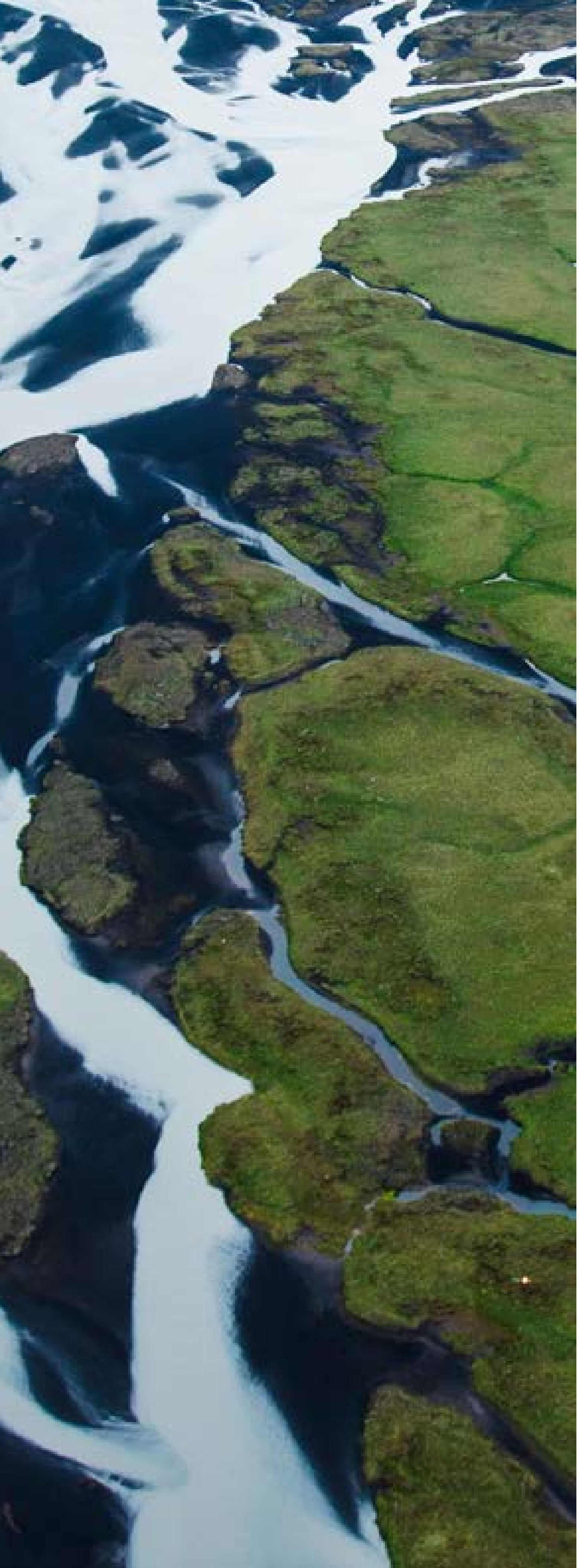

Manulife Investment Management

Climate change statement

December 2020

At Manulife Investment Management, we believe 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 both risks and opportunities for almost all companies in all industries and therefore must be properly assessed by investors in order to safeguard clients' assets.

The principles herein align with those of Manulife Financial Corporation (MFC), our parent company, and this statement outlines our approach to the investment and asset ownership issues we face now and into the future. We are supporters of the Investor Agenda on Climate Change,[1] which informs this statement.

Climate change in context

Climate change is a shift in temperature and precipitation levels, and an increase in extreme weather, due to elevated levels of greenhouse gases (GHGs) in the atmosphere.[2] The burning of fossil fuels for energy for power generation, heat, transportation, and manufacturing is the largest emitter of GHGs.[3] Agricultural and land use changes, such as deforestation, and industrial processes are other significant sources of GHG emissions.

According to the October 2018 report of the Intergovernmental Panel on Climate Change (IPCC),[4] limiting warming to 1.5° C (2.7° F) above preindustrial levels would require rapid, far-reaching, and unprecedented action at all levels of society. The report states that the current impact of global warming can be observed on human and natural systems, and that many land and ocean ecosystems have already materially changed. Development pathways compatible with 1.5° C of warming with no or limited temperature overshoot requires unprecedented and urgent transitions in energy systems, land use, urban development, infrastructure, industrial systems, and consumer behavior. According to the IPCC, world economies must invest an average of US$2.4 trillion a year for the next two decades, representing about 2.5% of global GDP, to avoid irreparable damage from climate change.

