John Perkins Construction

Carbon Reporting &

Reduction Plan

For
John Perkins Construction Ltd

Prepared by
Carbon Consult Limited
Camerton Inn, 28 Meadgate
Camerton
Bath
BA2 0NW

Rupert Perkins, Managing Director

Revision record

Description	Rev	Date	By	Checked
Carbon Reporting and Reduction Plan (draft)	1.1	05/02/25	Gareth Sammons	Fleur Baguley
Carbon Reporting and Reduction Plan	1.2	07/04/25	Gareth Sammons	Fleur Baguley
Carbon Reporting and Reduction Plan – Amends re PV Installation	1.3	04/08/25	Gareth Sammons	Fleur Baguley

This report is provided for the sole purpose of providing information for the project client. It is confidential to Carbon Consult and the Client. Carbon Consult Limited accept responsibility that the report has been prepared with the skill, care and diligence. No responsibility is accepted whatsoever to any other parties. Any such parties rely upon the report at their own risk. Neither the whole nor any part of the report nor reference to it may be included in any published document, circulation or statement without Carbon Consult Limited and the Clients written approval of the form and content in which it may appear.

Disclaimer
This report is made on behalf of Carbon Consult Limited.
By receiving the report and acting on it, the client - or any third party relying on it - accepts that no individual is personally liable in contract, tort or breach of statutory duty [including negligence].

.

TABLE OF CONTENTS

TABLE OF CONTENTS 3

CHAPTER: 1 EXECUTIVE SUMMARY 5

1.1 Improvements prior to Baseline reporting year 6

1.2 Observations and Actions 6

CHAPTER: 2 CONTEXT 8

CHAPTER: 3 POLICY REVIEW 8

3.1 Streamlined Energy and Carbon Reporting (SECR) 8

3.2 The Greenhouse Gas Protocol 9

3.3 Environmental Reporting Guidelines 9

3.4 Carbon Reduction Plans 9

CHAPTER: 4 SCOPE AND METHODOLOGY 14

4.1 Defining Boundaries 14

4.2 Collation of Data 15

4.3 Analysis and Calculation 16

4.4 Baseline reporting 16

4.5 Reduction Targets 16

CHAPTER: 5 ANALYSIS AND CALCULATION 17

5.1 Greenhouse Gases 17

5.2 Calculation Mechanism 17

5.3 Extrapolation of Data 18

CHAPTER: 6 DEFINING BOUNDARIES 19

6.1 Organisational Boundary 19

6.2 Operational Boundary 19

6.3 Data 21

6.4 Data Collection 23

6.5 Bristol office Improvements prior to the baseline reporting year 24

CHAPTER: 7 DATA ANALYSIS 26

7.1 Scope 1 Consumption 26

7.2 Scope 1: Notes and Observations 27

7.3 Scope 2 Consumption 29

7.4 Scope 2: Notes and Observations 30

7.5 Scope 3 Consumption 31

7.6 Scope 3: Notes and Observations 32

CHAPTER: 8 BASELINE REPORTING 34

8.1 PPN-0621 34

8.2 Emission intensity 35

CHAPTER: 9 REDUCTION PLANNING 36

9.1 Opportunities by Scope 36

9.2 Reduction opportunities 36

9.3 Monitoring/ Recording improvements 40

9.4 Potential Savings 41

CHAPTER: 10 NEXT STEPS 43

10.1 Directorial Sign-off 43

10.2 Publication of results 43

10.3 Annual Monitoring 43

10.4 Improvement 43

Appendix 1 - Strategic Plan Timeline 44

CHAPTER: 1 EXECUTIVE SUMMARY

This report has been prepared for John Perkins Construction by Carbon Consult to demonstrate the baseline Greenhouse Gas Emissions in the year through to 31st January 2025 and to provide a Carbon Reduction Plan.

Reporting and analysis has been produced in line with UK Legislation and Guidance and the GHG Protocol guidance.

The data collected has been converted to Carbon equivalent emissions for the reporting year; the breakdown as follows:

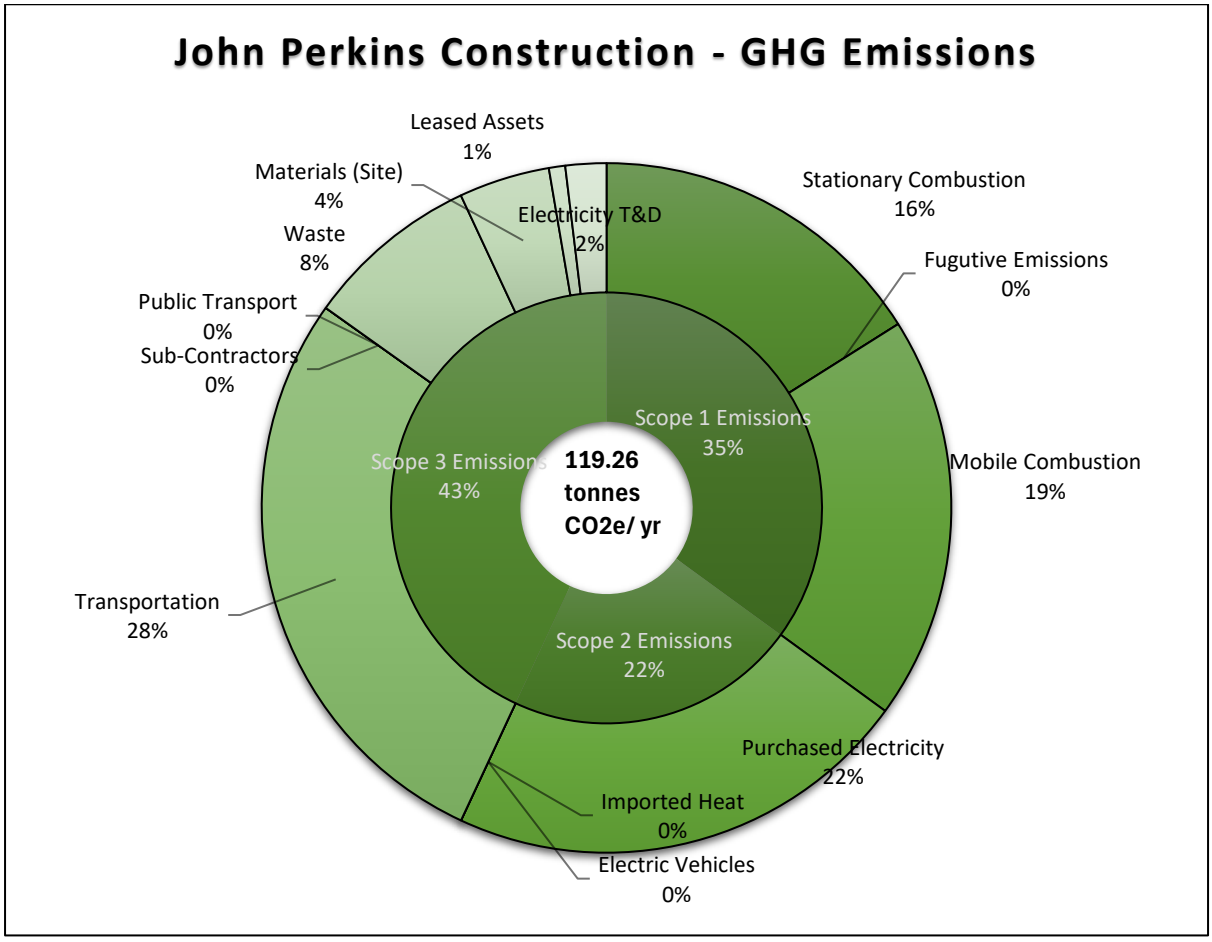


Figure 1: Headline Carbon Emissions per Scope

No previous reporting has been produced; therefore this reporting can be considered as a baseline for future comparison and improvements.

Reporting has included:

- Office Premises:
  - Dragons Court, Bristol
  - Gold Tops, Newport

- Projects (main projects during the reporting year):
    - Bristol Airport, Executive lounge extension
    - Transporter Bridge Visitor Centre, Newport
    - Ashcombe School, Weston-Super-Mare
    - YGGIC Sports Centre

The emissions measured have been used to develop a Carbon Reduction plan focussing on key areas such as:

- Business travel
- Commuting
- Waste management
- Reporting
- Metering
- Accuracy of monitoring

1.1 IMPROVEMENTS PRIOR TO BASELINE REPORTING YEAR

It should be acknowledged that prior to this reporting of the baseline year, the John Perkins premises in Bristol has already benefited from a number of changes aimed at reducing Carbon emissions. Section 6.5 details further the achievements already made.

A 37% reduction in emissions associated with electricity use in the Bristol office has already been achieved.

Consumption and resulting emissions for electricity use within the Bristol office proportionally contributes (including the PV saving) <2% of the overall John Perkins annual carbon emissions.

1.2 OBSERVATIONS AND ACTIONS

Notwithstanding gaps in data relating to materials usage and transport:

1. Approximately 23% of all emissions relate to employee commuting. A staff survey is encouraged to ascertain opportunities for more sustainable transport usage.

2. 20% of all emissions relate to electric consumption on project sites. Opportunities for reduction could be separate metering, more efficient site cabins with built in PV generation and low energy consuming fittings for temporary facilities.

3. 18% of all emissions relate to company vehicle usage. A switch to all electric vehicles would reduce associated mileage to 0 (albeit increasing those associated with electric consumption at location of charging).

4. 9% of emissions relates to fuel usage on site (e.g. diesel generators, site vehicles). Switching to all electric vehicles would reduce emissions.

5. 5% of emissions relate to Gas consumption at the Bristol office. A switch to an all-electric system for heating/ hot-water would reduce this if the electricity was provided by LZC (e.g. PV, ASHP).

6. Establish consistent reporting mechanisms for projects/ site consumption

7. Alter the metering at the Bristol office to allow for more accurate understanding of consumption

8. Encourage the landlord of the Newport office to install metering for each tenant.

CHAPTER: 2 CONTEXT

To support a framework bid for an "In-scope" organisation, suppliers are required to submit a Carbon Reduction Plan, detailing their organisational carbon footprint and confirming their commitment to achieve Net Zero emissions by 2050.

Whilst the Streamlined Energy & Carbon Reporting (SECR) regulations do not explicitly apply (due to the scale of the organisation), the principles can be followed and information produced voluntarily.

A condition of various construction frameworks (such as SEWSCAP: South East & Mid Wales Collaboration Construction Framework) is for any bidders to have in place a Carbon Reduction plan to guide their operational activities to achieve Net Zero Carbon emissions.

CHAPTER: 3 POLICY REVIEW

3.1 STREAMLINED ENERGY AND CARBON REPORTING (SECR)

Streamlined Energy and Carbon Reporting[1], UK legislation (replacing the Carbon Reduction Commitment (CRC)) came into place on 1st April 2019 and is a legal requirement for all large UK companies.

In summary, it requires that the business undertakes a detailed analysis of their energy consumption, greenhouse gas emissions and energy management projects in their annual published accounts.

The SECR requirements apply to "large" companies in accordance with the Companies Act 2006. Those companies which meet two of the three following criteria are also to comply:

- A turnover of over £36m
- A balance sheet over £18m
- More than 250 employees

All UK quoted companies will need to submit an SECR report.

Businesses that use less than 40MWh over the reporting period are exempt, but a statement confirming energy use is to still be included.

[1] HM Government, March 2019, Environmental Reporting Guidelines: Including Streamlined Energy and Carbon Reporting Guidance

3.2 THE GREENHOUSE GAS PROTOCOL

The Greenhouse Gas Protocol[2] provides a step-by-step guide for companies to use in quantifying and reporting their GHG emissions.

The protocol initiative is a multi-stakeholder partnership of businesses, non-governmental organisations, governments and specialists convened by the World Resources Institute and the World Business Council for Sustainable Development.

It was launched in 1998 with the intention to develop internationally accepted Greenhouse Gas accounting and reporting standards for businesses.

3.3 ENVIRONMENTAL REPORTING GUIDELINES

The Environmental Reporting Guidelines[3], Published in Mar '19 by HM Government, is guidance designed to help companies in compliance with reporting against both regulations and voluntary standards on a range of environmental matters, including Energy and GHG emissions.

3.4 CARBON REDUCTION PLANS

"In 2019, the UK became the first major economy to adopt a legal commitment to achieve 'Net Zero' carbon emissions by 2050"

The guidance within PPN 0621[4] sets out how suppliers' Carbon Reduction Plans and commitments to achieve Net Zero are considered in the procurement of in-scope central Government contractors.

