

Second-Party Opinion

Manulife Sustainable Bond Framework



Evaluation Summary

Sustainalytics is of the opinion that the Manulife Sustainable Bond Framework is credible and impactful and aligns with the Sustainability Bond Guidelines 2021, Green Bond Principles 2021, and Social Bond Principles 2021. This assessment is based on the following:



USE OF PROCEEDS The eligible categories for the use of proceeds – Renewable Energy, Green Buildings, Environmentally Sustainable Management of Living Natural Resources and Land Use, Energy Efficiency, Clean Transportation, Sustainable Water and Wastewater Management, Pollution Prevention and Control, Access to Essential Services, Affordable Housing– are aligned with those recognized by both the Green Bond Principles and Social Bond Principles. Sustainalytics considers that investments in the eligible categories may lead to positive environmental and social impacts and advance the UN Sustainable Development Goals, specifically SDG 6, 7, 10, 11 and 15.



PROJECT EVALUATION / SELECTION Manulife’s Sustainability Accounting team is responsible for maintaining an inventory of general account assets that are eligible under the Framework and structures the allocation of proceeds. Manulife’s Sustainable Bonds Council provides final approval on project selection. Manulife’s ESG guidelines are applicable to all allocation decisions made under the Framework. Sustainalytics considers the risk management system to be adequate and the project selection process to be in line with market practice.



MANAGEMENT OF PROCEEDS Manulife has established a Sustainable Bond Register to track net proceeds which will be managed by its Sustainability Accounting team. The Company intends to fully allocate proceeds within 18 months of issuance. Pending full allocation, net proceeds will be held in cash or liquid securities. This is in line with market practice.



REPORTING Manulife has committed to allocation reporting via an annual report on its website. In addition, Manulife is committed to reporting on relevant impact metrics. Sustainalytics views the allocation and impact reporting as aligned with market practice.

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¹ This document is an update of a Second-Party Opinion, originally published in November 2017 in relation to Manulife’s Green Bond Framework. In August 2021, Manulife engaged Sustainalytics to assess the alignment of its Sustainable Bond Framework. Given the length of time since the previous Framework and SPO, the scope of Sustainalytics’ review consists of (i) assessing the Framework’s alignment with the 2021 version of the Green Bond Principles, Social Bond Principles and Sustainability Bond Guidelines; (ii) re-evaluating the green use of proceeds categories to current market practice; and (iii) assessing the new social use of proceeds categories added.

Introduction

Manulife Financial Corporation (“Manulife” or the “Company”) is an multinational financial services provider headquartered in Toronto, Canada. In addition to its core life insurance business, the Company provides financial advice, wealth and asset management solutions to individuals and institutions employing approximately 37,000 people worldwide.

Manulife has developed the Manulife Sustainable Bond Framework (the “Framework”) under which it intends to issue green, social and/or sustainability bonds and use the proceeds to finance and/or refinance, in whole or in part, existing and/or future projects that provide positive social and/or environmental impacts.

The Framework defines green eligibility criteria in seven areas:

1. Renewable Energy
2. Green Buildings
3. Environmentally Sustainable Management of Living Natural Resources and Land Use
4. Energy Efficiency
5. Clean Transportation
6. Sustainable Water and Wastewater Management
7. Pollution Prevention and Control

The Framework defines social eligibility criteria in two areas:

1. Access to Essential Services
2. Affordable Housing

The Framework builds upon the Company’s 2017 Green Bond Framework;² the seven eligible green categories have been retained from the previous framework while the two social categories are new entries.

Manulife engaged Sustainalytics to review the Manulife Sustainable Bond Framework, dated February 2022, and provide a Second-Party Opinion on the Framework’s environmental and social credentials and its alignment with the Sustainability Bond Guidelines 2021 (SBG), Green Bond Principles 2021 (GBP), and Social Bond Principles 2021 (SBP).³ This Framework will be published in a separate document.⁴

Scope of work and limitations of Sustainalytics’ Second-Party Opinion

Sustainalytics’ Second-Party Opinion reflects Sustainalytics’ independent⁵ opinion on the alignment of the reviewed Framework with the current market standards and the extent to which the eligible project categories are credible and impactful.

As part of the Second-Party Opinion, Sustainalytics assessed the following:

- The Framework’s alignment with the Sustainability Bond Guidelines 2021, Green Bond Principles 2021, and Social Bond Principles 2021, as administered by ICMA;
- The credibility and anticipated positive impacts of the use of proceeds; and
- The alignment of the issuer’s sustainability strategy and performance and sustainability risk management in relation to the use of proceeds.

For the use of proceeds assessment, Sustainalytics relied on its internal taxonomy, version 1.11, which is informed by market practice and Sustainalytics’ expertise as an ESG research provider.

As part of this engagement, Sustainalytics held conversations with various members of Manulife’s management team to understand the sustainability impact of their business processes and planned use of proceeds, as well as management of proceeds and reporting aspects of the Framework. Manulife representatives have confirmed (1) they understand it is the sole responsibility of Manulife to ensure that the

² Manulife, “Green Bond Framework” (2017), at: https://www.manulife.com/content/dam/corporate/global/en/documents/pas/MFC_GBF_2017_EN.pdf

³ The Sustainability Bond Guidelines are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainability-bond-guidelines-sbg/>

⁴ The Manulife Sustainable Bond Framework is available on Manulife’s website at: <https://www.manulife.com/en/investors/results-and-reports.html#Green%20Bonds%20reports>

⁵ When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics’ hallmarks is integrity, another is transparency.

information provided is complete, accurate or up to date; (2) that they have provided Sustainalytics with all relevant information and (3) that any provided material information has been duly disclosed in a timely manner. Sustainalytics also reviewed relevant public documents and non-public information.

This document contains Sustainalytics' opinion of the Framework and should be read in conjunction with that Framework.

Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and Manulife.

Sustainalytics' Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics' Second-Party Opinion addresses the anticipated impacts of eligible projects expected to be financed with bond proceeds but does not measure the actual impact. The measurement and reporting of the impact achieved through projects financed under the Framework is the responsibility of the Framework owner.

In addition, the Second-Party Opinion opines on the potential allocation of proceeds but does not guarantee the realised allocation of the bond proceeds towards eligible activities.

No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument, either in favour or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that Manulife has made available to Sustainalytics for the purpose of this Second-Party Opinion.

