



Carbon Footprint Verification Report for  
Alliance Trust plc

8<sup>th</sup> February 2019

## Verification summary

Verifiers:	Georgina Whitlock, Senior Environmental Consultant, Carbon Footprint Ltd
Report reviewed by:	Hayley Maynard, Senior Environmental Consultant, Carbon Footprint Ltd
Inventory period verified:	1 <sup>st</sup> January 2018 to 31 <sup>st</sup> December 2018
Level of assurance:	Limited
Assurance being given to:	Sharon Winter Alliance Trust plc 8 West Marketgait Dundee DD1 1QN
Verification Standard:	ISO 14064-3: 2006
Methodology used for the calculation:	GHG Protocol

## Statement of verification

Alliance Trust plc  
8 West Marketgait  
Dundee  
DD1 1QN

6<sup>th</sup> February 2019

### Scope

Alliance Trust plc (henceforth referred to as Alliance Trust) engaged Carbon Footprint Ltd to review its 2018 Carbon Footprint and supporting evidence for the period 1<sup>st</sup> January 2018 to 31<sup>st</sup> December 2018. Alliance Trust is responsible for the information within the carbon footprint report. The responsibility of Carbon Footprint Ltd is to provide a conclusion as to whether the GHG assertions made are in accordance with the Greenhouse Gas (GHG) Protocol.

### Methodology

The verification was led by Georgina Whitlock, Senior Environmental Consultant, Carbon Footprint Ltd. Carbon Footprint Ltd completed the review in accordance with the 'ISO 14064 Part 3 (2006): *Greenhouse Gases: Specification with guidance for the validation and verification of greenhouse gas assertions*'. The work was undertaken to provide a limited level of assurance with respect to the GHG assertions made. Carbon Footprint Ltd believes that the review of the carbon footprint calculations and associated evidence, coupled with this subsequent report, provides a reasonable and fair basis for our conclusion.

The following data was within the scope of the verification (below shows the post-audit results):

- **Scope 1:** natural gas and refrigerant loss – **126.35 tCO<sub>2</sub>e**
- **Scope 2:** purchased electricity – **257.36 tCO<sub>2</sub>e (location-based) and 143.63 tCO<sub>2</sub>e (market-based)**
- **Scope 3:** business travel (air, rail, taxi and personal car), paper consumption, waste disposal (paper only), water (supply & wastewater treatment) and electricity transmission & distribution – **111.43 tCO<sub>2</sub>e**

**Location-based total: 495 tCO<sub>2</sub>e**  
**Market-based total: 381 tCO<sub>2</sub>e**

### Assurance opinion

Based on the results of our verification process, Carbon Footprint Ltd provides limited assurance of the GHG emissions assertion, **and found no evidence that the GHG emissions assertion:**

- is not materially correct;
- is not a fair representation of the GHG emissions data and information; and
- is not prepared in accordance with the GHG Protocol.

It is our opinion that Alliance Trust has established appropriate systems for the collection, aggregation and analysis of quantitative data for determination of GHG emissions for the stated period and boundaries.

A handwritten signature in black ink, appearing to read "Georgina Whitlock".

Georgina Whitlock, *MEnvSci (Hons)*  
Senior Environmental Consultant

# 1 Introduction

Alliance Trust plc (Alliance Trust) is an investment and financial services company, headquartered in Dundee, Scotland. This report provides the outcomes of the independent verification of Alliance Trust's Greenhouse Gas (GHG) assertion for the period 1<sup>st</sup> January 2018 to 31<sup>st</sup> December 2018, as calculated by Corporate Citizenship.

The verification was based on an assessment of Alliance Trust's 2018 Carbon Footprint Report, (version received on 4<sup>th</sup> February 2019), supplemented with a site visit and review of supporting evidence. A verification plan (Appendix 1) was devised at the preliminary stages of the assessment to guide the verification process. The sampling plan in Appendix 2 lists the primary data that was requested.

The verification was undertaken in line with the International Standard ISO 14064-3: 2006 '*Greenhouse gases- Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*' to a limited assurance level.

## 1.1 Objectives

The objectives are:

- To provide assurance to Alliance Trust, to ISO 14064-3 standard, that the GHG assertion is reliable and of sufficient quality for external voluntary reporting to the Carbon Disclosure Project (CDP).
- To provide a verification statement that meets the requirements of CDP.
- To assist internal purposes – mainly for CSR reporting and other disclosures; annual reports and tracking towards internal targets.