Carbon Reduction Plans are to be completed on or by the bidding supplier and must meet the requirements set out in this guidance and include the supplier's current carbon footprint and its commitment to reducing emissions to achieve Net Zero emissions by 2050. This is in

[2] The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised edition) – World Business Council for Sustainable Development and World Resources Institute
[3] Environmental Reporting Guidelines, Including Streamlined Energy and Carbon Reporting Guidance, March 2019, HM Government Crown Copyright
[4] PPN 0621 - Technical Standard for the completion of Carbon Reduction Plans

support and consistent with the UK Government's commitment under the Climate Change Act.

To ensure consistency in reporting of Carbon, reporting is to be in line with Government Environmental Reporting guidance[1] and best industry practice and technical guidance.

Carbon Reduction plans are to be updated annually to reflect changes in organizational structure and take account of efforts to reduce emissions over time, should be endorsed at board level and should be published on the company's website.

Emissions reporting should be broken down into three categories in accordance with guidance in the Greenhouse Gas Protocol.

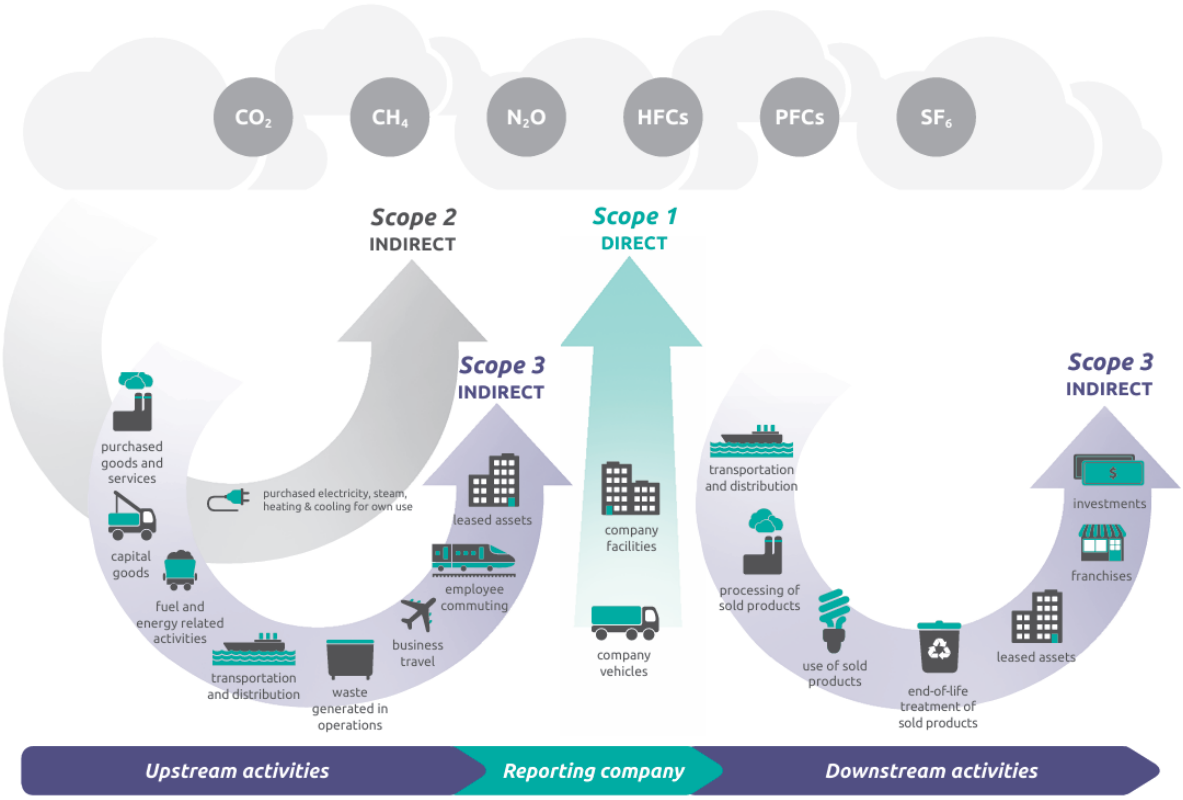


Figure 2: Overview of GHG Protocol Scopes and Emissions[5]

Scope 1	Scope 2	Scope 3
Direct Emissions	**Indirect Emissions**	**Other Indirect Emissions**
Combustion of fuels in stationary locations (gas boilers for offices) Emissions associated with company owned vehicles on business miles Divided itself into four: 1. Stationary – fuels, heating sources 2. Mobile combustion – all vehicles owner or controlled by the firm, burning fuel 3. Fugitive emissions – leaks to the air of greenhouse gases (refrigeration, air conditioning units) 4. Process emissions – released during industrial processes and on-site manufacturing	Purchased electricity, heat and steam e.g. generation of electricity fuel mix – unless private generation, then linked to national grid	Associated with sale of or purchase of goods/ services Emissions that occur in the value chain of the reporting company including both upstream and downstream e.g. the companies operations. - Purchased goods and services - Business travel - Employee commuting - Waste disposal - Use of sold products - Transportation and distribution (up and downstream) - Investments - Leased assets and franchises

Table 1: Emission sources split per Scope 1 (Direct), Scope 2 (Indirect) and Scope 3 (Other Indirect)

The PPN_0621 guidance requires that businesses report scope 3 emissions against the following five categories:

Scope 3 Category	Category Description	Minimum Boundary
Upstream transportation and distribution	Transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company) Transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company)	The scope 1 and scope 2 emissions of transportation and distribution providers that occur during use of vehicles and facilities (e.g., from energy use) Optional: The life cycle emissions associated with manufacturing vehicles, facilities, or infrastructure
Waste generated in operations	Disposal and treatment of waste generated in the reporting company's operations in the reporting year (in facilities not owned or controlled by the reporting company)	The scope 1 and scope 2 emissions of waste management suppliers that occur during disposal or treatment Optional: Emissions from transportation of waste
Business travel	Transportation of employees for business related activities during the reporting year (in vehicles not owned or operated by the reporting company)	The scope 1 and scope 2 emissions of transportation carriers that occur during use of vehicles (e.g., from energy use) Optional: The life cycle emissions associated with manufacturing vehicles or infrastructure

Scope 3 Category	Category Description	Minimum Boundary
Employee commuting	Transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company)	The scope 1 and scope 2 emissions of employees and transportation providers that occur during use of vehicles (e.g., from energy use) Optional: Emissions from employee teleworking
Downstream transportation and distribution	Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company	The scope 1 and scope 2 emissions of transportation providers, distributors, and retailers that occur during use of vehicles and facilities (e.g., from energy use) Optional: The life cycle emissions associated with manufacturing vehicles, facilities, or infrastructure

Table 2: Scope 3 emissions focus areas

CHAPTER: 4 SCOPE AND METHODOLOGY

4.1 DEFINING BOUNDARIES

A crucial part of reporting carbon emissions is defining the influence of the company in question and establishing the corresponding emissions.

