



Carbon Footprint Verification Report
for
Volex PLC

1st April 2023 to 31st March 2024

Verification summary

Verifiers:	Stephen Laurent, Environmental Consultant, Carbon Footprint Ltd
Report reviewed by:	Jenny Webb, Senior Environmental Consultant, Carbon Footprint Ltd
Authorised by:	Dr. Wendy Buckley, Client Director / Co-Founder Carbon Footprint Ltd, Carbon Footprint Ltd
Inventory period verified:	1 st April 2023 to 31 st March 2024
Level of assurance:	Limited
Assurance being given to:	Vibha Patil, Sustainability specialist Unit C1 Antura, Bond Close, Basingstoke, Hampshire, RG24 8PZ, United Kingdom
Verification Standard:	ISO 14064-3: 2019
Methodology used for the calculation:	ISO14064-3 standard

Statement of verification

Volex PLC
Unit C1 Antura, Bond Close,
Basingstoke, RG24 8PZ

29 May 2024

Scope

Volex PLC (henceforth referred to as Volex) engaged Carbon Footprint Ltd to verify its carbon footprint assessment and supporting evidence for the period **1st April 2023 to 31st March 2024**. Volex 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 statements made are in accordance with the Defra Reporting Guidelines.

Methodology

The verification was led by Stephen Laurent, Environmental Consultant, Carbon Footprint Ltd. Carbon Footprint Ltd completed the review in accordance with the [‘ISO 14064 Part 3 \(2019\): Greenhouse Gases: Specification with guidance for the verification and validation of greenhouse gas statements’](#). The work was undertaken to provide a Limited level of assurance with respect to the GHG statements made. Carbon Footprint Ltd believes that the review of the assessment 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	Emission Source	UK (tCO ₂ e)	Global incl. UK (tCO ₂ e)
Scope 1	Company Owned Vehicles	1	280
	On-site fuel use	18	1,417
	Refrigerants	-	79
Scope 2	District heating	-	236
	On-site consumption of purchased electricity	16	21,104
Scope 3	Hire cars	18	587
	Employee-owned car travel (grey fleet)	8	92
	Transmission and Distribution	1	1,504
Total tonnes of CO₂e (Scopes 1,2 and 3)		62	25,299
Intensity metric: tCO₂e per million USD revenue		-	27.62
Total energy consumption for SECR (kWh)		373,448	52,163,950

Assurance opinion

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

- is not materially correct and is not a fair representation of the GHG emissions data and information;
- has not been prepared in accordance with the ISO14064-3 standard.

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

Stephen Laurent, Msci
Environmental Consultant
Carbon Footprint Ltd.

Table of Contents

Verification summary..... 2

Statement of verification 3

1 Introduction 5

 1.1 Objectives 5

 1.2 Scope of verification 5

 1.3 Materiality 5

 1.4 Responsibility..... 6

 1.5 The work undertaken 6

 1.6 Independence..... 6

 1.7 Abbreviations..... 6

2 Verification results 7

 2.1 Assessment of the GHG information system and its controls..... 7

 2.2 Assessment of GHG data and information 9

 2.3 Data calculations 10

3 Conformance with verification criteria 11

4 Conclusions 11

 4.1 Recommendations..... 12

 4.2 Assurance opinion 12

Appendix 1 – Verification Plan..... 13

Appendix 2 – Sampling Plan..... 15

Appendix 3 – Verification Team..... 16

1 Introduction

Volex Plc (henceforth referred to as Volex) is a leading integrated manufacturing specialist for performance-critical applications and power products. Volex Plc employees roughly 15,000 people and operates 32 sites across the world.

This report provides the outcomes of the independent verification of Volex's global Greenhouse Gas (GHG) statement for the period **1st April 2023 to 31st March 2024**. The scope of the assessment is defined in section 2.

The verification was based on an assessment of Volex's 2024 carbon footprint report/calculations (version received on 30th April 2024), supplemented with a remote audit 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 documents requested for verification.

The verification was completed in line with the International Standard '[ISO 14064 Part 3 \(2019\): Greenhouse Gases: Specification with guidance for the verification and validation of greenhouse gas statements](#)' to a Limited assurance level.

