



## **Verification Report**

**Terra Global Capital LLC 2016 GHG Inventory**

Prepared for:

**Terra Global Capital LLC.**

December 12, 2017

Ruby Canyon Engineering  
743 Horizon Ct. Suite 385  
Grand Junction, Colorado 81506  
(970) 241-9298

# Table of Contents

- 1.0 Introduction..... 2
  - 1.1 Inventory Description ..... 2
  - 1.2 Responsible Party..... 2
  - 1.3 Verification Team ..... 2
  - 1.4 Objectives ..... 2
  - 1.5 Scope..... 2
  - 1.6 Verification Criteria ..... 3
- 2.0 Verification Activities Summary ..... 3
- 3.0 Verification Findings ..... 4
  - 3.1 Assessment of the GHG Emission Sources and Data Management System ..... 4
  - 3.2 Assessment of the GHG Emissions Calculations ..... 4
    - 3.3.1 Scope 2..... 4
- 4.0 Verification Results ..... 5
- 5.0 Conclusion ..... 5

## 1.0 Introduction

Ruby Canyon Engineering (RCE) was contracted by Terra Global Capital LLC (Member) to perform the third-party greenhouse gas (GHG) emissions inventory verification for facilities reporting under operational control to The Climate Registry's (TCR) reporting program. The Member is reporting as part of TCR's 2017 Batch Verification Program for reporting members. Members must not have more than 1,000 metric tons total CO<sub>2</sub>e emissions per emissions year, no process emissions, and fugitive emissions that comprise less than five percent of the entity's total emissions. In addition, Scope 1 and Scope 2 emissions must originate from only the following sources:

- Indirect emissions from electricity consumption;
- Direct emissions from stationary combustion for heating, cooling, or emergency electricity generation;
- Direct emissions from mobile combustion; and
- Fugitive emissions from refrigeration, air conditioning, and/or fire suppression.
- The inventory is required to include emissions from seven GHGs: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>); however, the Member's inventory includes only emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs.

### 1.1 Inventory Description

The Member's emissions inventory includes emissions from purchased electricity and purchased heating from one office building and fugitive emission from one small refrigerator.

### 1.2 Responsible Party

Terra Global Capital LLC  
220 Montgomery Street  
Suite 608  
San Francisco, California US

### 1.3 Verification Team

The RCE verification team consisted of the following individuals who were selected based upon verification experience and knowledge of general reporting of GHG emissions sources.

Lead Verifier: Samantha Phillips

Independent Peer Reviewer: Phillip Cunningham

### 1.4 Objectives

The objective of the verification activities was to ensure that the reported GHG emissions are complete, transparent, verifiable, and estimated and reported according to TCR's protocols and its reporting requirements for the voluntary reporting program. Furthermore, the verification activities ensure that the data provided to RCE is well documented and free of any material errors or omissions.

### 1.5 Scope

The scope of the verification consisted of the following independent and objective activities:

- Review the 2016 GHG emission sources;
- Review the 2016 inventory support documents;

- Review the organizational and operational boundaries;
- Review the inventory data acquisition and quality control procedures;
- Review the GHG emissions calculations;
- Review the documents and data against the Verification Criteria listed in Table 1;
- Issue requests for additional documentation, clarifications, and corrective actions as necessary; and
- Issue a Verification Statement, Verification Report, and List of Findings to the Member.

## 1.6 Verification Criteria

**Table 1. Verification Criteria**

Criteria	Details
Standards and Protocols for Verification	<ul style="list-style-type: none"> <li>• The Climate Registry’s General Reporting Protocol (GRP) Version 2.1 (January 2016)</li> <li>• The Climate Registry’s GRP Updates and Clarifications (June 2017)</li> <li>• The Climate Registry’s General Verification Protocol (GVP) Version 2.1 (June 2014)</li> <li>• The Climate Registry’s GVP Updates and Clarifications document (March 2016)</li> <li>• ISO 14064-3 Specification with guidance for the validation and verification of greenhouse gas assertions</li> </ul>
Reporting Year	2016
Reporting Basis	North America
Level of Assurance	Limited assurance batch
Materiality	A +/-5 percent materiality threshold assessed separately for Scope 1, Scope 2 location-based, and Scope 2 market-based emissions

## 2.0 Verification Activities Summary

As the first step in verification activities, RCE developed a verification plan to follow throughout the verification process. The verification plan included the following activities:

- Batch Verifications do not require case-specific COI assessments; however, RCE provided the required letter to TCR attesting that it has not provided consultancy services to the batch verification members, including the Member. RCE submitted the letter to TCR on June 16, 2017.
- RCE held a verification kickoff meeting with all batch verification members on July 11, 2017. During the kickoff meeting, RCE reviewed the verification objectives, verification process, and the verification schedule.
- RCE performed a strategic review and risk assessment of the received data and support documents in order to understand the scope and areas of potential risk in the GHG emissions inventory.
- RCE developed a risk-based sampling plan based upon the strategic review and risk assessment. The verification team used the verification plan and sampling plan throughout the verification, and they were revised as needed based upon additional risk assessments.