## 1.2 Scope

The GHG assertion that is being verified is Alliance Trust's Global Carbon Footprint for the period 1<sup>st</sup> January 2018 to 31<sup>st</sup> December 2018. The following sources of GHG emissions are within the scope of the verification:

- Scope 1 (direct): natural gas and refrigerant loss.
- Scope 2 (indirect): purchased electricity.
- Scope 3 (other indirect): business travel (air, rail, personal car, taxi), paper consumption, waste disposal (paper only), water (supply & wastewater treatment) and electricity transmission & distribution.

The GHG emissions have been consolidated through the operational control approach and are reported in terms of carbon dioxide equivalent (CO<sub>2</sub>e). Emissions for the individual GHGs have also been calculated separately in line with the GHG Protocol.

### 1.3 Materiality

A qualitative and quantitative evaluation of any errors, limitations or misrepresentations has been undertaken. The verification team, using professional judgment, determined whether any qualitative discrepancies could affect the overall GHG assertion and, in turn, have a material impact on the decisions of the intended user.

Any quantitative discrepancies were calculated individually to understand the impact of them as a percentage of the GHG assertion. The pre-defined materiality threshold is 1% of the total inventory.

### 1.4 Responsibility

Alliance Trust is responsible for the provision of the GHG assertion and the supporting information. Carbon Footprint Ltd was contracted to provide a third-party verification of this assertion, to a limited level of assurance. Appendix 3 provides a profile of the verification team.

### 1.5 The work undertaken

The verification undertaken by Carbon Footprint Ltd was conducted in accordance with ISO 14064-3: Greenhouse gases- part 3: *'Specification with guidance for the validation and verification of greenhouse gas assertions'*. This was to a limited level of assurance, as defined by the ISO 14064-3 standard. A verification plan (including sampling) was devised at the preliminary stages of the assessment to guide the verification process (see appendices).

In conformance with the ISO 14064-3 standard, the following activities were undertaken:

- Initial review of Alliance Trust's GHG documentation and methodologies, including historical GHG data for the period 1<sup>st</sup> January 2018 to 31<sup>st</sup> December 2018.
- Site visit, involving discussions with staff from Alliance Trust and Corporate Citizenship regarding:
  - Scope of calculation (including appraisal boundaries).
  - Input data sets, any missing data, estimations made and assumptions.
  - Calculation methodology and conversion factors used.
  - Quality control procedures.
  - Results & interpretation.

## 1.6 Abbreviations

AIB	Association of Issuing Bodies
AT	Alliance Trust plc
ATS	Alliance Trust Savings
CDP	Carbon Disclosure Project
CSR	Corporate Social Responsibility
Defra	Department for Environment, Food & Rural Affairs
FTE	Full-time equivalent
GHG	Greenhouse Gas
ISO	International Organisation for Standardisation
km	Kilometres
kWh	Kilowatt Hours
tCO <sub>2</sub> e	Tonnes of Carbon Dioxide Equivalent
WMG	West Marketgait

## 2 Verification results

### 2.1 Assessment of the GHG information system and its controls

#### 2.1.1 Boundary and data selection

There have been no changes to the organisational boundary this year. The GHG assessment covers Alliance Trust plc (AT) and its subsidiary Alliance Trust Savings (ATS). The lease for 7<sup>th</sup> floor Atria ended in July 2017 which means it is not included within this assessment.

All AT employees (approximately five people) are based at the West Marketgait (WMG) office in Dundee. The majority of ATS employees (approximately 250 people) are based at WMG with a further 50 employees based at the Atria office in Edinburgh. In 2017 ATS downsized its office space at Atria during its move from the 7<sup>th</sup> floor to the 5<sup>th</sup> floor. It is expected that AT will be moving premises during 2019.

The GHG emissions have been consolidated through the operational control approach and are reported in terms of carbon dioxide equivalent (CO<sub>2</sub>e). Figure 1 shows Alliance Trust’s operational boundary. Electricity transmission and distribution has been included for a subsequent year. Additional emission sources that have been included for the first time are: paper consumption, waste disposal (paper only) and water (supply & wastewater treatment).

Both location-based and market-based emissions have been calculated.