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Manulife Sustainable Bond Framework

Sustainalytics is of the opinion that the Manulife Sustainable Bond Framework is credible, impactful and aligns with the core components of the GBP and SBP. Sustainalytics highlights the following elements of Manulife's Sustainable Bond Framework:

- Use of Proceeds:
 - The eligible categories – Renewable Energy, Green Buildings, Environmentally Sustainable Management of Living Natural Resources and Land Use, Energy Efficiency, Clean Transportation, Sustainable Water and Wastewater Management, Pollution Prevention and Control, Access to Essential Services, Affordable Housing – are aligned with those recognized by the GBP and SBP.
 - Regarding refinancing, the Company has incorporated a look-back period of 24 months from each issuance, which Sustainalytics considers to be in line with market practice.
 - Within the Renewable Energy category, the Company intends to finance facilities and equipment dedicated to renewable energy generation in wind, solar, small-scale run-of-river hydro (under 25 Mega Watts), bioenergy from waste biomass, tidal and geothermal energy.
 - Manulife has confirmed to Sustainalytics that the bioenergy projects financed may use industrial waste and do not involve waste from fossil fuel and palm oil operations. The Company has also confirmed that hazardous waste, if used, will be treated in accordance with applicable local regulations.
 - The Framework specified that geothermal energy projects will be limited to those with a direct emissions threshold of 100 gCO₂/kWh.
 - As part of this category, the Company intends to finance (i) transmission infrastructure including inverters, transformers, energy storage and control systems; and (ii) production or manufacturing facilities dedicated to equipment, feedstock or components for renewable energy generation facilities.
 - Sustainalytics views the expenditures in this category as aligned with market practice.
 - Under the Green Buildings category, Manulife contemplates investments in residential or commercial buildings that have achieved or are expected to achieve (i) greenhouse gas emission performance of top 15% within the local jurisdiction, based on a third-party assessment, or (ii) third-party green building certifications, including LEED Gold or Platinum,

- Energy Star 85 or above, BOMA BEST Gold or Platinum and BOMA 360 with the added requirement of Energy Star 85 or above. See Appendix 1 for further description of the referenced green building standards.
- Environmentally Sustainable Management of Natural Resources and Land Use expenditures related to sustainable forestry through third-party forest certifications, including Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). Sustainalytics considers these certifications to be credible and aligned with market practice. Please refer to Appendix 2 for an overview of these certification schemes.
 - Additionally, Manulife intends to finance the purchase and operation of sustainably managed farmland holdings certified under the Leading Harvest Farmland Management Standard 2020. Sustainalytics notes that while the green bond market typically looks at essential best management practices⁶ for financing expenditures associated with agricultural projects, the Leading Harvest standard calls for regional contextual best management practices.⁷ Sustainalytics encourages the issuer to report on best management practices followed.
 - Within the Energy Efficiency category, the Company intends to finance projects that are designed to improve the energy performance of buildings and supporting infrastructure. To be eligible, these projects are required to reduce energy consumption by at least 25%. Sustainalytics views positively the Framework's inclusion of a defined energy efficiency threshold on a portfolio basis for the installation of energy efficiency systems, equipment and technologies.
 - Energy efficient heating, ventilation, air conditioning, refrigeration, lighting and electrical equipment, with the exclusion of fossil-fuel powered equipment.
 - Installation and monitoring of energy performance technologies such as digital controls, sensors or building information systems.
 - Design and installation of energy monitoring systems such as metering, smart grids and load control systems. Manulife's Framework allows for allocation to "smart grid" investments. While noting the variety of definitions and applications of "smart grid" technology, Sustainalytics views positively investments that are designed to improve grid efficiency and encourages the Company to select projects that are clearly anticipated to deliver tangible efficiency improvements.
 - The Clean Transportation category contemplates investments in low-carbon vehicles and low-carbon transport assets. This may include:
 - Electric, fuel cell and hybrid electric light duty vehicles with an emissions threshold of 75 gCO₂/kilometer, and heavy goods vehicles with an emissions threshold of 25 gCO₂/tonne-kilometer.⁸
 - Rolling stock and vehicles for electrified public transport such as rail, trams, trolleybuses, cable cars, taxi and buses.
 - In addition, Manulife may finance infrastructure that is dedicated to mass public transportation that supports electrified freight rail. The Framework confirms the exclusion of railway lines that are dedicated to the transportation of fossil fuel.
 - Sustainalytics views positively the investments in electric vehicles for the purpose of providing public transport and considers the aforementioned thresholds as aligned with market expectations.
 - Within the Sustainable Water and Wastewater Management category, Manulife intends to finance new or existing facilities and infrastructure that reduce water consumption and improve resource efficiency. This may include collection, treatment, recycling, reuse of water, rainwater or wastewater. The Company has confirmed that this category would not involve any

⁶ Essential best management practices cover aspects such as prevention of soil compaction, maintenance of permanent grasslands, nutrient management plan to optimize fertilization and improve nitrogen use efficiency, minimization of post-harvest loss etc. For more details, see: https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy-annexes_en.pdf

⁷ Regional agricultural best management practices under the Leading Harvest Standard refer to the practices developed by regional agricultural universities in the U.S. to manage issues such as soil health, water conservation, crop protection, energy use and air impacts, climate change impacts etc. based on relevant local contexts, For additional information, see: https://static1.squarespace.com/static/5df405bb116ac7759bac2e37/t/604fc0abcff5bf247242f7d4/1615839424334/LeadingHarvest_GuidanceDocument.pdf

⁸ Manulife has confirmed that it intends to finance projects that align with the mentioned emissions thresholds calculated per NEDC or WLTP test procedures.

- expenditures related to fossil fuel operations and therefore Sustainalytics considers this category to be aligned with market practice.
- As part of this category, Manulife may finance water distribution projects including aqueducts, pumps, drainage and sewage systems, tunnels and canals. These investments are in line with market practice.
 - Additionally, projects may also relate to flood prevention, defense, storm water management, installations such as green roofs, wetlands, retention berms, reservoirs, lagoons, sluice gates, drainage systems, tunnels, channels. The Company has confirmed that such investments would be based on climate vulnerability assessments and adaptation plans in response to identified risks. Sustainalytics considers the undertaking of prior risk assessment as well as the stated investments as aligned with market expectations for water resource efficiency projects.
- Manulife may finance Pollution Prevention and Control activities related to the development, construction, acquisition, installation, operation and upgrades of new or existing projects that reduce emissions and waste generated. Such expenditures may include facilities, systems and equipment for collection, treatment, recycling, reuse of emissions, waste, hazardous waste or contaminated soil as well as the diversion of waste from landfills.
 - For expenditures in this category, Manulife has confirmed that it does not intend to finance: (i) any expenditures related to fossil fuel operations or technologies that rely on fossil fuels; (ii) soil remediation projects, where the contamination was caused by the same entity seeking financing; (iii) vehicles used for waste collection; and (iv) electronic waste. The activities contemplated are in line with market expectations for pollution prevention investments.
 - Under the Access to Essential Services category, Manulife intends to invest in the construction, renovation or maintenance of facilities, equipment or services related to non-profit, public, free or substantially subsidized healthcare and education across the United States and Canada. Manulife has confirmed that these investments will be limited to facilities that guarantee access regardless of ability to pay for underserved populations such as women, minorities and households in the US whose income is below 80% of the Area Median Income (AMI).⁹
 - Healthcare expenditures in this category may include hospitals and clinics as well as digital healthcare facilities, services or equipment that augment healthcare provided by such facilities. In addition, Manulife may also finance laboratories that are either attached to hospitals or provide medical diagnostic services for patients, as well as elder care centers.
 - For education-related expenditures, the Company intends to finance childcare facilities, schools as well as services that support vocational training and adult education for the target populations.
 - Based on the assurance of access and affordability for defined target populations, Sustainalytics views investments in this category as aligned with market practice.
 - The Affordable Housing category includes investments in the purchase, construction, operation or maintenance of residential buildings that provide housing for low-income households in the United States and Canada. Low-income households will be defined as households whose incomes are below 80% of AMI in the US,¹⁰ and incomes below 50% of the median income, in Canada.¹¹ Investments may include further targeting such as social housing projects that provide rental homes specifically for low-income teachers, nurses, elderly and infirmed. Manulife has confirmed that it will ensure ongoing affordability of housing for the target population by investing in projects where the rents are capped at 80% of the average market rent. Based on the defined target population as well as assurance of affordability, Sustainalytics considers this category to be aligned with market practice.
 - Sustainalytics notes that the Framework excludes the financing of certain industries, including tobacco, alcohol, weapons, gambling and adult entertainment, and considers these exclusionary criteria as strengthening the Framework.