To establish this influence, we have considered:

1. Company size
2. Office locations, tenancy arrangements and servicing (heating, cooling, lighting etc.) systems
3. General operations
4. Assets e.g. company vehicles
5. Operational policy (with respect to the environment and energy)
6. Previous reporting

4.1.1 ORGANISATIONAL BOUNDARY

The first step is to define the organizational boundary of the business through either:

- The equity share approach e.g. if a company owns a percentage of an asset, then the corresponding percentage of emissions are reported.
- The two control approach; either
    - financial control e.g. reporting on 100% of anything which the business bears the majority risk and benefit from the financial performance.
    - operational control e.g. reporting 100% of emissions from operations it has control over, but not those where it has a financial stake, but not control.

4.1.2 OPERATIONAL BOUNDARY

The second step is to define the Operational Boundaries

Determining the scope of the three types of GHG emission within the organizational boundary.

Scope 1: Direct Emissions

Reporting those emissions from energy generation or fossil fuel use for the company from systems which it owns or controls, such as combustion in owned or controlled boilers, cars, etc.

Scope 2: Emissions from Purchased Electricity, Heat and Steam

Reporting carbon emissions associated with purchased power use, typically generated off-site by utility providers.

Scope 3: Other Indirect/ Supply Chain Emissions

An optional stage of reporting.

Reporting emissions which are a result of the company's operations, but from sources which are not owned by the reporting company or under their control.

4.2 COLLATION OF DATA

Ascertaining availability, sourcing and the quality of data to support calculation of Scope 1, 2 and 3 emissions, all play a part in establishing Carbon Emissions. Data collected includes:

1. Energy billing
2. Tariff agreements
3. Business travel/ emission reporting
4. LZC use
5. Procurement
6. Water Use
7. Waste management

In the case of organisations who operate from within tenanted spaces, the availability of data often relates to the relationship with the landlord.

It is acceptable where data is not deemed reliable to undertake:

- Pro-rate extrapolation
- Baseline comparison

4.3 ANALYSIS AND CALCULATION

Data is typically presented in basic consumption units; in order to convert this into Greenhouse Gas Emissions, a series of conversions are necessary.

The consumption figures are converted to emissions of each of the Greenhouse Gases through a series of factors listed and updated by the UK Government and published within the Government Standard Conversion factors[5]

It is then necessary to convert the emissions of each gas to a Carbon Dioxide equivalent (the reporting convention).

4.4 BASELINE REPORTING

The first year in which such reporting is undertaken typically represents a baseline year, which all further reductions are measured against.

4.5 REDUCTION TARGETS

In order to establish a set of reduction actions and targets, data will be analysed in granular detail to understand opportunities for savings and their likely magnitude.

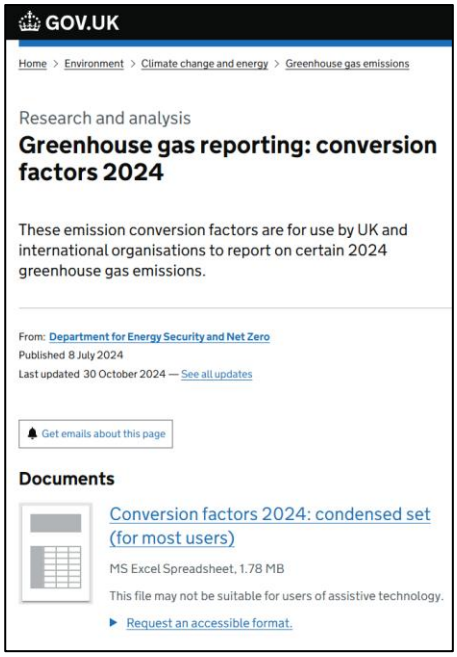
[5] Department for Business, Energy & Industrial Strategy and Department for Environment Food & Rural Affairs, UK Government GHG Conversion Factors for Company Reporting, version 1.0, 2023

CHAPTER: 5 ANALYSIS AND CALCULATION

In line with GHG Protocols consumption data has been collected, this has then been translated into Greenhouse Gas Emissions using relevant Conversion Factors[5].

The document provides a set of conversion factors for greenhouse gas reporting; the multiplication factors used to convert typical units of consumption of energy to Carbon Dioxide emission equivalence.

These conversion factors are issued by the UK Government and are updated annually based on the fuel mix of the consumption e.g. the fuel mix of generated electricity to the national grid.


GOV.UK

Home > Environment > Climate change and energy > Greenhouse gas emissions

Research and analysis

Greenhouse gas reporting: conversion factors 2024

These emission conversion factors are for use by UK and international organisations to report on certain 2024 greenhouse gas emissions.

From: Department for Energy Security and Net Zero
Published 8 July 2024
Last updated 30 October 2024 — See all updates

Get emails about this page

Documents

Conversion factors 2024: condensed set (for most users)
MS Excel Spreadsheet, 1.78 MB
This file may not be suitable for users of assistive technology.
Request an accessible format.

5.1 GREENHOUSE GASES

Conversions undertaken establish the key Greenhouse Gas emissions from each area of consumption.

Greenhouse Gas emissions include:

- Carbon Dioxide (CO_2)
- Methane (CH_4)
- Nitrous Oxide (N_2O)

An overall emission figure is then calculated based on the combined Carbon Dioxide equivalent emissions.