**Figure 1 – Assessment boundary**

Scope 1 Direct Emissions	Scope 2 Energy Indirect	Scope 3 Other Indirect
Fuel combustion <b>Natural gas</b>	Consumption of purchased electricity, heat steam & cooling  <b>Electricity</b>	Purchased materials and fuels <b>Paper and water</b>
Owned Transport <b>None</b>		Transmission & distribution of energy <b>Electricity</b>
Process emissions <b>None</b>		Leased assets, outsourcing and franchising <b>Energy use at downstream leased property investments where Alliance Trust is billed for the energy.</b>
Fugitive emissions <b>Refrigerant loss</b>		Energy use at downstream leased property investments which are directly metered to and paid for by the tenants.
		Transport related activities <b>Grey fleet car travel, taxi, flights and rail travel</b>
		Sold goods and services <b>None</b>
		Waste Disposal <b>Paper</b>

Key:

Within the assessment boundary	Outside of assessment boundary
--------------------------------	--------------------------------

## 2.1.2 Data management

The GHG data is collated from various sources such as utility bills and expense claims (obtained from the general ledger). Extracts from the general ledger are requested on a quarterly basis and checked using invoices. This data is then entered into a data collection spreadsheet provided by Corporate Citizenship, who carries out the GHG calculations and analysis.

For quality control, the collected data is compared against previous years and month-to-month in order to identify anomalies. Spot checks are carried out using provided evidence (e.g. invoices). Any queries are discussed with Alliance Trust and a log of queries and responses is maintained.

## 2.2 Data limitations

The accuracy of the energy and water data provided by Atria's management company is uncertain as source data is not provided with the spreadsheet and they have been unresponsive to Alliance Trust's attempts to obtain more information on how the data has been calculated and any estimations made.

WMG's water supplier was changed during the year. Since then, there has been issues with receiving invoices from the new supplier, which means half the year has required estimation.

## 2.3 Assessment of GHG data and information

### 2.3.1 Electricity consumption

Electricity consumption accounts for 56% of Alliance Trust's total GHG emissions. Below are the main observations from the audit:

#### **8 West Marketgait, Dundee (WMG)**

- Half-hourly meter.
- Owned and completely occupied by Alliance Trust (AT and ATS). Ground floor consists of the reception area, storage and server room. 1<sup>st</sup> floor is empty but ATS has one room as a training room. 2<sup>nd</sup> and 3<sup>rd</sup> floors are occupied by ATS and the 5<sup>th</sup> floor by AT.
- Utility bills were available during the audit for inspection. A sample was viewed to check supply address, data period and kWh consumption, and cross check against the data collection spreadsheet. All were found to be correct.
- Total figure in the data collection spreadsheet matched the one used in the calculation tool.
- Energy contract was switched to a renewable supply tariff in July 2018 (expiring 31<sup>st</sup> October 2019). Certificate from the energy provider (Engie) was viewed in the audit and confirms renewable supply.
- For the January-June 2018 consumption, a supply-specific emission factor (0.307 kgCO<sub>2</sub>e/kWh) was used (sourced from EON's website) to calculate the market-based emissions. The source was viewed in the audit and found to be appropriate.

### Atria (5<sup>th</sup> Floor)

- ATS occupy a portion of the 5<sup>th</sup> floor.
- The management company sent a spreadsheet of monthly consumption data. However, the validity of the data could not be confirmed as source data was not provided and they have been unresponsive to Alliance Trust's queries regarding how it has been calculated/estimated.
- Alliance Trust considered estimating the data using the 7<sup>th</sup> floor data from 2017, however it was decided to use the other data as the difference between the two values was small and the 5<sup>th</sup> floor data was slightly larger, therefore more conservative.
- Checked the data spreadsheet from the landlord and the total kWh matched the figure used in the calculation spreadsheet.

### 2.3.2 Natural gas consumption

Gas consumption accounts for 23% of Alliance Trust's total GHG emissions and 91% of the scope 1 emissions. Gas consumption for Atria has not been included as it is only used in communal areas.

#### Main observations for WMG:

- Invoices were provided during the audit for inspection.
- The bills that were viewed were all based on actual meter readings indicating the data accuracy is high.
- The supply address and data period were checked for the sampled bills and found to be correct. The kWh data was also cross-checked against the data collection spreadsheet and were found to be entered correctly.

### 2.3.3 Refrigerant loss

The same methodology as previous years has been used – the leakage rate method. There have been no changes in terms of equipment, only that the 7<sup>th</sup> floor is no longer included within the assessment. Alliance Trust confirmed that no major repairs were required outside normal servicing so it has been assumed that the leakage rate method has covered any likely leakages.

