



Greater London Authority

**GLA80512: Third party verification of
London's GHG assessment using PAS2070**

BESTFOOTFORWARD
part of the Anthesis Consulting Group PLC

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BESTFOOTFORWARD

part of the Anthesis Consulting Group PLC

Best Foot Forward, part of the Anthesis Consulting Group PLC, are strategy consultants with deep sustainability expertise who support clients in future-proofing businesses and brands. We inspire and enable organisations to deliver ambitious sustainability strategies that reach all the way from supply chain to consumer brand. We work with multinational brands, government departments, the third sector and everyone in between. A selection of our recent projects can be viewed on our [website](#).

In the past year we've won and been shortlisted for a number of awards. Our innovative Product Portfolio Footprinting service was recognised for helping Tesco to footprint its entire supply chain. Our work on making London 2012 the greenest games ever has set new standards for events worldwide. We've helped major fashion brands to tackle their impact on water.



Anthesis is a global consultancy that orientates around client needs to design and embed sustainable business practices. We have a vision to be the world's leading specialist provider of sustainability consulting, analytics, product compliance and supply chain performance services. As a trusted delivery partner, we provide commercial and intelligent solutions that make our clients more resilient, more competitive and alert to new opportunities.

- We work through the complete program lifecycle, from identification of risks and opportunities to delivery of tangible business value.
- We back up our advice with leading edge data management and analytics, providing clarity and direction.
- We empower our clients to align industry leadership with corporate expectations, creating a foundation for maximum impact.
- We provide thought leadership, bring deep industry experience and incorporate technology to deliver outcomes that improve performance.

Executive summary

BFFA identified several discrepancies in the GHG Assessment which were corrected during the course of the verification exercise. We assume that the final tables in the Calculation Spreadsheet will be accurately replicated in the final version of the Guide.

Based on the review and verification process outlined in this Report, subject to the minor discrepancies identified in *Appendix 2; A2.2*, nothing has come to our attention which causes us to believe that the GHG Assessment is not presented fairly in accordance with the relevant criteria as set out in PAS2070.

However, we would draw attention to the approach taken to try and eliminate double-counting from the final aggregate results. PAS2070 is silent on how this aggregation should take place. We note that the approach taken will result in a smaller estimate of London's GHG emissions. We estimate (see *Appendix 2, A2.1*) that a more conservative approach could materially increase London's reported emissions.

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1 Introduction

The Greater London Authority (**GLA**) has commissioned Best Foot Forward, part of the Anthesis Consulting Group (**BFFA**) to provide verification services to assess whether London's greenhouse gas (**GHG**) assessment (the **GHG Assessment**) is compliant with the requirements as set out in *PAS2070: Specification for the assessment of greenhouse gas emissions of a city (PAS2070)*.

1.1 Background

PAS2070 is a new specification for the assessment of the GHG emissions of a city, published by the BSI and sponsored by the Mayor of London.

London's GHG Assessment is the first study to use the PAS2070 methodology, and is more comprehensive than previous assessments as it includes a much larger range of emission sources and a more robust calculation process.

London's GHG Assessment has an accompanying guide which provides a detailed case study of the application of PAS2070 to London in order to assist users and provide clarity on specific technical aspects of PAS2070 and how to use it in practice. This guide is intended to be used alongside PAS2070 and includes guidance on data collection, quantifying emissions, and a template for reporting.

1.2 BFFA verification

As the GHG Assessment and accompanying guide represents the first study carried out in compliance with PAS2070, GLA requested verification services from BFFA.

This Report sets out the following:

- the verification process carried out by BFFA;
- the verification findings following review of London's GHG Assessment against the verification criteria; and
- an opinion in respect of London's GHG Assessment compliance with PAS2070.

2 Verification Methodology

PAS2070 does not prescribe a particular verification process, therefore we have been guided by the following standards in relation to the detailed tasks undertaken:

- ISO14064 Greenhouse gases Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions (**ISO14064-3**); and
- The Greenhouse Gas Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard (**GHG Protocol**).