The Paris Agreement

At the December 2015 United Nations Climate Change Conference in Paris, all 197 participating parties reached a landmark agreement to reduce GHG emissions (the Paris Agreement).[5] The accord represented the most ambitious global agreement to date to address climate change, with its main goal being to prevent the average global temperature from rising more than 2° C degrees (3.6° F) above preindustrial levels. The Paris Agreement has been ratified by 189 parties,[6] and it is widely expected to result in a wave of policies and regulations globally over the coming years aimed at reducing carbon emissions or equivalent GHGs.

Defining climate risk

According to the Task Force on Climate-related Financial Disclosures (TCFD) final recommendations released in 2017,[7] climate-related risks relevant to investors can be classified as physical (associated with changes in chronic or acute weather patterns) and transition (impacts resulting from the transition to a low-carbon economy, including policy, legal, technology, and market changes to address mitigation and adaptation requirements) risks. Examples of how physical and transition risks can materialize for companies include:

- Direct regulatory costs for companies with Scope 1[8] carbon-intensive business activities
- Operational disruptions from extreme weather events that are more unpredictable or impactful
- Disruptions to upstream and downstream supply chain
- A shift in market access or end user demand for industries that sell carbon-intensive products (i.e., high Scope 3[8] emissions), as customers or regulators shift to greener substitutes
- Stranding of company assets, either due to GHG regulations, rapid technology switching, or physical risks (chronic and acute)

The opportunities of climate change

The TCFD framework also emphasizes that efforts to mitigate and adapt to climate change also produce opportunities for companies, industries, and investors. Examples include resource efficiency and cost savings, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building supply chain resilience. Climate-related opportunities will vary depending on the region, market, and industry in which an organization operates. The following is a non-exhaustive list of growth themes that will emerge, some of which we have direct exposure to today:

- Sustainable agriculture—services, products, seed technology, irrigation, crop protection
- Infrastructure investment—green buildings, sanitation, electrification of remote areas, smart grids, alternative clean energy, energy storage, digitalization, transportation, financing
- Preservation of natural capital—water technologies, biodiversity, sustainable mining technologies
- Sustainable forestry—forest offsets, voluntary carbon markets, improved forest management, reforestation, high carbon stocks
- Circular economy—reduction of plastics, biodegradable packaging, mineral recycling from batteries and devices
- Clean air—reduction of GHG emissions, carbon extraction, methane recapture, carbon capture sequestration

Our approach to climate change in investing

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.

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 best practices for operated assets, and participating in collaborative industry climate initiatives. In general, our preferred position is to engage directly with companies to encourage effective implementation of climate risk mitigation and adaptation strategies, reserving the right to divest of any investment.

Governance

Our climate-related activities take place within a governance framework established by Manulife Investment Management to oversee the sustainable investing activities and support the implementation of the sustainable investing statement in alignment with the firm's overall strategy and business priorities. This structure comprises various committees and working groups across asset classes at appropriate levels of the firm with representation from various business functions that are stakeholders in implementing the sustainable investing agenda. The heads of the public markets and private markets businesses chair their respective sustainable investing committee, which enables regular decision-making oversight of the sustainable and responsible investing agenda that is appropriate to specific asset classes. In turn, chairs of these sustainable investment committees communicate directly to other leaders of the global wealth and asset division of MFC.

Climate change in our investment process

Our goal to achieve attractive risk-adjusted returns remains consistent as we aspire to integrate environmental, social, and governance (ESG) 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 regarding the latest facts and 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 the 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, real estate compliant with green building certifications, natural climate solutions, global carbon markets, and green bonds.