### 2.3.4 Business travel

#### Scope 3 – air, rail, taxi and personal car business travel

It has been noted that the amount of travel has significantly reduced since the previous year due to the use of more modern IT technology, reducing the need to travel.

#### **Personal car business travel (grey fleet)**

Where employees use their own vehicles for business travel, they claim back costs through the expenses system. This cost data was obtained from the general ledger and calculated back to miles using specific claim rates (e.g. 45p/mile). During the audit, extracts from the expenses system were viewed and checks were carried out on the methodology used and calculations. For AT this was

correct, however for ATS there was a typo in the conversion from miles to km. This was corrected during the audit as the error difference accounted for 4.67 tCO<sub>2</sub>e (approximately 1% of the total emissions). The average petrol car emission factor was used.

### **Taxi**

Taxi travel data is obtained from expenses. As with previous years, an average cost of £2.35 per mile was used to estimate mileage from the cost data. This was based on costs obtained from a local taxi provider for executive cars (£3/mile) and regular taxis (£1.70/mile). This methodology was deemed to be suitable and provided adequate accuracy.

### **Rail**

Cost data for rail travel has been obtained from expenses. An average figure of 30p/km (based on an average ticket for Dundee to Edinburgh – the most common journey taken) was used to estimate total distance travelled. This methodology is deemed to be acceptable and appropriate.

### **Flights**

Air travel accounts for 11% of Alliance Trust's total GHG emissions. The data has been obtained from Alliance Trust's expenses records (general ledger). The general ledger records the cost data, whether the flight is domestic or not and the departure/destination locations. All flights taken in 2018 were domestic (short-haul) and therefore the domestic emission factor was used. Radiative forcing was included (seen as best practice).

The distance travelled was calculated per flight using a website: [www.airmilescalculator.com](http://www.airmilescalculator.com). An example was calculated during the audit for Edinburgh to London Heathrow. The mileage figure provided by the website calculator tool matched that used in Alliance Trust's data spreadsheet. Return trips were multiplied by two. The results that the website calculator tool produced are what is expected therefore it is an acceptable tool to use.

### **2.3.5 Waste disposal – paper**

This is the first year that waste emissions have been calculated. Only paper has been included as data on type and number of reams can be obtained from procurement invoices. I recommend investigating whether data for other waste types can be obtained from invoices/waste transfer notes or estimated in future. The amount of paper waste was assumed to be 100% of the paper purchased, and it was assumed that it is all recycled. The method used to calculate the weight of total paper purchased was explained during the audit. The method was correct, however to save time or for use as a validation tool, I suggest using the following website: [www.papersizes.org](http://www.papersizes.org).

It was noticed that the A3 and A4 paper data for Atria had been mislabelled and a formula error meant that the emissions were not calculating correctly – these were both corrected during the audit.

As the data that was used relates to the total amount of paper purchased during the year, I recommended Alliance Trust include the 'upstream' emissions associated with production of the

purchased product (paper). This was added to the current carbon footprint when corrections were made, and accounts for 1% of the total emissions.

### 2.3.6 Water consumption

This is the first year that water consumption has been included. Emissions for both the water supply and wastewater treatment have been calculated.

Due to invoicing issues from changing suppliers, water data for WMG was extrapolated to 12 months based on 6 months of data (including some estimated meter readings). Monthly data was provided from the landlord for Atria, however there was no supporting evidence and the landlord has not explained if or how the data has been apportioned to Alliance Trust. In future I recommend you ask the management company if they can explain where/how they have obtained the data and any estimations they have made in the initial data request email.

## 2.4 Data calculations

Alliance Trust has calculated their GHG inventory by using the 2018 Defra emission factors. The emission factors used for the calculations have been verified as correct and appropriate for the data. The calculations are carried out using an excel spreadsheet, which is well laid out, easy to navigate with labelled and colour-coded sheets, and includes the input data all in one document. During the audit, spot checks were carried out on calculations in the calculation spreadsheet, and were found to be correct.

The 'market-based' electricity calculations were checked. For half of the period WMG was on a renewable tariff so that specific factor was used, and the other half was calculated using a specific emission factor obtained from the energy supplier's website. For Atria, the market-based emissions were calculated using the residual emission factor published in the most recent edition (July 2018) by Association of Issuing Bodies (AIB). The methodology and emission factors used are deemed to be appropriate for the data.