3 Verification Principles

Throughout the verification exercise, BFFA have been guided by the following fundamental principles of ISO14064-3:

- **Independence** BFFA have remained independent of the activity being verified and free from bias and conflict of interest. BFFA have maintained objectivity throughout the verification exercise to ensure findings and conclusions are based on objective evidence gathered throughout the verification exercise.

- **Ethical conduct** BFFA have demonstrated ethical conduct through trust, integrity, confidentiality and discretion throughout the verification exercise.
- **Fair presentation** BFFA have reflected truthfully and accurately the verification activities, findings, conclusions and reports. BFFA have reported significant obstacles encountered during the verification exercise, as well as unresolved, diverging opinions among BFFA and GLA.
- **Due professional care** BFFA have exercised due professional care and judgment in accordance with the importance of the task performed and the confidence placed by GLA and intended users.

4 BFFA Competencies

BFFA is one of Europe's leading sustainability consultancies specialising in energy and natural resource accounting methodologies such as resource flow analysis, ecological footprinting and GHG accounting. Since completing the first detailed ecological footprint of an organisation in 1998, BFFA has to date completed **well over 3,000 footprint analyses for in excess of 300 clients** and has the following specific knowledge, skills and competencies for this verification exercise:

- Queen's Award-winning, **leading GHG accounting experts**;
- Craig Simmons, the team leader for this verification exercise, **contributed to the development of PAS2070** and currently sits on BSI's PAS 2060 and GLA's Carbon Management Steering Group;
- experience of undertaking **more than 100 city and city-region footprints** including the first ever carbon footprint and resource flow analysis of Greater London;
- involved in the **development of other GHG Accounting Standards** including PAS 2050, the London 2012 carbon footprint methodology and several international GHG Protocol standards; and
- **experience of assuring against a number of GHG standards** including the Carbon Disclosure Project (CDP), Carbon Trust Standard (BFFA are CT approved suppliers), CEMARS, The Carbon Neutral Company Protocol, the UK's mandatory carbon reporting standard, Footprint Protocol (Global Footprint Network), ISO14064-1, PAS 2050, PAS 2060 and a number of GHG Protocol standards.

For this verification exercise, BFFA assembled a team of experienced GHG accounting experts.

Craig Simmons – Team Leader

Craig is co-founder of BFFA and is an internationally recognised expert in the field of environmental accounting. He is a member of the Sustainable Europe Research Institute and sits on the Global Footprint Network Standards Committee, and is an advisor to the WRI/WBCSD on the GHG Reporting Protocol for products which he co-authored. He is author of numerous technical and popular articles on sustainability, and co-authored best-selling *Sharing Nature's Interest; ecological footprints as an indicator of sustainability* and RIBA award winning *The ZEDBook: Solutions for a Shrinking World*. Craig is responsible for all technical analysis work completed by BFFA staff and leads weekly technical meetings and periodic training sessions with the analyst team. Craig also leads on projects including for LOCOG and the European Commission. Craig designed, and is responsible for, BFFA's on-going data management using the propriety EcoIndex database containing over 100,000 emissions factors. Craig combines his technical abilities with strong communication skills, and is the author and lead tutor on the Carbon and Ecological Footprint Masterclasses.

Gregor Pecnik

Gregor performed organisational and product carbon footprint analyses for various clients including Intercontinental Hotels Group, Greater London Authority, WRAP, GSK, Eurostar, Pepsico, Britvic, National Express. Gregor prepared numerous technical reports and papers outlining methodological and footprint calculation approaches, uncertainty estimations and development of emissions factors. In addition to footprinting knowledge, Gregor has a good knowledge of economic appraisal, (environmental) cost benefit analysis and environmental valuation methods. Gregor performed economic appraisals and modelling of mitigation strategies and has co-authored training course on using shadow prices in carbon appraisal. He has completed training for providing CEMARS (Certified Emissions Measurement and Reduction Scheme) certification.