⁹ As defined by the US Department of Housing and Urban Development (HUD) for purposes of determining the eligibility of applicants for certain federal housing programs. For additional information on income limits, see: <https://www.huduser.gov/portal/datasets/il.html>

¹⁰ Ibid.

¹¹ In accordance with the low-income definition set by Statistics Canada. For more information, see: <https://www150.statcan.gc.ca/n1/pub/75f0011x/2012001/notes/low-faible-eng.htm#a5>

- **Project Evaluation and Selection:**
 - Manulife’s Sustainability Accounting team is responsible for maintaining an inventory of General Account assets that meet the Eligibility Criteria of the Framework and structures the allocation of proceeds. Senior officers on the General Account investment team review the proposed allocation of proceeds. The Manulife Sustainable Bonds Council consisting of the Chief Financial Officer, the Chief Investment Officer and the Global Treasurer has final approval on project selection. Manulife’s General Account’s investments are subject to identification, management and assessment of ESG risks in accordance with the Company’s ESG Guidelines, in the regular course of evaluating and monitoring risks. Sustainalytics considers the risk management system to be adequate and aligned with market expectation. For additional detail, see Section 2.
 - Based on the establishment of a project evaluation and selection process, Sustainalytics considers this process to be in line with market practice.
- **Management of Proceeds:**
 - Manulife has established a Sustainable Bond Register to track net proceeds of Sustainable Bond issuances to Eligible Assets. The Register contains relevant information on each Sustainable Bond and specific details of Eligible Assets. The net proceeds are fully allocated within 18 months of issuance and pending full allocation, net proceeds are held in cash or liquid securities in accordance with Manulife’s normal liquidity management policy. Manulife’s Sustainability Accounting is responsible for the management of proceeds.
 - Based on the presence of an internal tracking system and a temporary allocation of proceeds, Sustainalytics considers this process to be in line with market practice.
- **Reporting:**
 - Manulife has committed to allocation reporting and publishes an annual report on the company website. Allocation reporting will include details per category of Eligibility Criteria, examples of financed projects, and the balance of unallocated proceeds. Impact metrics include avoided greenhouse gas emissions across all green categories, renewable energy produced, number and area of green buildings certified, acres financed under sustainable forestry, reduction of energy and water consumption, waste reduction, number of healthcare, education and affordable housing facilities/units financed and beneficiaries served, as well as the affordable housing rents when compared with market average.
 - Based on reporting commitments, Sustainalytics considers this process to be in line with market practice.

Alignment with Sustainability Bond Guidelines 2021

Sustainalytics has determined that the Manulife Sustainable Bond Framework aligns with the four core components of the GBP and SBP. For detailed information please refer to Appendix 3: Sustainability Bond/ Sustainability Bond Programme External Review Form.

Section 2: Sustainability Strategy of Manulife

Contribution of Framework to Manulife’s sustainability strategy

Sustainalytics is of the opinion that Manulife demonstrates its commitment to sustainability with a focus on the following key environmental and social areas: (i) supporting the transition to a low carbon economy; and (ii) health and wellbeing of stakeholders and the community.

Manulife’s Climate Action Plan includes a target to be net zero in its investment portfolio by 2050.¹² Manulife has committed to the Science Based Targets initiative (SBTi) to guide target setting and progress reporting. It has also committed to deliver shorter-term targets for the most carbon intensive portions of the investment portfolio.¹³ Manulife is growing its investments in forestry and agriculture to support nature-based solutions for carbon emission reduction. To guide the Company’s net zero transition, Manulife has an Executive Sustainability Council (ESC) chaired by the Global Chief Marketing Officer, consisting of the Global Chief Sustainability Officer, along with nine members of the Executive Leadership Team, including the CEO.¹⁴ With

¹² Manulife, “2020 Sustainability Report and Public Accountability Statement”, at: [Manulife 2020 Sustainability Report and Public Accountability Statement](#)

¹³ Manulife, “Our Journey to Net-Zero”, at: <https://www.manulife.com/content/dam/corporate/global/en/documents/pas/climate-approach-en-2020.pdf>

¹⁴ Manulife, Sustainability Governance, (2020), at: <https://www.manulife.com/en/about/sustainability/governance.html>

a two-year rotational chair position, the ESC is responsible for setting Manulife's sustainability ambition and direction and to ensure the execution of its sustainability strategy.

Manulife reported carbon neutrality through its Scope 1 & 2 emissions from its operations in 2020, due to carbon removals from 5.4 million acres of forestry and 470,000 acres of farmland.¹² In addition, under its Climate Plan, Manulife aims to achieve a reduction of operational Scope 1 and 2 emissions by 35% from a 2019 baseline by 2035. This will be achieved through measures that improve energy efficiency, such as fuel switching and the use of onsite renewables in buildings. As of year-end 2020, over 80% of the Company's owned real estate achieved a sustainability certification. In line with its environmental commitments, as of year-end 2020, Manulife invested USD 39.8 billion in renewable energy, energy efficiency, green buildings, sustainably managed forests and farmland and clean transportation.¹² In 2017, Manulife issued SGD 0.5 billion (approximately USD 0.37 billion) and in 2018 CAD 0.6 billion (approximately USD 0.47 billion) in green bonds targeted at low carbon investments and led to 150,000 kWh in carbon dioxide avoided across investments. To further its impact beyond own operations, Manulife also provides sustainable investing options to its clients through various products such as its Sustainable Asia Bond Strategy and Global Climate Pooled strategy.¹³

Regarding Manulife's social pillar, the Company focuses on supporting groups that are excluded from accessing financial services, such as young people and women, through a range of financial products. In 2020, Manulife partnered with charitable organisation, YMCA, to offer programmes that help students build skills and confidence in financial literacy in Canada such as the Lift Off to Higher Education programme. Additionally, the New Beginnings Stepping Into Success Programme offered by Manulife in 2020 is designed to empower disadvantaged women to develop self-confidence and financial self-sufficiency. Manulife offers the Peso Smart Financial Literacy Programme designed to teach the basics of saving and investing to public school children in the Philippines.¹⁵

Sustainalytics is of the opinion that the Manulife Sustainable Bond Framework is aligned with the Company's overall sustainability strategy and initiatives and will further the Company's action on its key environmental and social priorities.

Well-positioned to address common environmental and social risks associated with the projects

While Sustainalytics recognizes that the use of proceeds from the Framework will be directed towards eligible projects that are expected to have positive environmental and social impact, Sustainalytics is aware that such eligible projects could also lead to negative environmental and social outcomes. Some key risks associated with the eligible projects, could include occupational health and safety, local community opposition, emissions, effluents, and waste.