5.2 CALCULATION MECHANISM

The current published UK conversion factors are used to convert consumption into Carbon Dioxide equivalent emissions; firstly by converting to tonnes of each gas per unit of consumption then secondly by converting into metric tonnes of CO_2 equivalent emissions.

It is the combined total of the resultant emissions which are reported.

5.3 EXTRAPOLATION OF DATA

Where data is not available, it is acceptable to establish based on Industry Baselines/ Averages, with the view that reporting in subsequent years will attempt to establish actuals.

This is particularly relevant to the project work of John Perkins Construction. Where data has not been monitored in full, Carbon Consult have attempted to extrapolate figures using industry reports such as that produced by Glenigan[6]

[6] Glenigan, Dec' 21, 2019/ 20 UK Industry Performance Report

CHAPTER: 6 DEFINING BOUNDARIES

John Perkins Construction Ltd. is a Bristol-based construction company which has been operational since 1992. Primarily working across the South-West of England and South Wales for both national and local clients across a range of projects comprising both new and refurbishments in all sectors.

The company has an annual turnover of £12-13M with a core team of 21 employees across two office locations.

6.1 ORGANISATIONAL BOUNDARY

- Total no. of staff 21
- Two offices – total occupied area of 227.18m² (Bristol) and ~20m² (Newport)
- One let asset – Bristol - 178.94m²
- Three company owned vehicles
- ~ 4 Construction projects during the reporting year

6.2 OPERATIONAL BOUNDARY

In undertaking this study we have evaluated the consequential Greenhouse Gas emissions associated with the operations and project activities of John Perkins Construction.

This has included:

Office		
Dragons Court, Bristol	Occupied Area	227.18m²
	Tenanted Area	178.94m² *
	Average Occupancy	9
	Services	• Gas – combi boiler. Heating/ Hot water. Under contract with British Gas • Grid Electricity – serving small power, LED lighting throughout controlled by Absence detection in kitchen and toilets. Under contract with British Gas Lite • Roof Mounted PV* • No Cooling – natural vent only

Office		
	Operating Hours	8:00 – 17:30, 5 days a week
Gold Tops, Newport	Occupied Area of whole building	20 m² of a total 368.45 m²
	Average Occupancy	1
	Services	Gas heating and hot water – standard controls Electric lighting – standard controls
	Operating Hours	8:00 – 17:30, 1 day a week

Table 3: John Perkins Construction Office/ Operational Information

*It has been noted that following the installation of roof mounted PV's, the metering system in place does not allow for direct monitoring of the usage of John Perkins versus tenant electricity versus feedback of generated electricity back to the grid.

Project		
Executive Lounge Extension, Bristol Airport	Area	627m²
	Cost	£5,500,000
	Extent of Project	Roof top extension to executive lounge Shell and Core only (fit out by others)
	Duration	11/03/24 – 31/03/25
Transporter Bridge Visitor Centre, Newport	Area	650m²
	Cost	£2,522,600
	Extent of Project	New visitor centre for the historic transporter bridge over the River Usk
	Duration	03/10/22 – 18/12/24
Ashcombe School, Weston-Super-Mare	Area	1,290m²
	Cost	£5,200,000
	Extent of Project	Extension to Ashcombe Primary school. Timber framed classrooms, staff office, servery and reception. Built to BREEAM Excellent.
	Duration	01/02/24 – 31/01/25
Ysgol Gyfun Gwent Is Coed, Newport	Area	1,758m²
	Cost	£3,400,000
	Extent of Project	New sports centre and informal hard play areas at a Welsh Medium Comprehensive School
	Duration	17/06/24 – 11/06/25

Table 4: John Perkins Construction, Project information during reporting year

6.3 DATA

The following tables summarise the availability of data within the reporting year.

✓ *Data Collected and presented in a usable format*
✗ *Data Not Collected*
N/A *Item not relevant*

6.3.1 OFFICE INFORMATION COLLECTED:

	Scope 1			Scope 2			Scope 3					
	Stationary Combustion (Gas)	Process & Fugitive Emissions	Mobile Combustion - Company Owned Vehicles	Electricity	Imported Heat	Electric Vehicles	Business Travel	Employee Commute	General & Recyclable Waste	Waste Transportation	Owned Leased Assets	Electricity T&D
Bristol Office	✓	N/A	✓*	✓	N/A	N/A	✓**	✓***	✓	Estimate based on Waste Service provider	✓	✓
Newport Office	Proportional Split of consumption	N/A	✓*	Proportional Split of consumption	N/A	N/A	✓**	✓***	✗	✗	N/A	✓

*All mobile combustion (company owned vehicles) included within single dataset (covering all offices and projects at once)
**All business travel (privately owned vehicles) included within single dataset (covering all offices and projects at once)
***All employee commutes covered in single dataset (covering all offices and projects at once)

6.3.2 PROJECT INFORMATION COLLECTED:

	Scope 1			Scope 2			Scope 3						
	Stationary Combustion (Gas)	Process & Fugitive Emissions	Mobile Combustion - Fuel (diesel generator/ site vehicles)	Electricity	Imported Heat	Electric Vehicles	Business Travel	Employee Commute	C&D Waste - Disposal	C&D Waste - Transportation	Materials - Embodied Impact	Materials - Transport	Electricity T&D
Bristol Airport	N/A	N/A	✓	✓	N/A	N/A	✓**	✓***	✓	✓	✗	✓	✓
Newport Transporter bridge visitor centre	N/A	N/A	✓	✓	N/A	N/A	✓**	✓***	✓	✓	✗	✗	✓
Ashcombe School	N/A	N/A	✗	✓	N/A	N/A	✓**	✓***	✓	✓	✗	✓	✓
YGGIC	N/A	N/A	✗	Insufficient Data. Extrapolated from Industry Averages	N/A	N/A	✓**	✓***	Insufficient Data. Extrapolated from Industry Averages	✗	✗	✗	Insufficient Data. Extrapolated from Industry Averages

*All mobile combustion (company owned vehicles) included within single dataset (covering all offices and projects at once)
**All business travel (privately owned vehicles) included within single dataset (covering all offices and projects at once)
***All employee commutes covered in single dataset (covering all offices and projects at once)

6.4 DATA COLLECTION

6.4.1 BRISTOL OFFICE

The metering of electricity within the Bristol Office, prior to the installation of the PV's was via one single entry meter and then a single sub-meter to the John Perkins occupied portion of the building. A simple calculation allowed the calculation of the tenant usage.