Claire Stentiford

Claire works in analysis and quality assurance. She has been involved in the development of BFFA's tools including most recently Footprint Reporter™, BFFA's online EF and carbon calculator. She has done EF and carbon studies of various organisations, products and transport systems. Claire edited Stepping Forward, study of the South West of England, and has been responsible for QA on many of BFFA's other reports. In 2006 she was on the organizing committee for the Oxford Solar Cities Conference.

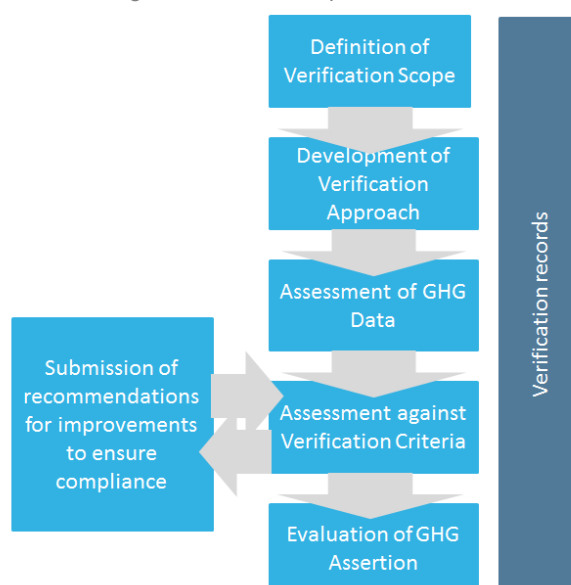
Dave Cooke

Dave has performed organization carbon footprint analyses for various clients and has developed an expertise in accounting standards interpretation through having developed the first protocol for compliance with PAS2060 through use of BFFA's carbon accounting software. Dave's previous career as a finance lawyer involved contract negotiation and advising on risk and compliance, as well as project managing each transaction to completion. His range of legal experience prior to joining gave him first-hand experience of compliance requirements faced by businesses and required effective communication and attention to detail.

5 Verification Process

BFFA have followed the verification process set out in Figure 1 which broadly follows the procedure set out in ISO14064-3. The remainder of this *Section 5* includes accompanying commentary for each separate stage of the verification process.

Figure 1 Verification process followed



5.1 Definition of Verification Scope

During the course of the verification exercise, BFFA was informed that – as a result of this verification exercise and the lessons learnt by GLA in carrying out the first GHG assessment in accordance with PAS2070 – there would be changes made to PAS2070 and a revised version of the standard would be released at a later stage.

Following submission of the original verification report, the changes to PAS2070 referred to above were implemented and a revised version of PAS2070 was issued. BFFA were provided with a list of all changes made to PAS2070, and carried out additional verification in respect of these changes made to PAS2070.

Therefore this Report details our opinion in respect of London's GHG Assessment compliance with the revised version of PAS2070 (ISBN 978 0 580 86536 7). In this regard, we assume that the changes reflected in the revised version of PAS2070 are limited to those identified to BFFA by GLA by email on 22 May 2014.

The verification objectives agreed at the start of the exercise were to assess whether the GHG Assessment is compliant with the requirements as set out in PAS2070 and of sufficient quality for:

- internal purposes such as policy setting and tracking progress towards targets which may be set; and
- external communication through publication by BSI of the accompanying guide which provides a detailed case study of the application of PAS2070 to London.

With this in mind the intended users of the information contained in this Report are GLA and the public at large.

PAS2070 (and the requirements set out therein) determine the criteria and scope of the verification exercise. As London's GHG Assessment is the first study using the PAS2070 methodology it was necessary to create a checklist of verification criteria to assess compliance with PAS2070 (the **Verification Checklist**).

The Verification Checklist includes each of the criteria in PAS2070 which must be satisfied in order to demonstrate compliance with the standard and was split according to the following:

- general requirements for compliance with PAS2070 in relation to GHG emissions boundaries, assessment boundaries, data quality rules etc.;
- specific requirements for compliance with the direct plus supply chain (**DPSC**) methodology; and
- specific requirements for compliance with the consumption-based (**CB**) methodology.