Sustainalytics is of the opinion that Manulife is able to manage and/or mitigate potential risks through implementation of the following:

- Manulife is a signatory to several global sustainability initiatives, including the United Nations (UN) Principles for Responsible Investment¹⁶, Accounting4Sustainability,¹⁷ Climate Action 100+¹⁸, United Nations Environment Programme (UNEP) Finance4 Initiative¹⁹, and the Equator Principles²⁰. Sustainalytics considers the Equator Principles to be a robust proxy for environmental, social and governance legislation and Manulife reports annually on the implementation of these principles.
- Manulife General Account's ESG Guidelines ensures the integration of environmental, social and governance risk factors into the investment process. It covers the entire portfolio, including green bond eligible investments and requires the screening, monitoring and approval of ESG risks and opportunities as aligned with the Equator Principles.²⁰
- Manulife's stakeholder engagement process includes identifying primary topics of interest for each stakeholder group through its materiality assessment to determine engagement processes with customers, employees, shareholders, regulators, civil society, suppliers and communities.²¹ The Code of Business Ethics outlines how ethical standards are managed in respect to Manulife's external engagement and internal relationships.

¹⁵ Manulife, "2020 Sustainability Report and Public Accountability Statement", at: Manulife 2020 Sustainability Report and Public Accountability Statement

¹⁶ UN Principles for Responsible Investment, "About the PRI", at: [About the PRI | Other | PRI \(unpri.org\)](https://www.unpri.org)

¹⁷ The network of Chief Financial Officers, senior finance professionals and accounting bodies: <https://www.accountingforsustainability.org/>

¹⁸ Climate Action 100+, "About Climate Action 100+", at: [About Climate Action 100+ | Climate Action 100+](https://www.climateaction100.org/)

¹⁹ UN Environment Programme Finance Initiative "About Us", at: [About Us – United Nations Environment – Finance Initiative \(unepfi.org\)](https://www.unepfi.org/)

²⁰ Equator Principles, "About", at: [The Equator Principles – The Equator Principles \(equator-principles.com\)](https://www.equator-principles.com/)

²¹ Manulife, "2020 Sustainability Report and Public Accountability Statement" (2020), at: Manulife 2020 Sustainability Report and Public Accountability Statement

Based on these policies, standards and assessments, Sustainalytics is of the opinion that Manulife has implemented adequate measures and is well-positioned to manage and mitigate environmental and social risks commonly associated with the eligible categories.

Section 3: Impact of Use of Proceeds

All twelve use of proceeds categories are aligned with those recognized by GBP or SBP. Sustainalytics has focused on three below where the impact is specifically relevant in the local context.

Importance of energy efficiency and green buildings in reducing emissions

According to the UNEP, the building sector is a significant contributor to both global energy use and total CO₂ emissions, with building construction and operations accounting for 36% of global final energy use and contributing nearly 40% of energy-related CO₂ emissions globally.²² In the U.S., residential and commercial buildings account for 39% of total energy consumption and 72% of national electricity consumption.²³ In Canada, such buildings accounted for approximately 20% of the total energy consumption in 2020.²⁴ According to the World Green Building Council, decarbonization of the building sector is slowing down globally (almost halving from 2016 to 2019) and efforts need to double in order to achieve net-zero carbon for buildings by 2050.²⁵ A 2020 International Energy Agency (IEA) analysis shows that globally, improvements in energy efficiency, as measured by primary energy intensity has been declining since 2015, and is expected to continue to remain well below the required levels to meet global sustainability and climate goals.²⁶ This reality is exacerbated by the ongoing COVID-19 pandemic, the economic effects of which, according to the IEA analysis, could lead to a drop in investments in energy efficient technologies.²⁷ In this context, Manulife's investments in eligible projects in energy efficiency and in green buildings are likely to support efforts towards global decarbonization as well as help meet regional and global emissions reduction goals.

Importance of renewable energy in the U.S. and Canada

According to the Intergovernmental Panel on Climate Change, as global energy demand rises at increasingly rapid rates due to population growth, shifting towards clean energy plays an important role in meeting the Paris Agreement's goal to limit temperature increases well below 2°C, and ideally to 1.5°C.²⁸ Globally, while the share of renewable energy in energy production increased by 7.6% in 2019,²⁹ it contributed to only 5% of the global primary energy supply.³⁰ The International Renewable Energy Agency states that the total share of renewable energy must rise to approximately 66% of the total primary energy supply by 2050 in order to meet the 2°C target.³¹

Although renewable energy generation in the U.S. has experienced significant growth since 2008, it accounted for only 11% of the country's total energy consumption and approximately 17% of electricity generation in 2019.³² Specifically, wind energy contributed to 7.3% of total electricity generation in the country, while solar energy contributed 1.8% in the same year.³³ According to the Department of Energy's National Renewable Energy Laboratory, by increasing renewable electricity generation from technologies that are presently available, there is capacity for 80% of the country's electricity to be generated from renewable energy by 2050.³⁴

²² UNEP "Global Status Report: Towards a zero-emission, efficient and resilient buildings and construction sector", (2018), at: <https://www.unep.org/resources/report/global-status-report>

²³ EPA Energy and Environment, Electricity Customers: <https://www.epa.gov/energy/electricity-customers#industrial>

²⁴ Natural Resources Canada, "Energy Fact Book 2020-2021", at: https://www.nrcan.gc.ca/sites/nrcan/files/energy/energy_fact/energy-factbook-2020-2021-English.pdf

²⁵ United Nations Environment Programme report, "Global Status Report 2020", at: https://globalabc.org/sites/default/files/inline-files/2020%20Buildings%20GSR_FULL%20REPORT.pdf

²⁶ International Energy Agency, "Energy Efficiency 2020", at: <https://www.iea.org/reports/energy-efficiency-2020>

²⁷ *Ibid.*

²⁸ IPCC website, "Global Warming of 1.5°C", at: <https://www.ipcc.ch/sr15/>

²⁹ UNEP website, "Uptick for renewable electricity generation in 2019", at: <https://www.unenvironment.org/news-and-stories/story/uptick-renewable-electricitygeneration-2019>

³⁰ BP report, "Statistical Review of World Energy 2020", at: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energyeconomics/statistical-review/bp-stats-review-2020-full-report.pdf>

³¹ IRENA report, "Global Energy Transformation", at: https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Apr/IRENA_Report_GET_2018.pdf

³² EIA website, "U.S. primary energy consumption by energy source, (2019)", at: <https://www.eia.gov/energyexplained/us-energy-facts/>

³³ EIA website, "What is U.S. electricity generation by source", at: <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3>

³⁴ National Renewable Energy Laboratory report, "Renewable Electricity Futures Study", at: <https://www.nrel.gov/docs/fy13osti/52409-ES.pdf>

In Canada, renewable energy from hydro, wind, solar, biomass, geothermal and tidal sources accounted for approximately 67% of the country's total electricity generation in 2019.³⁵ While historically, hydropower has been the biggest source of energy in Canada, (accounting for around 60% of the total electricity generated in 2019³⁶), other renewable sources are expected to reach 12% of the total electricity generation by 2035.³⁷ The Pan-Canadian Framework on Clean Growth and Climate Change calls for the phase out of all traditional coal power plants by 2030 and to increase the use of renewable and non-emitting sources of energy in the country.³⁸

Considering the above, Sustainalytics believes that the activities carried out under the Framework, including investments and financing of generation, transmission, and distribution of renewable energy, are expected to meaningfully contribute towards increasing the share of renewable energy generation in U.S. and Canada, and positively impact global decarbonization efforts.

