Manulife Second Green Bond

Type of Engagement: Annual Review  
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Engagement Team:  
Zach Margolis, zach.margolis@sustainalytics.com, 647-695-4341  
Winnie Toppo, winnie.toppo@sustainalytics.com, 647-317-3649

Introduction

In November 2017, Manulife released a Green Bond Framework1. In May 2018, Manulife issued its second green bond under the Framework, aimed at financing renewable energy, energy efficiency and sustainably managed forestry projects. In April 2019, Manulife engaged Sustainalytics to review the projects financed through its second green bond and provide an assessment as to whether the projects met the Use of Proceeds criteria and the Reporting commitments outlined in the Green Bond Framework.

Evaluation Criteria

Sustainalytics evaluated the projects and assets financed in 2018 based on whether the projects and programmes:

1. Met the Use of Proceeds and Eligibility Criteria outlined in the Green Bond Framework; and
2. Reported on qualitative and/or quantitative environmental performance indicators as outlined in the Green Bond Framework.

Table 1: Use of Proceeds and Eligibility Criteria

<table>
<thead>
<tr>
<th>Use of Proceeds</th>
<th>Eligibility Criteria</th>
</tr>
</thead>
</table>
| Renewable Energy | • 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) Statute2, including:  
|                 | o wind energy  
|                 | o solar energy  
|                 | o small-scale hydro (under 25 Mega Watts)  
|                 | o bio-energy from waste biomass  
|                 | o tidal energy  
|                 | o geothermal 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 |

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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, estimated and actual allocated amounts, and project impact.

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 Use of Proceeds. The work undertaken as part of this engagement included collection of documentation from Manulife employees and review of documentation to confirm the conformance with the Green Bond Framework.

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 made 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 review.

Conclusion

Based on the limited assurance procedures conducted, nothing has come to Sustainalytics’ attention that causes us to believe that, in all material respects, the reviewed projects, allocated through proceeds of Manulife’s Green Bond, are not in conformance with the Use of Proceeds and Reporting Criteria outlined in the Green Bond Framework. Furthermore, the methodology used to calculate estimated avoided CO2 emissions was assessed and found to be credible and based on accepted third party GHG emission calculation tools. Manulife has disclosed to Sustainalytics that the proceeds of the green bond were fully allocated at time of issuance, May 9, 2018.

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3 Sustainalytics’ limited assurance process includes reviewing the documentation relating to the details of the projects that have been financed, including description of projects, allocated amounts, 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

Table 3: Detailed Findings

<table>
<thead>
<tr>
<th>Eligibility Criteria</th>
<th>Procedure Performed</th>
<th>Factual Findings</th>
<th>Error or Exceptions Identified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Use of Proceeds Criteria</strong></td>
<td>Verification of the projects funded by the second green bond in 2018 to determine if projects aligned with the Use of Proceeds Criteria outlined in the Green Bond Framework and above in Table 1.</td>
<td>All projects reviewed complied with the Use of Proceeds criteria.</td>
<td>None</td>
</tr>
<tr>
<td><strong>Reporting Criteria</strong></td>
<td>Verification of the projects funded by the second green bond in 2018 to determine if the impact of projects was reported in line with the Green Bond Framework. For a list of KPIs reported please refer to Appendix 1.</td>
<td>All projects reviewed reported on at least one KPI per Use of Proceeds criteria.</td>
<td>None</td>
</tr>
</tbody>
</table>
## Appendix 1: Impact Reporting by Eligibility Criteria

<table>
<thead>
<tr>
<th>Use of Proceeds and Eligibility Criteria Category</th>
<th>Reported estimated emissions avoided (tonnes CO₂)</th>
<th>Other reported quantitative indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable Energy: Wind</td>
<td>725</td>
<td>24,173 MWh electricity generated⁴</td>
</tr>
<tr>
<td>Renewable Energy: Solar</td>
<td>19,760</td>
<td>77,343 MWh electricity generated⁵</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>44,535</td>
<td>32,635 MWh energy savings</td>
</tr>
<tr>
<td>Sustainably Managed Forestry</td>
<td>193,380</td>
<td>28,440 PEFC-certified acres⁶</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>258,400</strong></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**
The avoided emissions and other quantitative indicators 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.

⁴ Annual energy generation for wind power is calculated based on forecasted figures.
⁵ Annual energy generation for solar power is calculated based on estimated and actual figures.
⁶ Manulife has confirmed that the forestry projects to which green bond proceeds have been allocated are certified by Sustainable Forest Initiative (SFI) endorsed by the Programme for the Endorsement of Forest Certification (PEFC), and has provided information on the certifications for Sustainalytics' review.
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Sustainalytics

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