A spreadsheet detailing the Verification Checklist is available on request.

5.1.1 Materiality

During the course of the verification exercise, individual errors and omissions (and the aggregate of these) were evaluated qualitatively and quantitatively.

The verification team were responsible for determining if *qualitative discrepancies* would reduce the quality of London's GHG Assessment rendering it unfit for the intended use (see *Section 5.1* above) – in which case they were judged to be material.

Quantitative discrepancies were assessed according to the materiality threshold set by PAS2070 (e.g. whether the GHG emissions would represent over 2% of the total GHG emissions using the DPSC

methodology. Individual errors judged to affect the total GHG emissions by more than 2% were considered material.

5.2 Development of Verification Approach

The data relevant to this verification exercise comprised the following:

- guide entitled “*Application of PAS 2070:2013 – London, United Kingdom How to conduct an assessment of greenhouse gas emissions of a city*”;
- spreadsheet containing the calculations required for the GHG Assessment; and
- spreadsheet containing the final tables for inclusion in the guide (together the **GHG Data**).

Following receipt of the GHG Data from GLA, BFFA conducted a review to assess the nature, scale and complexity of the verification activity and confidence and completeness of the GHG Data.

Following this initial review, the verification approach that was followed during the course of this verification exercise is set out in *Appendix 1*.

5.3 Assessment of GHG Data

In terms of the assessment of the GHG Data, Table 1 below details what was assessed during the course of this verification exercise.

Table 1 Description of what is included in the assessment of GHG Data for this verification exercise

Assessment Type	Description of whether included in assessment of GHG Data
Assessment of GHG information system and its controls	There was no assessment of GHG information systems and controls during this verification exercise (including processes for collecting, processing and consolidating GHG data, systems and processes to ensure the accuracy of GHG data, design and maintenance of GHG information system or systems and processes that support the GHG information system).
Assessment of GHG data and information	Assessment of GHG data and information was assessed to check for compliance with PAS2070.

Further detail on the assessment of GHG Data that occurred during the course of this verification exercise is set out in *Appendix 1*.

5.4 Assessment against Verification Checklist

5.4.1 Initial assessment against Verification Checklist

BFFA then assessed whether the GHG Data satisfied each of the criteria included in the Verification Checklist (see *Section 5.1*).

A spreadsheet detailing discrepancies identified during the assessment of the GHG Data against the Verification Checklist was submitted to GLA on 19 March 2014.

5.4.2 Final assessment against Verification Checklist

Following GLA's incorporation of changes and additional requirements (see *Section 5.5*), the updates to the GHG Data produced as a consequence were checked to ensure outstanding issues were satisfactorily addressed to ensure compliance with the criteria included in the Verification Checklist.

5.4.3 Additional assessment against changes made to PAS2070

As referred to in *Section 5.1*, following submission of the original verification report, the changes to PAS2070 were implemented and a revised version of PAS2070 was issued. BFFA were provided with

a list of all changes made to PAS2070, and carried out additional verification in respect of these changes made to PAS2070.

Further detail on the assessment against the Verification Checklist and the list of changes made to PAS2070 that occurred during the course of this verification exercise is set out in in *Appendix 1*.

5.5 Submission of recommendation for improvements to ensure compliance

Following delivery of the spreadsheet detailing discrepancies identified during the initial assessment against the Verification Checklist (see *Section 5.4.1*), BFFA and GLA held a teleconference on 26 March 2014 to discuss any changes required as a result of the discrepancies identified and additional requirements needed to ensure compliance with PAS2070.

In attendance was Craig Simmons, Gregor Pecnik and Dave Cooke (representing BFFA) and Leah Davis and Michael Doust (representing GLA).

GLA took overall responsibility for incorporating changes and additional requirements to ensure compliance against PAS2070.

