

Assurance Statement related to Greenhouse Gas Emissions Inventory and Environmental Data for Calendar Year 2017 prepared for AvalonBay Communities Inc.

Terms of Engagement

This Assurance Statement has been prepared for AvalonBay Communities Inc. (AvalonBay).

Lloyd's Register Quality Assurance Inc. (LRQA), was commissioned by AvalonBay to assure its Greenhouse Gas (GHG) Emissions Inventory and Environmental Data Assertion for the calendar year (CY) 2017 (hereafter referred to as "the Reports").

The GHG Emissions Inventory includes direct (Scope 1) GHG emissions, energy indirect (Scope 2) GHG emissions and other indirect (Scope 3) GHG emissions (from business travel and employee commuting) reported using the operational control consolidation method.

The following were excluded from the GHG Emissions Inventory on the basis of their de minimis contribution to the total direct and energy indirect GHG emissions and sense-checked during the engagement:

- Fugitive release of refrigerant gas; and
- Combustion emissions from burning diesel fuel in emergency generators.

The Environmental Data Assertion includes the following parameters:

- Total Scope 1 energy – operational control (MWh);
- Total Scope 2 energy – operational control (MWh);
- Water consumption - financial control (m³); and
- Waste generated at 91% of communities – financial control (Metric Tons).

Reported water consumption and waste generation are post commencement of communities and therefore do not include data from construction operations. Also, AvalonBay waste generation data is currently gathered at the corporate level for only 91% of their properties; hence LRQA was commissioned to verify the portion of waste data currently being gathered by AvalonBay corporate.

Management Responsibility

The management of AvalonBay was responsible for preparing the Reports and for maintaining effective internal controls over the data and information disclosed. LRQA's responsibility was to carry out an assurance engagement on the Reports in accordance with our contract with AvalonBay.

Ultimately, the Reports have been approved by, and remain the responsibility of AvalonBay.

LRQA's Approach

Our verification has been conducted in accordance with ISO-14064-3:2006 *Specification with guidance for validation and verification of greenhouse gas assertions* for the GHG data and LRQA's verification procedure for the Environmental Data Assertion to provide limited assurance that the data as presented in the Reports for AvalonBay have been prepared in conformance with the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) GHG Protocol, the 2017 GRESB Real Estate Reference Guide, and AvalonBay's environmental data management processes.

To form our conclusions the assurance engagement was undertaken as a sampling exercise and covered the following activities:

- Conducted phone interviews with representatives from AvalonBay and the cloud based data management platform;
- Reviewed the processes for the management of data and information related to the Scope 1, Scope 2 and Scope 3 GHG emissions, energy consumption, water consumption and waste generation used at the AvalonBay corporate level;
- Interviewed relevant staff responsible for managing and maintaining data and information and for preparing the Reports for AvalonBay; and
- Verified the Scope 1, Scope 2 and Scope 3 GHG emissions, energy consumption, water consumption and waste generation for CY 2017 at the aggregated level.

Level of Assurance and Materiality

The opinion expressed in this Assurance Statement has been formed on the basis of a limited level of assurance and at a materiality of the professional judgement of the Verifier.

LRQA's Opinion

Based on LRQA's approach, nothing has come to our attention that would cause us to believe that the total Scope 1, Scope 2, and Scope 3 GHG emissions, and Environmental Data disclosed by AvalonBay in the Reports for CY 2017, as summarized in Table 1 below, are not materially correct and that the GHG Emissions Inventory and Environmental Data Assertion have not been prepared in conformance with WRI/WBCSD GHG Protocol, the 2017 GRESB Real Estate Reference Guide, and AvalonBay environmental data management processes, except for the following qualification:

- There was an unexplainable variance in Scope 2 emissions and Scope 2 energy between LRQA estimates and the final data reported in AvalonBay's data management platform. This misstatement was not material.

Signed



Dated: June 20, 2018

Derek Markolf
LRQA Lead Verifier
On behalf of Lloyd's Register Quality Assurance, Inc.,
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LRQA Reference: UQA00000422

Table 1. Summary of AvalonBay, GHG Emissions Inventory and Environmental Data CY 2017

Item	Quantity	Units
Scope 1 Emissions	19,008	Metric Tons CO ₂ e
Scope 2 Emissions Location-Based ¹	62,243	Metric Tons CO ₂ e
Scope 2 Emissions Market-Based ¹	62,243	Metric Tons CO ₂ e
Scope 3 Emissions (business travel)	376	Metric Tons CO ₂ e
Scope 3 Emissions (employee commuting)	5,891	Metric Tons CO ₂ e
Total Scope 1 Energy	104,390	MWh
Total Scope 2 Energy	198,261	MWh
Water Consumption (Communities only) ²	11,484,681	m ³
Subset of Waste Generated (Communities only) ^{3,4}	77,488	Metric Tons

1. Scope 2, Location-based and Scope 2, Market-based are defined in the GHG Protocol Scope 2 Guidance, 2015.
2. Water consumption does not include water consumed by the AvalonBay construction division.
3. Waste generation does not include waste generated by the AvalonBay construction division.
4. Waste generation data is only representative of 91% of AvalonBay communities.

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Due to inherent limitations in any internal control, it is possible that fraud, error, or non-compliance with laws and regulations may occur and not be detected. Further, the verification was not designed to detect all weakness or errors in internal controls so far as they relate to the requirements set out above as the verification has not been performed continuously throughout the period and the verification carried out on the relevant internal controls were on a test basis. Any projection of the evaluation of control to future periods is subject to the risk that the processes may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.

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