1.1 Objectives

The objectives are:

- To provide assurance to Volex, to ISO 14064-3 standard, that the GHG statement is reliable and of sufficient quality.
- To provide a verification statement that meets the requirements of SECR reporting.
- To assist internal purposes – mainly for CSR reporting and other disclosures; annual reports and tracking towards internal targets.

1.2 Scope of verification

The GHG statement that is being verified is Volex's global carbon footprint for the period 1st April 2023 to 31st March 2024.

The GHG emissions have been consolidated through the financial control approach and are reported in terms of carbon dioxide equivalent (CO₂e).

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 statement and, in turn, have a material impact on the decisions of the intended user.

Quantitative discrepancies were calculated individually to understand the impact of them as a percentage of the GHG statement. The pre-defined materiality threshold is 5% of the total inventory.

1.4 Responsibility

Volex is responsible for the provision of the GHG statement and the supporting information. Carbon Footprint Ltd was contracted to provide a third-party verification of this statement, 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 (2019): Greenhouse gases- part 3: *'Greenhouse Gases: Specification with guidance for the verification and validation of greenhouse gas statements'*. 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 the GHG documentation and methodologies, including historical GHG data for the period 1st April 2023 to 31st March 2024.
- remote audit, involving discussions with staff from Volex 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 Independence

The verifier has remained independent from activity taken to calculate the GHG statement. The verifier has maintained objectivity during the audit, basing conclusions on evidence obtained during the audit.

1.7 Abbreviations

CDP	Carbon Disclosure Project
CSR	Corporate Social Responsibility
Defra	Department for Environment, Food & Rural Affairs
GHG	Greenhouse Gas
ISO	International Organisation for Standardisation
kWh	Kilowatt Hours
SECR	Streamlined Energy and Carbon Reporting
tCO ₂ e	Tonnes of Carbon Dioxide Equivalent

2 Verification results

2.1 Assessment of the GHG information system and its controls

2.1.1 Boundary and data selection

Organisational boundary

The GHG emissions have been consolidated through the financial control approach and are reported in terms of carbon dioxide equivalent (CO₂e), for the global operations. The following sites are within the scope of the assessment:

- Manufacturing sites
- Offices

The Aylesbury office (UK) has been excluded from the assessment due to difficulties in accessing energy consumption data. This is deemed to be acceptable as the size of the office would mean its emissions are immaterial to the overall total.

Reporting boundary

The operational boundary was reviewed and has been determined that all material emission sources have been captured within the assessment boundary. This is summarised below.

Scope 1: Company Owned Vehicles
On-site fuel use
Refrigerants

Scope 2: District heating
On-site consumption of purchased electricity
Electricity, heat or steam generated on-site

Scope 3: Hire cars
District heating transmission and distribution
Employee-owned car travel (grey fleet)
Transmission and Distribution

Exclusions: Waste, Water, Business travel (rail, flights, taxi), Freight, home-working, employee commuting, purchased goods & services, capital goods, use of sold products & end of life treatment of sold products.

2.1.2 Data management

This is the third year Volex has calculated its own emissions using an online software platform named UL360. Data is input to the system on a monthly basis by site representatives, using three delegation forms (environmental form for emissions and energy activity data), with regional approvers for larger sites.

Alan Taylor (Group HR Director) and Vibha Patil (sustainability specialist) have overall responsibility for the collation of the data. Representatives at each site have site level logins to submit their own data. Training on use of the platform has been provided to site representatives in house by Alan and Vibha. A monthly email notification is sent out to each site representative as a reminder to upload their data.

The system notifies the user if the input data is out of the pre-set parameters which were set by Alan and Vibha. Also, Vibha and Alan review the data as the first quality check, with the ability for queries, responses, evidence file uploads and final approval within the UL360 system.

2.1.3 Data limitations

Volex acquired Murat Ticaret during the reporting period, increasing the number of sites and employees. Some data for the acquired sites, such as diesel usage, was not available as this information wasn't previously recorded.

Although not required by the GHG Protocol, site energy usage for the acquired sites was included from September, using MS Excel to provide the data prior to being set up on the UL360 platform. Each emission source has an ID number in the UL360 platform which ensures the MS Excel data is uploaded correctly. The full dataset will be included for the next assessment.

Training on data collection and using the UL360 platform was provided to site representatives during visits to the newly acquired sites by current users.