5.6 Evaluation of GHG Assertion

The GHG Assertion that was verified during this verification exercise is that London's GHG Assessment is in compliance with the principles and requirements of PAS2070.

Following the final assessment against the Verification Checklist (see *Section 5.4.2*) and the additional assessment against the changes made to PAS2070 (see *Section 5.4.3*), BFFA then evaluated whether the evidence collected during the verification exercise and in the assessment of the GHG Data is sufficient to support the GHG Assertion.

6 Verification Findings

Appendix 2 contains a table of discrepancies found during the verification exercise as identified in the final assessment against the Verification Checklist (see *Section 5.4.2*) and the additional assessment against the changes made to PAS2070 (see *Section 5.4.3*) and grouped according to the taxonomy set out in *Section 5.2*:

- general requirements for compliance with PAS2070;
- specific requirements for compliance with the DPSC methodology; and
- specific requirements for compliance with the CB methodology.

7 BFFA Opinion

BFFA identified several discrepancies in the GHG Assessment which were corrected either during the course of the verification exercise or as a result of the changes made to PAS2070 following submission of the original verification report. We assume that the final tables in the Calculation Spreadsheet will be accurately replicated in the final version of the Guide.

Based on the review and verification process outlined in this Report, subject to the minor discrepancies identified in *Appendix 2*; A2.2, nothing has come to our attention which causes us to believe that the GHG Assessment is not presented fairly in accordance with the relevant criteria as set out in PAS2070.

However, we would draw attention to the approach taken to try and eliminate double-counting from the final aggregate results. PAS2070 is silent on how this aggregation should take place. We note that

the approach taken will result in a smaller estimate of London's GHG emissions. We estimate (see *Appendix 2, A2.1*) that a more conservative approach could materially increase London's reported emissions.

8 Conflict of Interest

BFFA has conducted a review of any real or perceived conflicts of interest resulting from advocacy, intimidation, self-review, self-interest or familiarity. No threats to independence, either real or perceived, have been identified.

Appendix 1 Verification Plan

The verification work performed comprised two work streams which were carried out between 3 March 2014 and 17 April 2014:

- checking the calculations performed as part of London's GHG Assessment (correctness and completeness of calculations etc.); and
- checking the methodology used for London's GHG Assessment was in compliance with the requirements of PAS2070 and that the results of London's GHG Assessment are presented in a manner which was in compliance with the requirements of PAS2070.

The additional assessment against the changes made to PAS2070 was carried out during the week commencing 2 June 2014.

The verification work was performed as a desktop review of the MS Word and MS Excel files comprising the GHG Data. As set out in *Section 5.2*, the GHG Data comprised the following (each individual item separately defined for ease of reference later in this *Appendix 1*):

- guide entitled "*Application of PAS 2070:2013 – London, United Kingdom How to conduct an assessment of greenhouse gas emissions of a city*" (the **Guide**);
- spreadsheet containing the calculations required for the GHG Assessment (the **Calculation Spreadsheet**); and
- spreadsheet containing the final results tables for inclusion in the Guide (the **Results Spreadsheet**).

The verification work did **not include** any of the following:

- site visits to better understand the processes and data systems used by GLA for the purposes of preparing London's GHG Assessment; or
- interviews with key personnel at GLA responsible for preparing London's GHG Assessment.

Due to the time requirements agreed at the start, it was agreed site visits and interviews were not required as part of the verification process.

A1.1 Checking the calculations performed as part of London's GHG Assessment

The Calculation Spreadsheet contained the separate tabs as detailed in the table below.

Emission Factor Tab	Emission Factors
Data Tabs	A. Stationary
	B1. Road
	B2. Rail
	B3. Navigation
	B4. Aviation
	C. IPPU
	D. AFOLU
	E1. Waste
	E2. Wastewater

	F1. Water
	F2. Food and Drink
	F3. Construction
Summary Tab (CB)	PAS2070_CB
Summary Tab (DPSC)	PAS2070_DPSC
Other Tabs	GPC
	London_Data

A1.1.1 Emission Factor Tab

The verification work performed in respect of this comprised (or each emission factor):

- the emission factor value was checked against the cited source (where possible) to be sure it had been transcribed correctly; and
- the name of each item was checked to be sure it was the correct and intended item.