### 3 Conformance with verification criteria

The chosen methodology that has been used for accounting and reporting Alliance Trust's GHG inventory is the GHG Protocol Corporate Standard. Carbon Footprint Ltd has examined Alliance Trust's GHG assertion in relation to the GHG Protocol's accounting and reporting principles. The verification activities have shown that Alliance Trust has met the verification criteria satisfactorily.

**Relevance** – the data collected and reported reflects the significant environmental impacts of Alliance Trust's operations.

**Completeness** – emission sources that come within the reporting boundary have been quantified and reported where possible. Exclusions (if applicable) have been disclosed and justified.

**Consistency** – methodologies are documented and appear to be consistent.

**Transparency** – Alliance Trust has stated their approach to data collection and explained the assumptions and estimations made.

**Accuracy** – sufficient accuracy has been achieved, and quality control systems are in place to reduce uncertainties and errors where possible.

## 4 Conclusions

Alliance Trust's boundaries and system has been adequately designed to capture their most significant emission sources. It is good to see they have extended the scope 3 emissions this year to include waste disposal of paper and water consumption. It was advised during the audit that they consider including the upstream emissions associated with their paper use. This was taken on board and added whilst completing some minor corrections.

In conclusion, Carbon Footprint Ltd has verified Alliance Trust's GHG assertion in accordance with ISO 14064-3 (2006) standard to a limited level of assurance.

### 4.1 Recommendations

Carbon Footprint Ltd understands the data limitations Alliance Trust has encountered. Below are several recommendations to assist Alliance Trust in improving the quality of its GHG assertion:

#### Travel

- Record fuel type of employee's personal vehicles.

#### Waste

- Investigate whether data for other waste types can be obtained from invoices/waste transfer notes or estimated.

#### Process

- Ask the building management company if they can explain where/how they have obtained the data and any estimations they have made in the initial data request email/call.
- Use the [www.papersizes.org](http://www.papersizes.org) website to either calculate the weight of purchased paper or to check your own calculations are correct.

### 4.2 Assurance opinion

Based on the results of our verification process, Carbon Footprint Ltd provides limited assurance of the GHG emissions assertion, **and found no evidence that the GHG emissions assertion:**

- is not materially correct;
- is not a fair representation of the GHG emissions data and information; and
- is not prepared in accordance with the GHG Protocol.

It is Carbon Footprint Ltd's opinion that Alliance Trust has established appropriate systems for the collection, aggregation and analysis of quantitative data for determination of GHG emissions for the stated period and boundaries.

# Appendix 1

## Alliance Trust plc Verification Plan – Carbon Footprint 2018 (1<sup>st</sup> Jan 2018-31<sup>st</sup> Dec 2018)

5<sup>th</sup> February 2019

**Venue:** Corporate Citizenship's office

**Present:**

Georgina Whitlock, Carbon Footprint Ltd (Verifier)

Sharon Winter, Alliance Trust plc

Jayesh Shah, Corporate Citizenship

Sarah Bonham, Corporate Citizenship

ISO 14064-3 Ref.		ISO 14064-3 Verification Requirements	Evidence	Comments
4.3.1	Level of Assurance	To be agreed at the beginning	Anecdotal/email communication	Limited level of assurance
4.3.2	Objectives	To be agreed at the beginning	Anecdotal Proposal Verification report	For CDP and annual reporting
4.3.3	Criteria	To be agreed at the beginning	Anecdotal	GHG Protocol
4.3.4	Scope	Organisational boundaries, physical infrastructure & activities, GHG sources, type of GHGs, time period	Anecdotal CF Report Proposal	Scope 1, 2 & 3 1st January 2018 to 31st December 2018 Operational control
4.3.5	Materiality	Establish materiality	Verification report	Materiality threshold = 1%
4.4.2	Verification Plan	Document assurance level, objectives, criteria, scope, materiality & schedule.	This document Agenda	The meeting agenda and this table documents the verification plan.
4.4.3	Sampling Plan	Develop a sampling plan.	Sampling Plan (appendix 2)	Have seen primary data evidence for requested sites. Have seen secondary data & calculations for other GHG sources.