Once the PV panels were installed, due to the way the metering was set up, it was not possible to establish the split in the same way.

It has been necessary to review historic consumption to establish a proportional split in usage, which has then been applied to the overall consumption post PV installation.

Whilst the PVs were installed in Nov' 23 and started contributing at that point, a separate PV meter was only installed in Jun'24.

The building management team were also unaware of any feedback of surplus energy to the national grid (generated at a time when not needed within the building).

The PV generated Electricity has contributed to the overall usage within the building, however due to the way the current metering is split it, has not been possible to apportion PV generated Electricity between the two parties (John Perkins and Tenant).

It can however be said that whilst the John Perkins electricity emissions sit within Scope 2 and the leased asset emissions from the tenant sit within Scope 3, the renewables benefit is taken account in the overall figure.

6.4.2 NEWPORT OFFICE

The Newport office is a tenanted space within a multi-tenant building. At present there is no mechanism to allow separable metering/ monitoring for each tenant separately.

The landlord has provided billing information pertaining to electricity and gas consumption for the building as a whole, this has been reduced to reflect the John Perkins space based on % of the whole building occupied. This does not take into account occupancy patterns e.g. if a single day or multiple days are occupied in a week.

Information on waste generation has not been made available.

6.4.3 PROJECTS

The level of project reporting varies even within the Organisation. This is seen to relate to:

- the scale of the project;
- type of project;
- ability to allow separable metering; and,
- If a project is targeting a standard (e.g. BREEAM).

As the duration of projects varies, in order to present comparable figures, all have been adjusted to reflect consumption over the observed period.

6.5 BRISTOL OFFICE IMPROVEMENTS PRIOR TO THE BASELINE REPORTING YEAR

It should be acknowledged that prior to the baseline reporting year, improvements to the Bristol office had been made with the aim of reducing Carbon emissions.

Primarily these improvements included the installation of roof mounted solar panels, along with other improvements to the building fabric and internal systems.

PVs were installed to the building in Nov ’23 however a PV generation meter was only introduced Jun ’24, with a new Grid Meter installed part way between, around May ’24.

Based consumption apportionment (see section 7.4.1), we can show that for the 12 months either side of PV installation the following savings were achieved:

- Before PV: a total of 12,014.6 kWh Grid Electricity was consumed (~2,487.91 kgCO2e)
- After PV: a total of 7,563.4 kWh of Grid Electricity was consumed (~ 1,566.18 kgCO2e)
- This equates to an approximate 37% reduction or saving

If the metering set up is altered and further clarity gained over the PV contribution/ feed back to the Grid, then it may be possible to show a more accurate figure for the JP demise; note: revision to the metering is one of our main recommendations.

Energy consumption and resulting emissions for electricity use within the Bristol office proportionally contributes (including the PV saving) <2% of the overall John Perkins annual carbon emissions during the baseline reporting year.

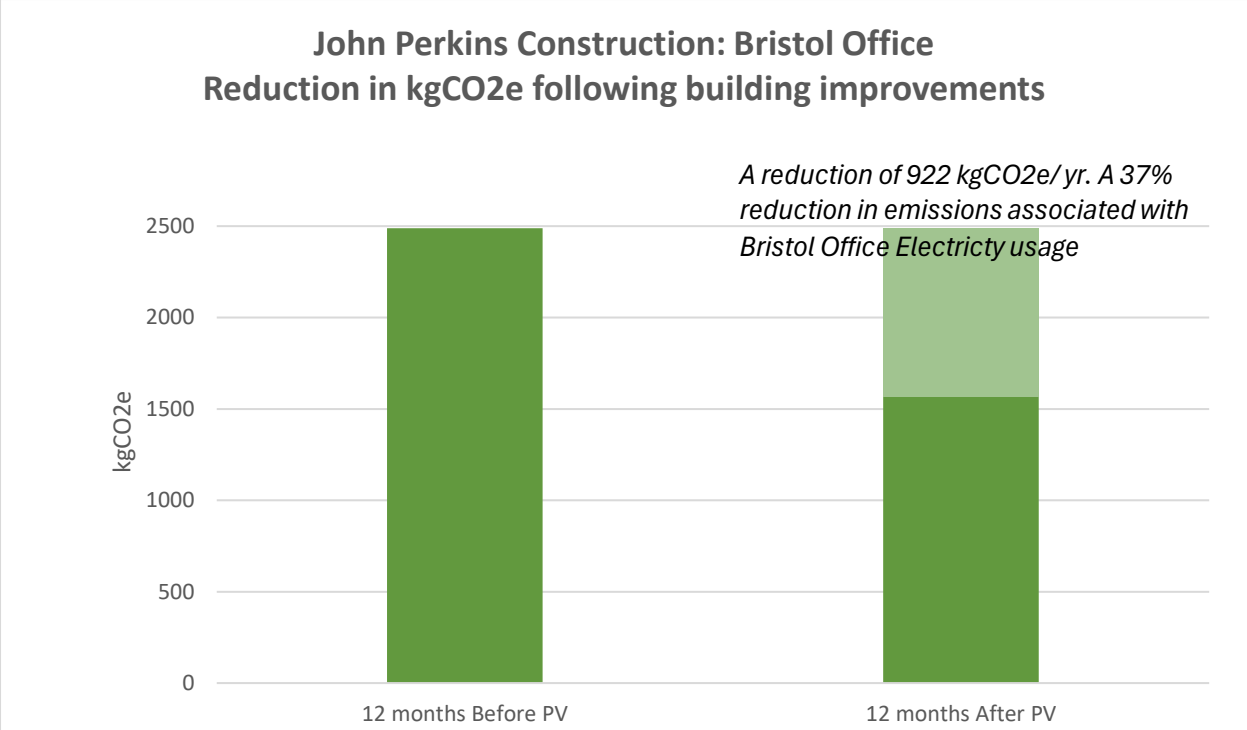


Figure 3: kgCO2e savings as a result of PV installation.

