of product(s)

All our investments promote zero-deforestation in line with our public commitment

Product enables clients to mitigate

Deforestation

Type of activity financed, invested in or insured

Sustainable forest management

Sustainable agriculture

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

15,524,232,050

% of total portfolio value

100

FW-FS3.4

(FW-FS3.4) 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 are working on a Nature and Biodiversity Statement for Manulife Investment Management.

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Water	No, but we plan to include this issue area within the next two years	We are working on a Nature and Biodiversity Statement for Manulife Investment Management.

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	
Investees – Water	Yes	

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

INTERNAL

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
Forests	Yes	Reduce water pollution	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.
Water	Yes	Reduce water pollution	

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?

	Direct or indirect engagement that could influence policy, law, or regulation that may impact this issue area
Forests	Yes, we engage indirectly by funding other organizations whose activities may influence policy, law, or regulation that may significantly impact this issue area

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Water	Yes, we engage indirectly by funding other organizations whose activities may influence policy, law, or regulation that may significantly impact this issue area

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
Investing (Asset manager) – Impact on Forests	Yes	By measuring our GHG footprint. Manulife Investment Management Timberland and Agriculture is focused on managing forests for positive climate impact. The responsible stewardship and management of our forests and farms contributes to our climate goals. Through our plants and soil, Manulife's terrestrial ecosystems absorb and store more GHGs than our operations emit on an annual basis. Manulife Investment Management-managed forests and farms can also be a source of emissions, through aspects such as fuel combustion to operate heavy machinery, application of fertilizers, and powering of processing facilities. Focusing on climate impacts means going beyond carbon removal and actively working to identify new opportunities for abatement of absolute emissions in our forestry and farmland operations. Decarbonization opportunities are currently under assessment and remain a priority with the release of SBTi Forest, Land and Agriculture (FLAG) sector guidance at the end of 2021.		

Investing (Asset manager) – Impact on Water	Yes	Following best management practices (BMP) on adjacent to water bodies. We measure the length of watercourses depending on our Timberland and Agriculture practices for maintaining water quality.		
Investing (Asset owner) – Impact on Forests	No, but we plan to in the next two years			
Investing (Asset owner) – Impact on Water	No, and we don't plan to in the next two years			

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
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		
Investing (asset owner) to companies operating in the cattle products supply chain	No		

Investing (asset owner) to companies operating in the soy supply chain	No		
Investing (asset owner) to companies operating in the rubber supply chain	No		
Investing (asset owner) to companies operating in the cocoa supply chain	No		
Investing (asset owner) to companies operating in the coffee supply chain	No		

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).

Publication

In mainstream reports

Status

Complete

Attach the document

MFC_ESGR_2022_EN.pdf

INTERNAL

HNRG-SRI-Report (9).pdf

Page/Section reference

32 and 52 of the 2021 ESG Report .

Content elements

Strategy

Comment

The responsible stewardship and management of our forests and farms contributes to our climate goals. Manulife Investment Management-managed forests and farms can also be a source of emissions, through aspects such as fuel combustion to operate heavy machinery, application of fertilizers, and powering of processing facilities. Decarbonization opportunities are currently under assessment and remain a priority with the release of SBTi Forest, Land and Agriculture sector guidance. As a timberland and agriculture investment manager and member of both the WBCSD's Nature Action and Forest Solutions Group projects, our very business is managing nature.

We work with leading carbon project developers and accredited third-party verification and validation bodies to identify new carbon project opportunities, conduct feasibility studies, timberland inventories and project calculations and compile documentation for ongoing monitoring, reporting and verification. We have experience managing carbon projects in both compliance and voluntary markets and across project types including carbon removals achieved by planting new forests and boosting the carbon capture of existing forests with improved forest management as well as avoided emissions resulting from changing the forest management regimes. Our carbon projects adhere to our Carbon Principles that are aligned with the Core Carbon Principles created by Integrity Council for the Voluntary Carbon Market. Our Principles provide a framework for high-integrity, high-quality carbon sequestration and crediting across our carbon project activities for both forest and soil carbon. We also have the ability to develop portfolios of forest investments managed primarily for carbon value and based on these high-integrity carbon principles centered on additionality, permanence, monitoring and reporting and verification, among other criteria.

Water: Across the Manulife Investment Management managed global real estate portfolio, we also have targets for water use. In the forests and farms we manage, we operate in a way that responsibly manages land and protects sensitive lands and biodiversity through stewardship practices. This includes protection of watersheds, habitats, and critical wildlife. Examples include: Restoring over 10 miles of aquatic habitat and connectivity in Washington for endangered species by removing fish passage barriers, reconnecting floodplains, and planting native shrubs.

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Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms

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