

LRQA Independent Assurance Statement

Relating to The Manufacturers Life Insurance Company's Greenhouse Gas Inventory for the 2019 calendar year

This Assurance Statement has been prepared for The Manufacturers Life Insurance Company in accordance with our contract.

Terms of Engagement

Lloyd's Register Quality Assurance Canada Ltd. (LRQA) was commissioned by The Manufacturers Life Insurance Company (Manulife) to provide independent assurance of its Greenhouse Gas (GHG) Emissions Inventory for the 2019 calendar year (CY 2019) against the assurance criteria below to a limited level of assurance using LRQA's verification procedure and ISO 14064 - Part 3 for greenhouse gas data.

Our assurance engagement covered Manulife's operations and activities for owned and leased facilities worldwide in three of four business units: Corporate, Real Estate, and NAL Resources. Hancock Natural Resources Group's (HNRG's) Scope 1 and Scope 2 GHG emissions were not included in this verification, though Scope 3 GHG emissions from business travel and paper use have been extrapolated across the entire organization. Specifically, this engagement covered the following requirements:

- Verifying conformance with:
 - Manulife's reporting methodologies for the selected datasets: Manulife's GHG Accounting Guidance
 - World Resources Institute / World Business Council for Sustainable Development Greenhouse Gas Protocol: A corporate accounting and reporting standard, revised edition (otherwise referred to as the WRI/WBCSD Protocol) for the GHG data¹
- Evaluating the accuracy and reliability of data and information for only the selected indicators listed below:
 - Direct (Scope 1), Energy Indirect (Scope 2) and Other Indirect (Scope 3) GHG emissions;
 - Scope 3 GHG emissions verified by LRQA only include GHG emissions from the following categories:
 - Business Travel
 - Data Centers
 - Paper Use, and
 - Waste
 - Energy use

Scope 3 emissions from municipal solid waste are currently being gathered for a portion of the properties in Manulife's portfolio. Therefore, LR was commissioned to verify the portion of data currently being gathered, presented below as percentages of the total portfolio for each business unit:

| Business Unit | Data Coverage ¹ (%) |
|----------------------|--------------------------------|
| Manulife Real Estate | 86 |
| Manulife Corporate | 40 |
| NAL Resources | 0 |
| HNRG | 0 |

1. Data coverage is percent of total floor area with reported consumption.

LRQA's responsibility is only to Manulife. LRQA disclaims any liability or responsibility to others as explained in the end footnote. Manulife's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the Report and for maintaining effective internal controls over the systems from which the Report is derived. Ultimately, the Report has been approved by, and remains the responsibility of Manulife.

¹ <http://www.ghgprotocol.org/>

LRQA's Opinion

Based on LRQA's approach, except for the effect of the matters described in the Basis for Qualified Opinion, nothing has come to our attention that would cause us to believe that Manulife has not, in all material respects:

- Met the requirements of the criteria listed above; and
- Disclosed accurate and reliable performance data and information as summarized in Table 1 below.

The opinion expressed is formed on the basis of a limited level of assurance and at the materiality of the professional judgement of the verifier.

Note: The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Basis for Qualified Opinion

Emissions from HFC's were not reported for NAL Resources. This omission is not material.

Table 1. Summary of Manulife's GHG Emissions for CY 2019:

| Environmental Data Parameter | Data | Units |
|---|---------------|--------------------------|
| Scope 1 GHG emissions ^{1,2} | 649,951 | Tonnes CO ₂ e |
| Scope 2 GHG emissions (Location-based) ² | 290,549 | Tonnes CO ₂ e |
| Scope 2 GHG emissions (Market-based) ² | 279,812 | Tonnes CO ₂ e |
| Scope 3 GHG emissions: Paper | 7,360 | Tonnes CO ₂ e |
| Scope 3 GHG emissions: Data Centers | 3,456 | Tonnes CO ₂ e |
| Scope 3 GHG emissions: Waste ³ | 2,782 | Tonnes CO ₂ e |
| Scope 3 GHG emissions: Business Travel | 25,835 | Tonnes CO ₂ e |
| Energy Use ⁴ | 2,399,206,257 | kWh equivalent |

1. This data does not include Scope 1 and 2 emissions from the HNRG business unit, as they have not been included in this verification, though Scope 3 emissions from business travel and paper use have been extrapolated to include HNRG.

2. Scope 2, Location-based and Scope 2, Market-based are defined in the GHG Protocol Scope 2 Guidance, 2015.

3. Waste data is currently being gathered for a portion of the properties in Manulife's portfolio. Data coverage percentages are included under in the Terms of Engagement section above.

4. Energy use includes kWh equivalent energy from use of electricity & steam, and combustion of natural gas & diesel fuel.

LRQA's Approach

LRQA's assurance engagements are carried out in accordance with our verification procedure. The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- interviewing relevant employees of the organization responsible for managing GHG emissions and energy use data and records; and
- verifying historical GHG emissions and energy use data and records at an aggregated level for the calendar year 2019
- auditing Manulife's data management systems to confirm that there were no significant errors, omissions or mis-statements in the inventory

LRQA's Standards, Competence and Independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 *Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* and ISO/IEC 17021 *Conformity assessment – Requirements for bodies providing audit and certification of management systems* that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

This verification assessment is the only work undertaken by LRQA for Manulife and as such does not compromise our independence or impartiality.

Signed

Dated: 4 May 2020



Brooke Farrell
LRQA Lead Verifier
On behalf of Lloyd's Register Quality Assurance Canada Ltd.
5420 North Service Road, Suite 506
Burlington, Ontario L7L 6C7xxxx

LRQA reference: CQA00000030

Lloyd's Register Group Limited, its affiliates and subsidiaries, including Lloyd's Register Quality Assurance Limited (LRQA), and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

The English version of this Assurance Statement is the only valid version. Lloyd's Register Group Limited assumes no responsibility for versions translated into other languages.

This Assurance Statement is only valid when published with the Report to which it refers. It may only be reproduced in its entirety.

Copyright © Lloyd's Register Quality Assurance Limited, 2020. A member of the Lloyd's Register Group.