For some emission factors from non-standard sources, these were compared to emission factors from standard sources for alignment.

A1.1.2 Data Tabs

The verification work performed in respect of these comprised checking to examine the following (for each Data Tab):

- correctness of calculated cells (use of appropriate source cells, correct formula, use of correct ranges etc.);
- completeness of calculations (all required aspects covered etc.);
- consistency (totals in one area equal the totals in another area appropriately);
- correctness of units;
- correct choice of emission factors; and
- correctness of references (where appropriate or available).

For some Data Tabs all relevant cells were checked, and for larger Data Tabs a sample was checked.

A1.1.3 Summary Tab (CB)

This tab was not checked as part of the verification work as it was based entirely on a source which was not publically available for checking.

A1.1.4 Summary Tab (DPSC)

The verification work performed in respect of this comprised:

- checking each result cell to ensure linked to the correct Data Tab (and cells within that Data Tab) to give the result as described in columns B-F;
- checking any formulae in result cells (use of appropriate source cells, correct formula, use of correct ranges etc.);
- checking each sub-total and total (summing of appropriate cells etc.); and
- checking each sub-total and total against the relevant Data Tab to ensure completeness of reporting to the Summary Tab.

A1.1.5 Other tabs

These tabs were not checked as part of the verification work due to either being not relevant to the calculations involved in the GHG Assessment or being outside the scope of the verification exercise.

A1.2 Checking the methodology used for London's GHG Assessment was in compliance with the requirements of PAS2070

As referred to in *Section 5.1*, London's GHG Assessment is the first study using the PAS2070 methodology. Therefore it was necessary to create a checklist of verification criteria to assess compliance with PAS2070 (referred to throughout this Report as the Verification Checklist). The Verification Checklist includes each of the criteria in PAS2070 which must be satisfied in order to demonstrate compliance with the standard and was split according to the following:

- general requirements for compliance with PAS2070 in relation to GHG emissions boundaries, assessment boundaries, data quality rules etc.;
- specific requirements for compliance with the direct plus supply chain (**DPSC**) methodology; and
- specific requirements for compliance with the consumption-based (**CB**) methodology.

Following checking the calculations performed as part of London's GHG Assessment (see *Section A1.1*), this verification work performed here consisted of:

- checking the methodology set out in the Guide against the Verification Checklist; and
- checking the presentation of results set out in the Guide against the Verification Checklist.

As referred to in *Section 5.1*, following submission of the original verification report, the changes to PAS2070 were implemented and a revised version of PAS2070 was issued. BFFA were provided with a list of all changes made to PAS2070 which were incorporated into a revised Verification Checklist in order to carry out additional verification in respect of these changes made to PAS2070.

Appendix 2 Discrepancies identified during verification exercise

A2.1 Checking the calculations performed as part of London's GHG Assessment

PAS 2070 warns against double-counting of emission sources but does not specify how such double-counting might be eliminated when presenting aggregate GHG results. Where the data quality does not allow the degree of double-counting to be accurately determined (as is the case for London) there is inevitably a degree of uncertainty in the results.

The approach taken in the Guide will result in a smaller estimate of London GHG emissions. We are of the opinion that a more conservative approach could materially increase London's GHG emissions.