Importance of access to healthcare in the U.S.

The World Health Organization has noted the important linkages between good health and sustained economic and social development and poverty reduction³⁹. In the U.S., most Americans rely on private health insurance to cover their medical costs. With the enactment of the Affordable Care Act ("ACA") in 2010, the federal government sought to make affordable health insurance available to more people, expand Medicaid programme to cover low-income adults, and support innovative medical care delivery methods.⁴⁰ It was established on the basis of a "shared responsibility" between the government, employers, and individuals to ensure that all Americans gain access to affordable and good-quality health insurance.⁴¹ The percentage of people with health insurance coverage for 2017 was 91.2%, with 67.2% of individuals being covered by private health insurance and 37.7% of individuals⁴² that are covered by government health insurance; 8.8% of individuals did not have health coverage.⁴³ In addition, U.S. health care spending is the highest on a per capita basis among developed countries due mainly to higher prices on a per-service basis,⁴⁴ and lags in term of access, administrative efficiency, equity and health care outcomes domains in comparison to other developed nations.⁴⁵ In this context, Manulife's investments to enhance access to healthcare for underserved populations in the U.S. are likely to have positive social impacts. Overall Sustainalytics is of the opinion that the eligible expenses under the Framework will contribute to the provision of accessible and efficient healthcare services for underserved populations.

Alignment with/contribution to SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 by the United Nations General Assembly and form an agenda for achieving sustainable development by the year 2030. The bond(s) issued under the Manulife Sustainable Bond Framework advances the following SDGs and targets:

Use of Proceeds Category	SDG	SDG target
Renewable Energy	7. Affordable and Clean Energy	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix
Green Buildings	11. Sustainable Cities and Communities	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by

³⁵ Government of Canada, "Electricity Facts", at: <https://www.nrcan.gc.ca/science-data/data-analysis/energy-data-analysis/energy-facts/electricity-facts/20068>

³⁶ *Ibid.*

³⁷ International Trade Administration, "Canada – Renewable Energy", at: <https://www.trade.gov/energy-resource-guide-canada-renewable-energy>

³⁸ Government of Canada, "Pan-Canadian Framework on Clean Growth and Climate Change", (2016) at:

https://publications.gc.ca/collections/collection_2017/eccc/En4-294-2016-eng.pdf

³⁹ WHO, "Universal health coverage", at: https://www.who.int/healthsystems/universal_health_coverage/en/

⁴⁰ U.S. Centers for Medicare & Medicaid Services, "Affordable Care Act (ACA)", at: <https://www.healthcare.gov/glossary/affordable-care-act/>

⁴¹ The Commonwealth Fund, "The U.S. Health Care System", at: https://international.commonwealthfund.org/countries/usa/united_states/

⁴² These numbers may sum to more than 100, as individuals may have more than one coverage type during the calendar year.

⁴³ United States Census Bureau, "Health Insurance Coverage in the United States: 2017", (2018), at:

<https://www.census.gov/library/publications/2018/demo/p60-264.html>.

⁴⁴ John Hopkins Bloomberg School of Public Health, "U.S. Health Care Spending Highest Among Developed Countries", (2019), at:

<https://www.jhsph.edu/news/news-releases/2019/us-health-care-spending-highest-among-developed-countries.html>.

⁴⁵ The Commonwealth Fund, "Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care", (2017), at: https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_fund_report_2017_jul_schneider_mirror_mirror_2017.pdf.

		paying special attention to air quality and municipal and other waste management
Environmentally Sustainable Management of Living Natural Resources and Land Use	15. Life on Land	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
Energy Efficiency	7. Affordable and Clean Energy	7.3 By 2030, double the global rate of improvement in energy efficiency
Clean Transportation	11. Sustainable Cities and Communities	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
Sustainable Water and Wastewater Management	6. Clean Water and Sanitation	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
Pollution Prevention and Control	11. Sustainable Cities and Communities	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
Access to Essential Services	10. Reduced Inequality	10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
Affordable Housing	11. Sustainable Cities and Communities	11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

Conclusion

Manulife has developed the Manulife Sustainable Bond Framework under which it may issue sustainability bonds and use the proceeds to finance projects that reduce GHG emissions, improve waste and water management, promote sustainable management of land and increase access to affordable healthcare, education and housing.. Sustainalytics considers that the projects funded by the sustainability bond proceeds are expected to provide positive environmental and social impact.

The Manulife Sustainable Bond Framework outlines a process by which proceeds will be tracked, allocated, and managed, and commitments have been made for reporting on the allocation and impact of the use of proceeds. Furthermore, Sustainalytics believes that the Manulife Sustainable Bond Framework is aligned with the overall sustainability strategy of the company and that the use of proceeds categories will contribute to the advancement of the UN Sustainable Development Goals 6, 7, 10, 11 and 15. Additionally, Sustainalytics is of the opinion that Manulife has adequate measures to identify, manage and mitigate environmental and social risks commonly associated with the eligible projects funded by the use of proceeds.

Based on the above, Sustainalytics is confident that Manulife is well-positioned to issue sustainability bonds and that that Manulife Sustainable Bond Framework is robust, transparent, and in alignment with the four core components of the Green Bond Principles (2021) and Social Bond Principles (2021).

Appendices

Appendix 1: Assessment of Green Building Certification Schemes





	LEED ⁴⁶	BOMA BEST ⁴⁷	BOMA 360 ⁴⁸	ENERGY STAR ⁴⁹
Background	Leadership in Energy and Environmental Design (LEED) is a US Certification System for residential and commercial buildings used worldwide. LEED was developed by the non-profit U.S. Green Building Council (USGBC) and covers the design, construction, maintenance and operation of buildings.	BOMA BEST, administered by the Building Owners and Managers Association (BOMA) of Canada, is a certification program for existing buildings. The assessment considers performance and operation of buildings in a wide range of performance and operations categories.	The BOMA 360 Performance Program is sponsored by BOMA International. An independent council appointed by the BOMA International Chair provides oversight for the program.	ENERGY STAR is a U.S. Environmental Protection Agency voluntary program that provides independently certified energy efficiency ratings for products, homes, buildings, and industrial plants. Certification is given on an annual basis, so a building must maintain its high performance to be certified year to year.
Certification levels	<ul style="list-style-type: none"> • Certified • Silver • Gold • Platinum 	<ul style="list-style-type: none"> • Certified • Bronze • Silver • Gold • Platinum 	N/A	<ul style="list-style-type: none"> • 1-100 score, 75 is minimum for certification.
Areas of assessment	<ul style="list-style-type: none"> • Energy and atmosphere • Sustainable Sites • Location and Transportation • Materials and resources • Water efficiency • Indoor environmental quality • Innovation in Design • Regional Priority 	<ul style="list-style-type: none"> • Energy • Water • Air • Comfort • Health and Wellness • Custodial • Purchasing • Waste • Site • Stakeholder Engagement 	<p>The BOMA 360 Performance Program evaluates buildings against industry best practices in 6 major areas of building operation.</p> <ul style="list-style-type: none"> • Building operations and management • Life safety, security and risk management • Training and education • Energy • Environmental/sustainability • Tenant relations/community involvement <p>Individual buildings that satisfy the requirements in all 6 areas are awarded the BOMA 360 designation.</p>	<ul style="list-style-type: none"> • Energy Use
Requirements	<p>Minimum requirements independent of level of certification; point-based scoring system weighted by category to determine certification level.</p> <p>The rating system is adjusted to apply to specific sectors, such as: New Construction, Major Renovation, Core and Shell Development, Schools-/Retail-/Healthcare New Construction and Major Renovations, and Existing Buildings: Operation and Maintenance.</p>	<p>Minimum requirements independent of level of certification; score based on checklist to determine certification level.</p> <p>The minimum best practices and category scoring is adjusted for seven different asset classes: office, enclosed shopping centres, light industrial, open air retail, universal, MURB, and health care.</p>	<p>Only occupied commercial office buildings and industrial buildings are eligible for the BOMA 360 Performance Program designation.</p> <p>Commercial office includes: multi-tenant office buildings; single-tenant office buildings; corporate facilities; government buildings; medical office buildings; suburban office parks; and multi-use/mixed-use buildings.</p> <p>Buildings must be at least 50 percent occupied or leased at the time of application.</p>	<p>1-100 score based on energy use, as calculated through the Portfolio Manager tool. Raw score is adjusted based on location, operating conditions, and other factors. The numerical score indicates performance better than at least that percentage of similar buildings nationwide.</p>

