

## **Assurance Statement related to Greenhouse Gas Emissions Inventory and Environmental Data for Calendar Year 2015 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) 2015 (hereafter referred to as "the Reports").

The GHG Emissions Inventory includes direct (Scope 1) GHG emissions and energy indirect (Scope 2) GHG emissions 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 (m<sup>3</sup>); and
- Waste generated at 66% 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.

### **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 assertion* for the GHG data and LRQA's Verification Approach 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 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 a site visit to AvalonBay Corporate Headquarters and phone interviews with representatives from the cloud based data management platform;
- Reviewed the processes for the management of data and information related to the Scope 1 and Scope 2 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 and reporting the Reports for AvalonBay; and
- Verified the Scope 1 and Scope 2 GHG emissions, energy consumption, water consumption and waste generation for CY 2015 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 and Scope 2 GHG emissions, and Environmental Data disclosed by AvalonBay in the Reports for CY 2015, 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 and AvalonBay environmental data management processes, except for the following qualifications:

- AvalonBay is reporting Scope 1 and 2 GHG emissions related to energy used by retail operations co-located at AvalonBay communities. This misstatement is not material.
- LRQA was unable to verify the complete set of waste generation data for AvalonBay communities because LRQA was only commissioned to verify waste data from 66% of the communities.

Signed

Dated: June 20, 2016



Derek Markolf  
LRQA Lead Verifier  
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LRQA Reference: RMA10192A

**Table 1. Summary of AvalonBay, GHG Emissions Inventory and Environmental Data CY 2015**

Item	Quantity	Units
Scope 1 Emissions	20,137	Metric Tons CO <sub>2</sub> e
Scope 2 Emissions Location-Based	68,367	Metric Tons CO <sub>2</sub> e
Scope 2 Emissions Market-Based	68,367	Metric Tons CO <sub>2</sub> e
Total Scope 1 Energy	110,762	MWh
Total Scope 2 Energy	192,589	MWh
Water Consumption (Communities only) <sup>1</sup>	11,701,987	m <sup>3</sup>
Subset of Waste Generated (Communities only) <sup>2,3</sup>	42,397	Metric Tons

1. Water consumption does not include water consumed by the AvalonBay construction division.
2. Waste generation does not include waste generated by the AvalonBay construction division.
3. Waste generation data is only representative of 66% 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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