CHAPTER: 7 DATA ANALYSIS

7.1 SCOPE 1 CONSUMPTION

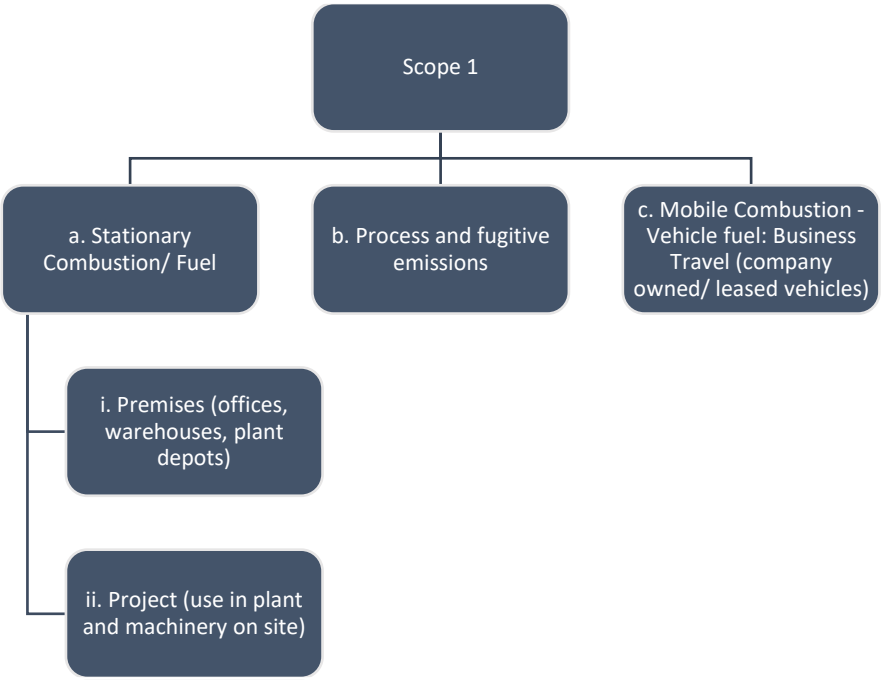


Figure 4: Scope 1 emissions coverage

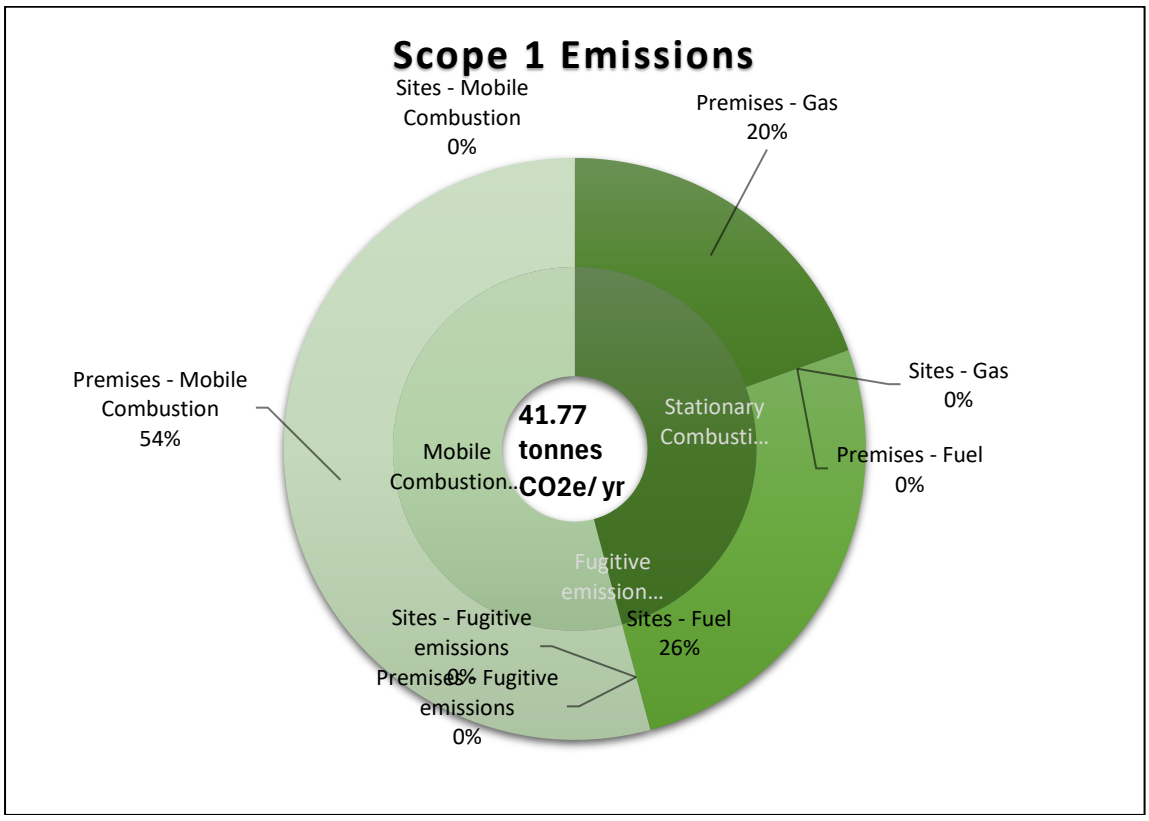


Figure 5: Scope 1 emissions and percentage split by source

7.2 SCOPE 1: NOTES AND OBSERVATIONS

7.2.1 OFFICES

The Bristol office has a Gas combi boiler supplying heating and hot water to the building. The ground floor is a leased to a tenant with only an electricity supply.

The Newport Office is a tenanted space within a larger multi-tenant office. It is served by Gas boiler central heating and hot water and electricity lighting etc. As a tenanted space, direct control over the Energy supplies is not possible; in order to ascertain consumption figures a proportion of overall billing/ usage has been established based on % of the overall occupied office.

7.2.2 PROJECTS/ SITES

Fuel usage on sites includes:

- Generators
- Site vehicles e.g. diesel-powered machinery

7.2.3 OTHER

No HVAC systems incorporating Refrigerants have been observed within either office or on any project.

Emissions from company owned vehicles (1x Hybrid and 2x diesel) have been included in Scope 1, noting that emissions from privately owned vehicles used for business purposes are included in Scope 3.