ISO 14064-3 Ref.		ISO 14064-3 Verification Requirements	Evidence	Comments
4.5	Assessment of the GHG information system & its controls	Processes for collecting, processing and reporting GHG information.	Anecdotal Verification report	Process same as last year – Corporate Citizenship provides a data entry template and requests supporting evidence.  Results discussed with Alliance Trust and justifications found for increases and reductions in emissions.
4.6	Assessment of GHG data & information  (Review of calculation methodology and conversion factors used)	Examination of the GHG data and information.	CF report, verification report, emails.	Energy invoices for West Marketgait were examined, as was the travel data obtained from the general ledger. Estimations and assumptions were discussed.  Carbon footprint calculations are undertaken by Corporate Citizenship using an excel-based tool.  2018 Defra emission factors are used. Most recent AIB residual factor is used (2017 factors published July 2018).  Several minor corrections were made during the audit. Upstream emissions of purchased paper were added during the re-calculation.  All recommended re-calculations were completed satisfactorily.
4.7	Assessment against verification criteria	Confirm whether the organisation conforms to the verification criteria.	Verification report	
4.8	Evaluation of the GHG assertion	Evaluate whether the evidence collected supports the GHG assertion.  Conclude whether or not the GHG assertion is without material discrepancy and whether the	Verification report	All significant sources of emissions are captured. Sufficient evidence was provided to support the assertion.

ISO 14064-3 Ref.		ISO 14064-3 Verification Requirements	Evidence	Comments
		verification activities provide the agreed level of assurance.		
4.9	Verification statement	A verification statement containing the level of assurance, objectives, scope, criteria, the GHG assertion and the verifier's opinion on the GHG assertion.	Verification statement	A verification statement will be issued, including the relevant information required by CDP.
4.10	Verification records	The verifier shall maintain records to demonstrate conformity to the requirements of ISO14064-3.	Verification statement and report.	This verification plan is the basis of recording the audit and capturing information.

## Appendix 2 – Sampling Plan

The sampling will be a risk-based approach in order to collect adequate evidence to support the limited level of assurance. Calculations and results will be reviewed and discussed as a desk-based exercise and during the site visit.

Sites and data sampled were chosen due to the materiality to the total carbon footprint and type of property ownership. In previous carbon footprint assessments, electricity consumption and air travel were the primary sources of Alliance Trust's GHG emissions. The West Marketgait office has the largest floor area occupied by Alliance Trust and is owned by the company. It also contributes the most to the electricity emissions and therefore was chosen to be audited.

Primary data (e.g. utility bills, expense claims, fuel card reports etc.) requested for:

- Electricity – West Marketgait
- Gas – West Marketgait
- Air travel
- Energy certificates (for market-based emissions)

Secondary data was reviewed for all other sites and emission sources.

## Appendix 3

### Carbon Footprint Ltd Verification Team

Carbon footprint Ltd has enabled the completion of the carbon footprints of over 20,000 businesses globally via our tools and consultancy. We are confident that we bring independent, ethical conduct, fair representation, due professional care and fresh insights to carbon management and verification activities.

We work with a vast range of companies, from SMEs to multinational blue chip corporations with goals to comply with legislation, cut the cost of carbon in their business, maximise sales by developing true sustainable credentials and prepare for future legislation.

We are a world leading carbon management company:

- We follow international standards, such as ISO14064-1, PAS2050, GHG Protocol, ISO14064-3 within our work
- We are ISO 14001:2015 and ISO 9001:2015 certified
- We are approved under the Quality Assurance Standard (QAS) – this means that our own carbon footprinting tools and methodology is independently audited by AEA-Ricardo.
- We work with other businesses to complete/validate GHG emissions for their Mandatory GHG Reporting and CDP reporting requirements
- We run the Carbon Academy (for peer group learning)
- We provide input and advice to the government on low carbon legislation

#### **Georgina Whitlock**

##### **Senior Environmental Consultant**

Georgina has a Master's degree in Environmental Science and is a member of IEMA. She has conducted numerous carbon footprint assessments to ISO14064-1 standard and verifications to ISO14064-3 standard. She also has experience in conducting energy, waste and general environmental audits.

#### **Hayley Maynard**

##### **Senior Environmental Consultant**

Hayley has a Bachelor's degree in Environmental Science. She has conducted many carbon footprint assessments following ISO14064-1/ GHG Protocol and has experience in conducting various types of audits and verifications. She is also a Display Energy Certificate auditor and ESOS Lead Assessor.

#### **John Buckley**

##### **Managing Director / Co-Founder Carbon Footprint Ltd**

John set up Carbon Footprint Ltd in 2005, and has managed the strategy and growth of the company. An experienced practitioner in this field, he has developed a number of tools around appraisal, verification, validation services and is regularly invited to produce keynote speeches and provide training around these subjects.