2.2 Assessment of GHG data and information

2.2.1 On-site consumption of purchased electricity

On-site consumption of purchased electricity accounts for 86.0% of Volex's total GHG emissions. The 5 most energy consuming sites were audited in detail; in order of materiality these were:

- Batam, Indonesia
- Suzhou, China
- Cayirova, Turkey
- Zhongshan, China
- Henggang, China

These sites are all factory locations and collectively represent 68.9% of electricity consumption across the company. Bills were spot checked against the totals entered on the UL360 platform and were all found to be correct. The total consumption for each site submitted was correct based on evidence provided from bills covering the 12-month assessment period showing actual and estimated meter readings. Each site had a full set of monthly bills uploaded to the appropriate site tab on the UL360 platform.

Gebze (Turkey) consumption was assessed to check the process for recording data from the newly acquired sites. Total consumption in the MS Excel sheet linked to the correct indicator ID number on the UL360 system.

The emissions factors were sourced from IEA for each country and applied correctly (see 2.3).

2.2.2 Other emission sources

The following emissions sources were not material to the total and were therefore not audited in detail, however all calculations checks, and emission factors checks can be seen section 2.3.

Transmission & Distribution,
On-site fuel use,
Hire cars,
District heating,
Company Owned Vehicles,
Employee-owned car travel (grey fleet),
Refrigerants,
District heating transmission and distribution,
Electricity, heat or steam generated on-site



2.3 Data calculations

The emission factors used for the calculations have been verified as correct and appropriate for the data (Table 1). The calculations are carried out using the UL360 platform. During the audit, spot checks were carried out on calculations in the UL360 system and the downloaded MS Excel spreadsheets (Table 2).

Table 1: Emissions factors used

Emissions source	Database	Year	Additional comments
Refrigerants	Defra	2023	Correct
District heating			
Company Owned Vehicles			
Employee-owned car travel (grey fleet)			
Transmission and Distribution			
On-site consumption of purchased electricity	IEA	2023	Could not be verified during the audit as these are not from a freely available source. However, the source is considered robust and appropriate.

Table 2: Calculation checks

Emission source name in Volex's calculations	Site	Issue	Recommendation	Comment/action by Volex
Scope 2 (Adjusted) Total	All	Total doesn't match sum of components.	Double check calculations to see what has been included in the total.	Problem was in On-site generated electricity calculation. Adjusted total has been updated to equal the sum of non-renewable plus district heating.
On-site diesel combustion emissions	All	Totals weren't being converted from litres to kWh correctly from new sites data.	Update the system with the correct conversion factors and formulas.	Updated by Volex, following consultation with the UL360 platform staff.

3 Conformance with verification criteria

The chosen methodology that has been used for accounting and reporting Volex's GHG inventory is the ISO14064-3 standard. Carbon Footprint Ltd has examined Volex's GHG statement in relation to the ISO14064-3 standard. The verification activities have shown that Volex has met the verification criteria satisfactorily.

Relevance – the data collected and reported reflects the significant environmental impacts of Volex'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 – the carbon footprint report states the company's approach to data collection and the estimations that were made.

Accuracy – sufficient accuracy has been achieved. Actions to improve data accuracy and reduce uncertainty have been identified.

4 Conclusions

Volex's boundaries and system has satisfactorily captured the most significant and relevant emission sources.

One minor calculation/scoping error was identified during the audit; however, this was corrected during the course of the audit.

The accuracy and quality of the market-based electricity data could be improved. This could be achieved by achieved by implementing the recommendations in section 4.1.

Overall, the calculations were correct, and the estimation methodologies were acceptable.

4.1 Recommendations

Below are several recommendations to assist Volex in improving the quality of its GHG statement:

- Consider reporting market-based emissions based on supplier-specific electricity tariff emissions for each site. 100% renewable energy tariffs result in zero market-based emissions.
- Consider including Well-To-Tank to expand the scope of reporting.

4.2 Assurance opinion

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

- is not materially correct and is not a fair representation of the GHG emissions data and information;
- has not been prepared in accordance with the ISO14064-3 standard.