Active ownership

In line with our Manulife Investment Management ESG engagement policy, in public markets investing we engage on ESG factors with the intention of protecting our clients' investments; to influence the adoption of positive change in a company's disclosure, management strength, and strategic approach to key ESG issues; and we seek to further define measures of best practice of climate risk management. Since 2018, climate risks and the climate transition have been a focus topic in many of our bilateral engagement discussions with companies, which is complemented by our participation in engagement initiatives such as the Climate Action 100+. By engaging with companies on climate change transition, we encourage them to align their business strategy with the long-term interests of investors to support their preparation for the energy and economic transition ahead. Specifically, we support companies to align their business strategy with climate science, proactively manage and disclose GHG emissions, and make disclosures in line with the TCFD recommendations or similar disclosure frameworks. As stated in our Manulife Investment Management global proxy voting policies, we actively vote to encourage best practices by companies toward environmental risks and opportunities.

Asset operations

In segments where we operate assets, climate-related considerations inform our mitigation and adaptation efforts to reduce the impact and vulnerability of our assets. We have developed practices to measure and reduce our emissions and we have implemented third-party certification standards to enhance our reporting and accountability commitments.

Climate collaborations with regulators and other stakeholders

Governments are significant influencers in the adoption of cleaner forms of energy, either through regulatory reforms or market-based programs to promote the transition to a lower carbon emissions environment. Through a variety of mechanisms, we engage with policy makers and regulators on systemic climate

risks given the potential for these risks to disrupt functioning capital markets. Our climate policy engagement priorities include:

- **Carbon pricing:** We support effective carbon pricing policies that drive emission reductions and industry innovation while seeking to lower compliance costs. In our view, well-designed policies introduce flexibility through market-based mechanisms that provide emitters with choices on how to comply. Further, complementary policies should be considered to remove barriers that hinder companies' ability to reduce their emissions with new technologies or processes. We support carbon policies that provide clear incentives over the long term, are in line with the goals of the Paris Agreement, that are transparent, easy to understand, and can be consistently implemented, enforced, and maintained over time. We support carbon pricing coverage that is broad when necessary and equitable across sectors.

- **Disclosure:** We support regulatory efforts to ensure appropriate, decision-useful, and industry-specific climate disclosures, and endorse the structure of the TCFD recommendations as a broad framework for these efforts.

- **Subsidies:** We are supportive of governments' actions to create policies that address climate change in a sound economic manner.

- **A just climate transition:** We recognize the world's carbon transition will create disruption of certain communities and believe a just transition plan is appropriate in tandem with clean energy adoption. We believe all stakeholders should be proactive and create plans to ensure a fair transition to the low-carbon economy for affected communities.

We support carbon policies that have clear mechanisms for periodic review, improvement, and termination, while attempting to be cognizant of programs that facilitate carbon leakage to the detriment of another region or country.

We also place a strong emphasis on collaboration with industry peers, industry associations, civil society organizations, and other groups that are working toward a more climate-resilient capital market and economy. These collaborations may include sponsoring climate research, creation of new industry standards or reporting frameworks, joining collaborative industry engagements or innovation initiatives, joining industry working groups, and signing joint letters. We will collaborate with other industry stakeholders where we believe the initiative is credible, can amplify the impact of our climate work, and is in the long-term interests of our clients and the investment industry.

Reporting

As an investment firm, we are supportive of the recommendations of the TCFD and we are committed to incrementally report in line with its guidance for the various asset classes in which we are invested.

1 The Investor Agenda has been developed for the global investor community to accelerate and scale up the actions that are critical to tackling climate change and achieving the goals of the Paris Agreement with the aim of keeping average global temperature rise to no more than 1.5 degrees Celsius. https://theinvestoragenda.org/. **2** United Nations Framework Convention on Climate Change, https://unfccc.int/files/press/backgrounders/application/pdf/press_factsh_science.pdf. **3** Center for Climate and Center for Solutions, Global Emissions, https://www.c2es.org/content/international-emissions/ **4** See the IPCC's October 2018 special report on the impacts of global warming, https://www.ipcc.ch/sr15/. **5** The Paris Agreement, https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement. **6** As of 4/1/20, Paris Agreement Status of Ratification, https://unfccc.int/process/the-paris-agreement/status-of-ratification. **7** Recommendations of the Task Force on Climate-related Financial Disclosures. **8** Greenhouse gas (GHG) emissions scope level definitions: Scope 1: all direct GHG emissions; Scope 2: indirect GHG emissions from consumption of purchased electricity, heat, or steam; Scope 3: indirect emissions not covered in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions. See also "The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)," World Resources Institute and World Business Council for Sustainable Development, March 2004.

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