⁴⁶ USGBC, "LEED rating system" at: www.usgbc.org/LEED

⁴⁷ Building Owners and Managers Association of British Columbia, "Building Environmental Standards" at: <https://www.boma.bc.ca/green-buildings/boma-best/>

⁴⁸ The BOMA 360 Performance Program, at: https://www.boma.org/BOMA/Recognition-Awards/BOMA_360_Performance.aspx

⁴⁹ ENERGY STAR, at: https://www.energystar.gov/buildings/building_recognition/building_certification

			For multi-use buildings (i.e. office/retail, office/residential, mixed-use, etc.), information should be reported only on the office portion of the building. If the building contains no occupied commercial office space as described above, or is a hotel, apartment/multi-family, or retail/shopping center it is not eligible for participation.	
Qualitative Considerations	Widely accepted within the industry, both in North America and internationally, and considered a guarantee of strong performance.	Most commonly used certification for existing buildings in Canada, and considered less administratively burdensome for existing buildings.		Accounts only for energy use, not other measures of environmental performance. It is a key component of other green building certification schemes.
Performance display				

Appendix 2: Assessment of Forestry and Agriculture Certification Schemes

	Programme for the Endorsement of Forest Certification (PEFC) ⁵⁰	Forest Stewardship Council (FSC) ⁵¹
Background	Founded in 1999, the Programme for the Endorsement of Forest Certification (PEFC) is a non-profit organization that promotes sustainable forest management through independent third-party certification, this includes assessments, endorsements and recognition of national forest certification systems. PEFC was created in response to the specific requirements of small- and family forest owners as an international umbrella organization.	The Forest Stewardship (FSC) is a non-profit organization established in 1993 that aims to promote sustainable forest management practice by evaluating forest management planning and practices independently against FSC's standards.
Basic Principles	<ul style="list-style-type: none"> Maintenance and appropriate enhancement of forest resources and their contribution to the global carbon cycle Maintenance and enhancement of forest ecosystem health and vitality Maintenance and encouragement of productive functions of forests (wood and no-wood) Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems Maintenance and appropriate enhancement of protective functions in forest management (notably soil and water) Maintenance of socioeconomic functions and conditions Compliance with legal requirements 	<ul style="list-style-type: none"> Compliance with laws and FSC principles Tenure and use rights and responsibilities Indigenous peoples' rights Community relations and workers' rights Benefits from the forests Environmental impact Management plans Monitoring and assessment Special sites – high conservation value forests (HCVF) Plantations
Types of standards/bench marks	<ul style="list-style-type: none"> Sustainable Forest Management benchmark – international requirements for sustainable forest management. National forest management standards must meet these requirements in order to obtain PEFC endorsement Group Forest Management Certification – outlines the requirements for national forest certification systems who have group forest management certification 	<ul style="list-style-type: none"> Forest Management certification (for single/multiple applicant(s) – industrial or private forest owners, forest license holders, community forests, and government-managed forests) Small and Low Intensity Management Forests (SLIMFs) program (for small forests and forests that are managed at low intensity would be eligible) Chain of Custody (CoC) certification (for supply chain companies' planning, practices and products – all

⁵⁰ PEFC, Standards and Implementation: <https://www.pefc.org/standards-implementation>

⁵¹ Forest Stewardship Council, FSC Principles and Criteria for Forest Stewardship: https://ca.fsc.org/preview_principles-criteria-v5_a-1112.pdf

	<ul style="list-style-type: none"> Standard Setting – covers the processes that must be adhered to during the development, review and revision of national forest management standards Chain of Custody – outlines the conditions for obtaining CoC certification for forest-based products PEFC logo Usage Rules – outlines the requirements entities must abide by when using the PEFC logo Endorsement of National Systems – outlines the process that national systems must go through to achieve PEFC endorsement 	<p>operations that want to produce or make claims related to FSC-certified products must possess this certificate)</p> <ul style="list-style-type: none"> Controlled Wood verification (for assurance that 100% virgin fiber mixed with FSC-certified and recycled fiber originates from a verified and approved source)
Governance	<p>PEFC’s governance structure is formed by the General Assembly (GA) which is the highest authority and decision-making body. It is made up of all PEFC members, including national and international stakeholders. In general, PEFC’s governance structure is more representative of industry and government stakeholders than of social or environmental groups. Members vote on key decisions including endorsements, international standards, new members, statutes and budgets. All national members have between one and seven votes, depending on membership fees, while international stakeholder members have one vote each.</p>	<p>The General Assembly is comprised of all FSC members and constitutes the highest decision-making body. Members can apply to join one of three chambers – environmental, social, or economic – that are further divided into northern and southern sub-chambers. Each chamber maintains 33.3% of the weight in votes, and votes are weighted so that the North and South hold an equal portion of authority in each chamber, to ensure influence is shared equitably between interest groups and countries with different levels of economic development.</p>
Scope	<p>Multi-stakeholder participation is required in the governance of national schemes as well as in the standard-setting process. Standards and normative documents are reviewed periodically at intervals that do not exceed five years. The PEFC Standard Setting standard is based on ISO/IEC Code for good practice for standardization (Guide 59)⁵² and the ISEAL Code of Good Practice for Setting Social and Environmental Standards.</p>	<p>FSC is a global, multi-stakeholder owned system. All FSC standards and policies are set by a consultative process. There is an FSC Global standard and for certain countries FSC National standards. Economic, social, and environmental interests have equal weight in the standard setting process. FSC follows the ISEAL Code of Good Practice for Setting Social and Environmental Standards.</p>
Chain-of-Custody	<ul style="list-style-type: none"> Quality or environmental management systems (ISO 9001:2008 or ISO 14001:2004 respectively) may be used to implement the minimum requirements for chain-of-custody management systems required by PEFC Only accredited certification bodies can undertake certification CoC requirements include specifications for physical separation of wood and percentage-based methods for products with mixed content. The CoC standard includes specifications for tracking and collecting and maintaining documentation about the origin of the materials The CoC standard includes specifications for the physical separation of certified and non-certified wood The CoC standard includes specifications about procedures for dealing with complains related to participant’s chain of custody 	<ul style="list-style-type: none"> The Chain-of-Custody (CoC) standard is evaluated by a third-party body that is accredited by FSC and compliant with international standards CoC standard includes procedures for tracking wood origin CoC standard includes specifications for the physical separation of certified and non-certified wood, and for the percentage of mixed content (certified and non-certified) of products CoC certificates state the geographical location of the producer and the standards against which the process was evaluated. Certificates also state the starting and finishing point of the CoC
Non-certified wood sources	<p>The PEFC’s Due Diligence System requires participants to establish systems to minimize the risk of sourcing raw materials from:</p> <ol style="list-style-type: none"> forest management activities that do not comply with local, national or international laws related to: <ul style="list-style-type: none"> operations and harvesting, including land use conversion, management of areas with designated high environmental and cultural values, protected and endangered species, including CITES species, health and labour issues, indigenous peoples’ property, tenure and use rights, payment of royalties and taxes. genetically modified organisms, 	<p>FSC’s Controlled Wood Standard establishes requirements to participants to establish supply-chain control systems, and documentation to avoid sourcing materials from controversial sources, including:</p> <ol style="list-style-type: none"> Illegally harvested wood, including wood that is harvested without legal authorization, from protected areas, without payment of appropriate taxes and fees, using fraudulent papers and mechanisms, in violation of CITES requirements, and others, Wood harvested in violation of traditional and civil rights, Wood harvested in forests where high conservation values are threatened by management activities, Wood harvested in forests being converted from forests and other wooded ecosystems to plantations or non-forest uses, Wood from management units in which genetically modified trees are planted.

