

MANULIFE GREEN BOND

POST-ISSUANCE VERIFICATION LETTER

SOLAR ENERGY & WIND ENERGY CRITERIA OF THE CLIMATE BONDS STANDARD

Type of engagement: Assurance Engagement

Period engagement was carried out: October 24 – October 29, 2018

Approved verifier: Sustainalytics

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Scope and Objectives

In November 2017, Manulife issued a green bond aimed at financing the development, construction, operation, maintenance and upgrades of:

- i. Facilities and equipment wholly dedicated to the generation of renewable energy as defined by the International Renewable Energy Agency (IRENA) Statute,¹ including solar energy and wind energy;
- ii. Transmission infrastructure and other supporting infrastructure wholly dedicated to renewable energy generation facilities including inverters, transformers, energy storage systems, and control systems;
- iii. Production or manufacturing facilities wholly dedicated to equipment, feedstock, or components for renewable energy generation facilities.

In October 2018, Manulife engaged Sustainalytics to review the wind and solar energy projects financed through the issued green bonds and provide an assessment as to whether the projects met the Post-Issuance Requirements (Part A, Part B and Part C) of the Climate Bonds Standard.

Schedule 1 provides details of the green bond projects and Disbursement of Proceeds.

Compliance Evaluation Criteria

Post-issuance requirements under Climate Bonds Standards Version 2.1:

- Part A: General Requirements - All the requirements in Part A shall be met to be eligible for post-issuance certification.
- Part B: Eligible Projects & Assets - Part B requirements shall be met based on the projects & assets associated with the bond and the specified eligibility criteria.
- Part C: Requirements for Specific Bond Types - Part C requirements shall be met to be eligible for post-issuance certification and are used selectively, depending on the type of bond in question.

Issuing Entity's Responsibility

Manulife is responsible for providing accurate information and documentation relating to the details of the projects that have been funded, including description of projects and disbursed amounts.

¹ http://uat.irena.org/-/media/Files/IRENA/Agency/About-IRENA/Statute/IRENA_FC_Statute_signed_in_Bonn_26_01_2009_incl_declaration_on_further_authentic_versions.ashx?la=en&hash=FAB3B5AE51B8082B04A7BBB5BDE978065EF67D96&hash=FAB3B5AE51B8082B04A7BBB5BDE978065EF67D96

Independence and Quality Control

Sustainalytics, a leading provider of ESG and corporate governance research and ratings to investors, conducted the verification of Manulife's green bond, issued to finance solar and wind energy, and provided an independent opinion informing Manulife as to the conformance of the green bond with the Post-Issuance requirements and the solar and wind energy criteria of the Climate Bonds Standard.

Sustainalytics has relied on the information and the facts presented by Manulife with respect to the Nominated Projects. Sustainalytics is not responsible nor shall it be held liable if any of the opinions, findings, or conclusions it has set forth herein are not correct due to incorrect or incomplete data provided by Manulife.

Sustainalytics makes all efforts to ensure the highest quality and rigor during its assessment process and enlisted its Sustainability Bonds Review Committee to provide oversight over the assessment of the bond.

Verifier's Responsibility

Sustainalytics conducted the verification in accordance with the Climate Bonds Standard Version 2.1 and with International Standard on Assurance Engagements 3000 (ISAE 3000) – Assurance Engagements other than Audits or Reviews of Historical Information.

The work undertaken as part of this engagement included conversations with relevant Manulife employees and review of relevant documentation to verify conformance of Manulife's green bonds with the Post-Issuance Requirements (Part A, Part B and Part C) of the Climate Bonds Standard Version 2.1.

Exceptions

No exceptions were identified.

All projects aligned with the Post-Issuance requirements of the Climate Bonds Standard and were in conformance to the solar or wind energy sector criteria.

Conclusion

Based on the limited assurance procedures conducted,² nothing has come to Sustainalytics' attention that causes us to believe that, in all material respects, the allocation of SGD 497 million from the Manulife green bonds, issued to fund eligible green projects, is not in conformance with the Post-Issuance requirements of the Climate Bonds Standard.

² Sustainalytics limited assurance process includes reviewing the documentation relating to the details of the projects that have been funded, including description of projects and project impact, which were provided by the Issuer. The Issuer is responsible for providing accurate information. Sustainalytics has not conducted on-site visits to projects.

Detailed Findings

Eligibility Criteria	Procedure Performed	Factual Findings	Error or Exceptions Identified
Compliance to Part A: General Requirements	Verification of eight projects financed by the green bond in 2017 to determine if Part A: General Requirements were met (See Schedule 2A and 2B).	All eight projects reviewed complied with the General Requirements.	None
Compliance to Part B: Eligible Projects & Assets	Verification of eight projects financed by the green bond in 2017 to determine if projects fall into (i) one of the investment areas of the Climate Bonds Taxonomy (ii) meet the wind or solar energy sector technical criteria.	All eight projects fall under the wind or solar energy sector criteria and meet the requirements of the wind or solar energy sector technical criteria.	None
Compliance to Part C: Requirements for Specific Bond Types	Bond Type Applicable: Use of Proceeds Bond.	The requirements of Project Holding, Settlement Period and Earmarking have been met.	None

Schedule 1A: Example of Nominated Projects

Examples of Nominated Projects are provided below:

Project Name	Asset Type	Location	Size (MW)
Riviere-de-Moulins Wind Project	Wind	Quebec, Canada	350
Kingston Solar Project	Solar	Ontario, Canada	100
Mount Sainte-Marguerite Wind Farm	Wind	Quebec, Canada	147
Grand Renewable Solar Project	Solar	Ontario, Canada	100

Sustainalytics has reviewed the full list of Canadian and US solar and wind projects to which green bond proceeds have been allocated.