- RCE performed a risk-based desktop review of the submitted verification documents. The review included an assessment of the GHG emissions calculation methods and inputs, source data completeness, GHG data management and monitoring systems, and company record retention practices.
- RCE submitted requests for additional documentation, clarifications, and corrective actions as necessary throughout the verification.
- RCE's independent peer reviewer conducted a review of the verification sampling, verification report, and verification statement.
- RCE issued a final Verification Report, Verification Statement, and List of Findings.
- RCE held an exit meeting with the Member.

## 3.0 Verification Findings

### 3.1 *Assessment of the GHG Emission Sources and Data Management System*

RCE interviewed Member personnel responsible for the development of the GHG assertion and discussed source data used in the development of the GHG emissions inventory. Data consisted of information from landlords regarding electricity usage in addition to lease agreements and letters from landlords containing pertinent information, such as square footage, regarding leased facilities. RCE reviewed the Member's procedures for data collection, data handling, and data QA/QC as well as record retention and backup procedures. RCE confirmed that these procedures were rigorous, that there are redundant procedures in place to ensure that data will be backed up in multiple locations, and that in the event that any data used as an input to calculate emissions is lost, it can be recovered.

### 3.2 *Assessment of the GHG Emissions Calculations*

The emissions calculations assessment included a review of the data inputs into The Climate Registry Information System (CRIS), calculation of the input values, and accuracy of the fuel types and calculation methodologies selected for each emissions source. RCE evaluated the completeness and validity of the original data and how the data was transferred to the GHG emissions reporting calculation spreadsheets and CRIS.

During the desktop review, RCE conducted cross checks of spreadsheet functionality and compared calculation methodologies in the spreadsheet and CRIS Report to the methods described by key personnel and to TCR reporting requirements and the General Reporting Protocol methodologies. RCE found that the GHG calculations were accurate and consistent with The Climate Registry's methodologies.

#### 3.3.1 Scope 1

RCE reviewed the SEM calculation of the fugitive refrigerants from one small refrigerator located at the members office. RCE reviewed the member's assertion spreadsheet as well as an image of the refrigerator specifications. RCE confirmed that the calculated emissions were entered in CRIS without error.

#### 3.3.2 Scope 2

RCE reviewed the calculation of purchased heating emissions from natural gas at the Member's leased offices. RCE reviewed the Member's assertion spreadsheet as well as leases and corresponding assumptions regarding natural gas usage, confirming that the amounts of natural gas usage entered into CRIS matched the data provided by the Member for both location-based and market-based emissions.

RCE reviewed the calculation of emissions from purchased electricity for Member buildings for both location-based and market-based emissions. All location-based purchased electricity was assigned the appropriate eGRID sub-region emission factor. Market-based emissions were the same as location-based. Finally, RCE recalculated the GHG emissions for Scope 2 and verified that the final reported emissions are materially correct.

## 4.0 Verification Results

The Member provided sufficient evidence and documentation of its emissions calculations, data collection procedures, and monitoring and quality control procedures for its facilities. The verification process focused on verifying the emissions calculations and the source data used by the Member to quantify its GHG emissions in accordance with The Climate Registry’s General Reporting Protocol. Table 2 defines the GHG emissions verified for 2016.

During the verification process, RCE made requests for additional documentation, clarifications, and corrective actions as necessary to complete the verification. The Member sufficiently addressed all requests. The details of these requests are documented in RCE’s List of Findings provided to the Member.

## 5.0 Conclusion

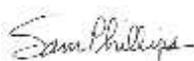
RCE conducted a risk-based analysis of the Member’s GHG emissions inventory and a strategic review of the inventory data and calculations in accordance with the requirements of TCR’s General Verification Protocol version 2.1 and ISO 14064-3. Based upon the processes and procedures and the evidence collected, RCE concludes that the GHG assertion is a fair representation of the GHG emissions for 2016 and can be considered verified to a limited level of assurance. Based on RCE’s verification activities and findings, nothing has come to RCE’s attention that the Member’s reported emissions are not prepared in all material respects in accordance with ISO 14064 and requirements of TCR’s General Reporting Protocol version 2.1.

**Table 2. Total Entity Emissions by Emission Type Under Operational Control (2016)**

<b>Emissions Verified</b>	<b>CO<sub>2</sub>e (metric tons)</b>
Fugitive Emissions	0.098
Scope 1 Total	0.098
Purchased Electricity – Location-based	1.59
Purchased Heating – Location-based	1.08
Scope 2 Location-Based Total	2.67
Purchased Electricity – Market-based	1.59
Purchased Heating – Market-based	1.08
Scope 2 Market-Based Total	2.67

*Individual categories may not sum to total due to rounding.*

**Lead Verifier Signature**



Samantha Phillips

**Independent Peer Reviewer Signature**



Phillip Cunningham