⁵² ISO, ISO/IEC Guide 59:2019: <https://www.iso.org/standard/23390.html>

	c. forest conversion, including conversion of primary forests to forest plantations.	
Accreditation/verification	<p>Accreditation is carried out by an accreditation body (AB). In the same way that a certification body checks that a company meets the PEFC standard, the accreditation body checks that a certification body meets specific PEFC and ISO requirements. Through the accreditation process, PEFC has assurance that certification bodies are independent and impartial, that they follow PEFC certification procedures.</p> <p>PEFC does not have their own accreditation body. Like with the majority of ISO based certifications, PEFC relies on national ABs under the umbrella of the International Accreditation Forum (IAF). National ABs need to be a member of the IAF, which means they must follow IAF's rules and regulations.</p>	FSC-accredited Certification Bodies (CB) conduct an initial assessment, upon successful completion companies are granted a 5-year certificate. Companies must undergo an annual audit and a reassessment audit every 5 years. Certification Bodies undergo annual audits from Accreditation Services International (ASI) to ensure conformance with ISO standard requirements.
Qualitative considerations	Sustainalytics views both FSC and PEFC as being robust, credible standards that are based on comprehensive principles and criteria that are aligned with ISO. Both schemes have received praise for their contribution to sustainable forest management practices ⁵³ and both have also faced criticism from civil society actors. ^{54,55} In certain instances, these standards go above and beyond national regulation and are capable of providing a high level of assurance that sustainable forest management practices are in place. However, in other cases, the standards are similar or equal to national legislation and provide little additional assurance. Ultimately, the level of assurance that can be provided by either scheme is contingent upon several factors including the certification bodies conducting audits, national regulations and local context.	

Leading Harvest Farmland Management Standard⁵⁶	
Background	Leading Harvest Farmland Management Standard 2020 was developed by Leading Harvest, a sustainable agriculture non-profit governed by multi stakeholder Board consisting of farmers, food retailers, environmental NGOs, labor organizations, consumers and investors. It is a third-party audited certification that seeks to provide assurance of sustainability for farmland management.
Clear positive impact	Promote sustainable farmland management practices.
Minimum standards	<p>Requirements vary regionally and are guided by regional agricultural best management practices. These are developed by regional agricultural universities in the U.S based on local conditions and cover the following aspects:</p> <ol style="list-style-type: none"> 1. Sustainable Agriculture Management (external factors) 2. Soil Health and Conservation 3. Water Resources 4. Use of Agricultural Chemicals 5. Energy Use, Air Quality, and Climate Change 6. Waste Management 7. Conservation of Biodiversity 8. Protection of Special Sites (social and cultural) 9. Local Communities 10. Personnel and Contract Management Company Employees 11. Legal and Regulatory Compliance 12. Management Review and Continual Improvement 13. Tenant-operated Operations
Scope of certification or programme	The standard applies to all farmland across all crops and regions of the U.S. Farmland includes agricultural land, cropland, rangeland, grassland, pasture land, incidental forest land and wetlands that are part of a farm or farm management unit. It excludes animal agricultural operation (except for land that is used in the process) and forest and wood-fiber management.


⁵³ FESPA, FSC, PEFC and ISO 38200: <https://www.fespa.com/en/news-media/blog/fsc-pefc-and-iso-38200>

⁵⁴ Yale Environment 360, Greenwashed Timber: How Sustainable Forest Certification Has Failed: <https://e360.yale.edu/features/greenwashed-timber-how-sustainable-forest-certification-has-failed>

⁵⁵ EIA, PEFC: A Fig Leaf for Stolen Timber: <https://eia-global.org/blog-posts/PEFC-fig-leaf-for-stolen-timber>

⁵⁶ Leading Harvest Farmland Management Standard 2020, at:

https://static1.squarespace.com/static/5df405bb116ac7759bac2e37/t/5e9a2c4366bc693a2ee1cb8f/1587162181074/LeadingHarvest_TheStandard.pdf

Verification of standards and risk mitigation	Certification done by independent, third-party auditors and has to be renewed every three years.
Third party expertise and multi-stakeholder process	The Standard is governed by a multi-stakeholder board. LH is also in the process of establishing a Technical Advisory Group made of external experts and advisors responsible for ongoing review and revision of the Standard.
Performance Display	
Third-party verified	All auditors must conform to the requirements of ISO/IEC 17021-1:2015: and ISO/IEC TS 17021-2:2016. In addition, all certification bodies and auditors must conform to all applicable ANSI National Accreditation Board requirements and International Accreditation Forum Mandatory Documents.
Qualitative considerations	It is an outcome-based standard where there is flexibility for farm owners/ managers to adopt a variety of measures to achieve sustainability outcomes. It covers over two million acres in the U.S

Appendix 3: Sustainability Bond / Sustainability Bond Programme - External Review Form

Section 1. Basic Information

Issuer name:	Manulife
Sustainability Bond ISIN or Issuer Sustainability Bond Framework Name, if applicable:	Manulife Sustainable Bond Framework
Review provider's name:	Sustainalytics
Completion date of this form:	February 16, 2022
Publication date of review publication:	

Section 2. Review overview

SCOPE OF REVIEW

The following may be used or adapted, where appropriate, to summarise the scope of the review.

The review assessed the following elements and confirmed their alignment with the GBP and SBP:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting |

ROLE(S) OF REVIEW PROVIDER

- | | |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2 nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Note: In case of multiple reviews / different providers, please provide separate forms for each review.