Double counting		
Agriculture, forestry and land use (AFOLU)	Excluding AFOLU impacts from the total assumes that all crops and livestock produced in London are consumed in London - this is the lowest impact possibility. The conservative highest possibility is to add crop and livestock impacts - thus assuming that the produce is exported.	Not material
Indirect GHG emissions from transboundary transport of goods and people (Road)	The current approach, of subtracting the London fuel use in Table 1 from the Londoners' purchased fuel in Table 2, results in the lowest possible fuel use by assuming that all fuel used in London is purchased by Londoners. The conservative (i.e. high result) would be to add the Londoners' purchased fuel to the London fuel use (thereby assuming that all purchased fuel is used transboundary and all fuel used in London is purchased outside London). The reality will be somewhere between.	Potentially material (5%)
Indirect GHG emissions from transboundary transport of goods and people (Rail)	This calculation underestimates the transboundary impacts of rail because it subtracts the impacts of Overground from the National Rail impacts (because there is no separate measure of the impacts of Overground in the sources). The conservative approach would be to add the whole of national rail and Eurostar as the transboundary impacts, and considering the distances travelled outside London compared to the distances inside (presumably included in the inbound impacts) this seems very reasonable.	Not material (1%)

A2.2 Checking the methodology used for London's GHG Assessment was in compliance with the requirements of PAS2070

Verification Criteria	Discrepancy Description	Final Status
Definition of the city boundary	No discrepancy	
Time period of assessment	No discrepancy	
Data completeness, consistency, reproducibility, data sources	<p>The hierarchy of preference of selecting primary data is not clearly stated in the Guide (Section 2.3 of the Guide is wordy and not very clear on this point) it would be better to be laid out exactly like the PAS2070 list.</p> <p>The hierarchy of preference of selecting secondary data is not clearly stated in the Guide (Section 2.3 of the Guide is wordy and not very clear on this point) it would be better to be laid out exactly like the PAS2070 list.</p> <p>The Calculation Spreadsheet does not have a single list of references - these would be best presented in the Guide with the relevant tables, and as an Appendix listing all references.</p> <p>Guide needs a clear statement addressing documentation of completeness, consistency, reproducibility and data sources.</p>	Not material
Emission factors	No discrepancy	
Any assumptions made	The Calculation Spreadsheet does not have a single list of assumptions - these would be best presented in the report with the relevant tables.	Not material
Supplementary data to provide context	No discrepancy	
DPSC methodology		
Stationary sources of GHG emissions		
Direct GHG emissions from fuel combustion	No discrepancy	
Indirect GHG emissions from generation of grid supplied electricity, district heating or cooling	No discrepancy	
Direct GHG emissions from generation of grid supplied electricity, district	No discrepancy	

heating or cooling		
Indirect GHG emissions from upstream activities	No discrepancy	
Mobile sources of GHG emissions		
Direct GHG emissions from inboundary transport of goods and people	No discrepancy	
Indirect GHG emissions from inboundary transport of goods and people	No discrepancy	
Indirect GHG emissions from transboundary transport of goods and people	No discrepancy	
Indirect GHG emissions from upstream activities	No discrepancy	
Industrial processing and product use (IPPU)		
Industrial processes	Although data is properly referenced and correctly reported and hence compliant with PAS2070, we doubt the evidence that there are zero emissions for industrial processes in London.	Not material
Product use	Although data is properly referenced and correctly reported and hence compliant with PAS 2070, we doubt the evidence that industrial product use is zero in IPCC sectors 2D1-2E5, 2F6, 2G3, 2G4, 2H1-2H3.	Not material
Agriculture, forestry and land use (AFOLU)		
General	No discrepancy	
Food production	No discrepancy	
Waste and wastewater treatment		
Waste	No discrepancy	
Wastewater treatment	No discrepancy	

Goods and services		
Water provision	No discrepancy	
Food and drink	No discrepancy	
Construction materials	No discrepancy	
Other goods and services that make a material contribution to city GHG emissions	No discrepancy	
Total GHG emissions for the city calculated in accordance with the DPSC methodology	No discrepancy	
CB methodology		
EEIO model used	No discrepancy	
Economic final consumption by households	No discrepancy	
Economic final consumption by municipal and national government	No discrepancy	
Economic final consumption by business capital expenditure	No discrepancy	
Total GHG emissions for the city calculated in accordance with the CB methodology	No discrepancy	