It is Carbon Footprint Ltd's opinion that Volex 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 – Verification Plan

Venue: Online

Present:

Stephen Laurent, Carbon Footprint Ltd (Verifier)

Zoe Booth, Carbon Footprint Ltd

Vibha Patil, Volex

ISO 14064-3 Ref.		ISO 14064-3 Requirements	Evidence	Comments
5.1.3.	Level of Assurance	To be agreed at the beginning	Anecdotal/email communication	Limited
5.1.4	Objectives	To be agreed at the beginning	Anecdotal Proposal Verification report	Annual reporting (required under Streamlined Energy & Carbon Reporting (SECR))
5.1.5	Criteria	To be agreed at the beginning	Anecdotal	ISO14064-3 standard
5.1.6	Scope	Organisational boundaries, physical infrastructure & activities, GHG sources, type of GHGs, time period	Anecdotal UL360 Platform Proposal	1 st April 2023 to 31 st March 2024- Financial control Scope 1: Company Owned Vehicles, On-site fuel use, Refrigerants and Electricity, heat or steam generated on-site Scopes 2: District heating, On-site consumption of purchased electricity Scopes 3: Hire cars, District heating, transmission and distribution, Employee-owned car travel (grey fleet), Transmission and Distribution
5.1.7	Materiality	Establish materiality		Materiality threshold 5%

ISO 14064-3 Ref.		ISO 14064-3 Requirements	Evidence	Comments
5.4.4	Verification records	The verifier shall maintain records to demonstrate conformity to the requirements of ISO14064-3.	Verification plan. Verification report.	This verification plan is the basis of recording the audit and capturing information.
6.1.3.3	GHG information system & its controls	Processes for collecting, processing and reporting GHG information.	Anecdotal	
6.1.3.4	GHG data & information	Examination of the GHG data and information.	UL360 Platform	
6.1.5	Verification Plan	Document assurance level, objectives, criteria, scope, materiality & schedule.	This document	This table documents the verification plan.
6.1.6	Evidence gathering plan		Sampling Plan	See Appendix 2.
6.3.1	Evaluation of the GHG statement	Evaluate whether the evidence collected supports the GHG statement.	Verification report	Sufficient evidence was provided to support the statement.
6.3.1.4	Assessment against verification criteria	Confirm whether the organisation conforms to the verification criteria.	Verification report	Organisation has met the verification criteria satisfactorily.
6.3.2 & 6.3.3	Conclusion and opinion	A verification statement containing the level of assurance, objectives, scope, criteria, the GHG statement and the verifier’s opinion on the GHG statement.	Verification statement	A verification statement will be issued.

e.g. anecdotal, email communication, report, proposal, agenda, sampling plan etc.

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 remote audit.

Sites and data sampled were chosen due to materiality to the total carbon footprint, noticeable deviation from the previous year's results, and potential anomalies identified from initial analysis.

Primary data (e.g. utility bills, expense claims, fuel card reports etc.) requested is shown in the following table:

Emissions source	Requested	Provided
Electricity	Top five highest emitting sites: Batam, Suzhou, Cayirova, Zhongshan, Henggang	Monthly bills covering the whole assessment period for each site.
Electricity	Example of site data added since acquisition.	MS Excel sheet and monthly bills for Gebze provided.
Other emission sources (see section 2.2.2)	Primary evidence for any input data	Invoices, utility bills and email evidence provided monthly for top five sites.

Secondary data was reviewed for other sites and emission sources.

Appendix 3 – 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 footprinting 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.

Stephen Laurent

Environmental Consultant

Stephen has a master's degree in Natural Sciences and is an Environmental Consultant at Carbon Footprint Ltd. He has completed numerous carbon footprint assessments to both the ISO14064-1 and GHG Protocol standard. Stephen is particularly interested in the impact of the pharmaceutical and biotechnology sectors on climate change.

Jenny Webb

Senior Environmental Consultant

Jenny is a senior environmental consultant at Carbon Footprint Ltd and has a bachelor's degree in Environmental Science. She has completed numerous carbon footprint assessments to ISO14064-1 and the GHG Protocol standard.

Dr. Wendy Buckley

Client Director / Co-Founder Carbon Footprint Ltd

Wendy has a B.Sc. & Ph.D. in Physics and is also a Member of the Chartered Institute of Marketing with MCIM status. She has held various appointments across the globe in both the public and private sector. She has developed extensive knowledge in manufacturing, thermodynamic processes and low energy solutions. Wendy has won a number of business awards and is Chair Person of the Sustainable Business Network in North Hampshire.