EXECUTIVE SUMMARY OF REVIEW and/or LINK TO FULL REVIEW (*if applicable*)

Please refer to Evaluation Summary above.

Section 3. Detailed review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

1. USE OF PROCEEDS

Overall comment on section (if applicable):

The eligible categories for the use of proceeds – Renewable Energy, Green Buildings, Environmentally Sustainable Management of Living Natural Resources and Land Use, Energy Efficiency, Clean Transportation, Sustainable Water and Wastewater Management, Pollution Prevention and Control, Access to Essential Services, Affordable Basic Infrastructure, Affordable Housing, Food Security and Sustainable Food Systems, Reduction of Income Inequalities – are aligned with those recognized by both the Green Bond Principles and Social Bond Principles. Sustainalytics considers that investments in the eligible categories may lead to positive environmental and social impacts and advance the UN Sustainable Development Goals, specifically SDG 6, 7, 10, 11 and 15.

Use of proceeds categories as per GBP:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Renewable energy | <input checked="" type="checkbox"/> Energy efficiency |
| <input checked="" type="checkbox"/> Pollution prevention and control | <input checked="" type="checkbox"/> Environmentally sustainable management of living natural resources and land use |
| <input type="checkbox"/> Terrestrial and aquatic biodiversity conservation | <input checked="" type="checkbox"/> Clean transportation |
| <input checked="" type="checkbox"/> Sustainable water and wastewater management | <input type="checkbox"/> Climate change adaptation |
| <input type="checkbox"/> Eco-efficient and/or circular economy adapted products, production technologies and processes | <input checked="" type="checkbox"/> Green buildings |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs | <input type="checkbox"/> Other (please specify): |

If applicable please specify the environmental taxonomy, if other than GBPs:

Use of proceeds categories as per SBP:

- | | |
|---|---|
| <input type="checkbox"/> Affordable basic infrastructure | <input checked="" type="checkbox"/> Access to essential services |
| <input checked="" type="checkbox"/> Affordable housing | <input type="checkbox"/> Employment generation (through SME financing and microfinance) |
| <input type="checkbox"/> Food security | <input type="checkbox"/> Socioeconomic advancement and empowerment |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with SBP categories, or other eligible areas not yet stated in SBP | <input type="checkbox"/> Other (please specify): |

If applicable please specify the social taxonomy, if other than SBP:

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Overall comment on section (if applicable):

Manulife's Sustainability Accounting team is responsible for maintaining an inventory of general account assets that are eligible under the Framework and structures the allocation of proceeds. Manulife's Sustainable Bonds Council provides final approval on project selection. Manulife's ESG guidelines are applicable to all allocation decisions made under the Framework. Sustainalytics considers the risk management system to be adequate and the project selection process to be in line with market practice.

Evaluation and selection

- | | |
|---|---|
| <input checked="" type="checkbox"/> Credentials on the issuer's social and green objectives | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Sustainability Bond proceeds | <input checked="" type="checkbox"/> Documented process to identify and manage potential ESG risks associated with the project |
| <input checked="" type="checkbox"/> Summary criteria for project evaluation and selection publicly available | <input type="checkbox"/> Other (please specify): |

Information on Responsibilities and Accountability

- | | |
|--|--|
| <input checked="" type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other (please specify): | |

3. MANAGEMENT OF PROCEEDS

Overall comment on section (if applicable):

Manulife has established a Sustainable Bond Register to track net proceeds which will be managed by its Sustainability Accounting team. The Company intends to fully allocate proceeds within 18 months of issuance. Pending full allocation, net proceeds will be held in cash or liquid securities. This is in line with market practice.

Tracking of proceeds:

- | |
|---|
| <input checked="" type="checkbox"/> Sustainability Bond proceeds segregated or tracked by the issuer in an appropriate manner |
| <input checked="" type="checkbox"/> Disclosure of intended types of temporary investment instruments for unallocated proceeds |
| <input type="checkbox"/> Other (please specify): |

Additional disclosure:

- | | |
|---|---|
| <input type="checkbox"/> Allocations to future investments only | <input checked="" type="checkbox"/> Allocations to both existing and future investments |
| <input type="checkbox"/> Allocation to individual disbursements | <input type="checkbox"/> Allocation to a portfolio of disbursements |
| <input checked="" type="checkbox"/> Disclosure of portfolio balance of unallocated proceeds | <input type="checkbox"/> Other (please specify): |

4. REPORTING

Overall comment on section (if applicable):

Manulife has committed to allocation reporting via an annual report on its website. In addition, Manulife is committed to reporting on relevant impact metrics. Sustainalytics views the allocation and impact reporting as aligned with market practice.

Use of proceeds reporting:

- | | |
|--|--|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other (please specify): |

Information reported:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Allocated amounts | <input type="checkbox"/> Sustainability Bond financed share of total investment |
| <input checked="" type="checkbox"/> Other (please specify):
Percentage and examples of refinanced projects, the remaining balance of unallocated proceeds | |

Frequency:

- | | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> Annual | <input type="checkbox"/> Semi-annual |
| <input type="checkbox"/> Other (please specify): | |

Impact reporting:

- | | |
|--|--|
| <input type="checkbox"/> Project-by-project | <input checked="" type="checkbox"/> On a project portfolio basis |
| <input type="checkbox"/> Linkage to individual bond(s) | <input type="checkbox"/> Other (please specify): |

Information reported (expected or ex-post):

- | | |
|---|---|
| <input checked="" type="checkbox"/> GHG Emissions / Savings | <input checked="" type="checkbox"/> Energy Savings |
| <input checked="" type="checkbox"/> Decrease in water use | <input checked="" type="checkbox"/> Number of beneficiaries |

Target populations

Other ESG indicators (please specify): renewable energy production, number and area of green buildings certified, acres financed under sustainable forestry, reduction of energy consumption and waste, number of healthcare, education and affordable housing facilities/units financed and beneficiaries served, affordable housing rents when compared with market average

Frequency:

Annual

Semi-annual

Other (please specify):

Means of Disclosure

Information published in financial report

Information published in sustainability report

Information published in ad hoc documents

Other (please specify): Annual report on the environmental and social performance of Eligible Assets.

Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review):

Where appropriate, please specify name and date of publication in the useful links section.

USEFUL LINKS (e.g. to review provider methodology or credentials, to issuer's documentation, etc.)

SPECIFY OTHER EXTERNAL REVIEWS AVAILABLE, IF APPROPRIATE

Type(s) of Review provided:

Consultancy (incl. 2nd opinion)

Certification

Verification / Audit

Rating

Other (please specify):

Review provider(s):**Date of publication:****ABOUT ROLE(S) OF REVIEW PROVIDERS AS DEFINED BY THE GBP AND THE SBP**

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- ii. **Verification:** An issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or sustainability criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally or socially sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Sustainability Bond proceeds, statement of environmental or social impact or alignment of reporting with the Principles may also be termed verification.
- iii. **Certification:** An issuer can have its Sustainability Bond or associated Sustainability Bond framework or Use of Proceeds certified against a recognised external sustainability standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.
- iv. **Green, Social and Sustainability Bond Scoring/Rating:** An issuer can have its Sustainability Bond, associated Sustainability Bond framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental and/or social performance data, process relative to the Principles, or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material sustainability risks.

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