Schedule 1B: Detailed Overview of Allocations and Impacts

Details of the Allocations are provided below:

Asset Type	Location(s)	Amount Allocated (million SGD)	Installed capacity (MW)	Energy generated (MWh)	Avoided CO ₂ (tons)
Wind Energy	Canada	219	83	271,719	37,700
Solar Energy	Canada & US	278	44	61,007	15,000
	TOTAL:	497	127	332,726	52,700

NOTE:

The capacity, energy, and avoided emissions are calculated on a basis proportional to Manulife's share of debt and equity investments in the project, scaled to the amount financed by the green bond proceeds

Schedule 2A: Post-Issuance General Requirements of the Climate Bonds Standard

Nominated Projects & Assets	<p>4.1 Statement on the environmental objectives of the bond</p> <p>4.2 Nominated Projects meet the Climate Bonds criteria</p> <p>4.3 Confirmation that Nominated Projects and Assets will not be nominated to other Climate Bonds</p>
Use of Proceeds	<p>5.1 Net Proceeds of the bond allocated to the Nominated Projects</p> <p>5.2 Funds allocated to Nominated Projects within 24 months of issuance of the bond</p> <p>5.3 Estimate of the share of the Net Proceeds used for financing and re-financing</p> <p>5.4 Net Proceeds of the bond shall be tracked by the Issuer following a formal internal process</p> <p>5.5 Net Proceeds of the bond shall be no greater than the total investment or the total Fair Market Value³ of the Nominated Projects & Assets at the time of issuance</p>
Non-Contamination of Proceeds	<p>6.1 Tracking of proceeds</p> <p>6.2 Managing of unallocated proceeds</p> <p>6.3 In the case of a Force Majeure, the Issuer may apply to the Climate Bonds Standard Board for an extension to the asset allocation period</p>
Confidentiality	<p>7.1 Information about the Nominated Projects & Assets provided to the Verifier and to the Climate Bonds Standard Board</p> <p>7.2 Issuer should disclose information about the bond and the Nominated Projects & Assets to the market</p>
Reporting Post-Issuance	<p>8.1 Report containing the list of Nominated Projects & Assets to which proceeds of the bond have been allocated</p>

³ Manulife tracks the Carrying Value of the assets to remain in compliance with the Management of Proceeds section of the Manulife Green Bond Framework.

Schedule 2B: Conformance to the Post-Issuance Requirements of the Climate Bonds Standard

Procedure Performed	Factual Findings	Error or Exceptions Identified
Verification of Nominated Projects & Assets	<p>4.1 The objective of the bond is to primarily use proceeds to finance solar and wind energy projects.</p> <p>4.2 Manulife’s management confirms that the nominated projects meet the Eligibility Criteria.</p> <p>4.3 Manulife’s management confirms that the projects shall not be nominated to other Climate Bonds.</p>	None
Verification of requirements specified under Use of Proceeds	<p>5.1 Net Proceeds of the bond have been allocated to the eight Nominated Projects.</p> <p>5.2 Manulife’s management has confirmed that funds have been fully allocated to Nominated Projects at the time of issuance.</p> <p>5.3 Manulife’s management has confirmed that all Net Proceeds of the bond were used for financing only.</p> <p>5.4 Manulife’s management has confirmed that Net Proceeds of the bond have been tracked by the Issuer following a formal internal process.</p> <p>5.5 Manulife’s management has confirmed that the Net Proceeds of the bond were no greater than the total investment in the Nominated Projects.</p>	None
Verification of requirements specified under Non-Contamination of Proceeds	<p>6.1 Manulife’s management confirms that the proceeds have been segregated and tracked in a systematic manner and were exclusively allocated to the Nominated Projects.</p> <p>6.2 Manulife’s management confirms that the net proceeds were fully allocated at the time of issuances and were not invested in temporary instruments.</p> <p>6.3 N/A</p>	None
Verification of requirements specified under Confidentiality	<p>7.1 Manulife’s management confirms that all relevant information about the Nominated Projects has been provided to the Verifier and to the Climate Bonds Standard Board to support the assessment of conformance with the Climate Bonds Standard.</p> <p>7.2 Manulife’s management confirms that all relevant information about the bond and the Nominated Projects, aggregated at a level that respects confidentiality obligations, has been disclosed to the market.</p>	None
Verification of requirements specified under Reporting Post-Issuance	<p>8.1 Manulife’s management has provided a report containing the list of Nominated Projects to which proceeds of the bond have been allocated (See Schedule 1).</p>	None

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The client is fully responsible for certifying and ensuring its commitments' compliance, implementation and monitoring.

Sustainalytics

Sustainalytics is a leading independent ESG and corporate governance research, ratings and analytics firm that support investors around the world with the development and implementation of responsible investment strategies. With 13 offices globally, the firm partners with institutional investors who integrate ESG information and assessments into their investment processes. Spanning 30 countries, the world's leading issuers, from multinational corporations to financial institutions to governments, turn to Sustainalytics for second-party opinions on green and sustainable bond frameworks. Sustainalytics has been certified by the Climate Bonds Standard Board as a verifier organization, and supports various stakeholders in the development and verification of their frameworks. Global Capital named Sustainalytics the "Most Impressive Second Party Opinion Provider in 2017". In 2018, the firm was recognized as the "Largest External Reviewer" by the Climate Bonds Initiative as well as Environmental Finance. In addition, Sustainalytics received a Special Mention Sustainable Finance Award in 2018 from The Research Institute for Environmental Finance Japan for its contribution to the growth of the Japanese Green Bond Market.

For more information, visit www.sustainalytics.com

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