Scope 1 Emissions	Inclusions	kg CO2e/yr
Stationary Combustion		**19,444.25**
Premises – Gas	- Combustion for heating/ hot water	8,272.25
Sites – Gas	- Combustion for heating/ hot water	-
Premises – Fuel	- Combustion for heating/ hot water	-
Sites – Fuel	- Combustion for heating/ hot water - Generator/ Site Vehicles	11,172.00
Fugitive emissions		**-**
Premises - Fugitive emissions	- Unintentional release from heating/ cooling equipment e.g. refrigerants	-
Sites - Fugitive emissions	- Unintentional release from heating/ cooling equipment e.g. refrigerants	-
Mobile Combustion		**22,992.20**
Premises - Mobile Combustion	- Emissions from Company owned/ leased vehicles	22,992.20
Sites - Mobile Combustion	- Emissions from Company owned/ leased vehicles	-

Table 5: Scope 1 emissions tabulated data

7.3 SCOPE 2 CONSUMPTION

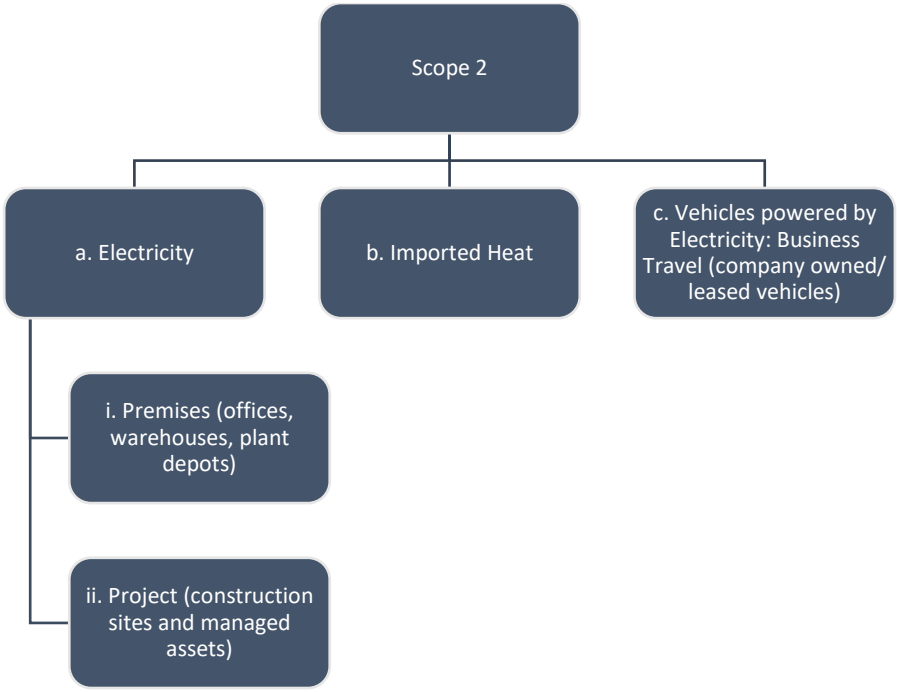


Figure 6: Scope 2 emissions coverage

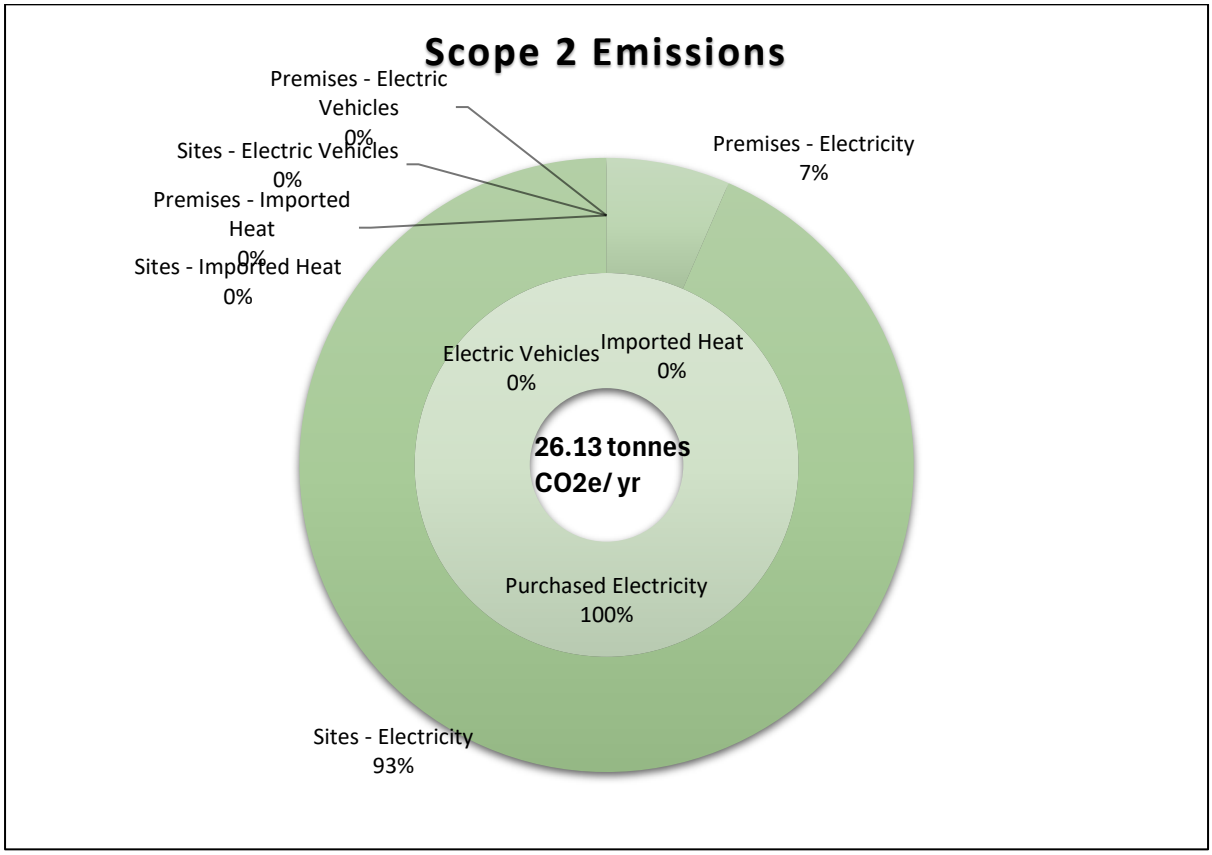


Figure 7: Scope 2 emissions and percentage split by source

7.4 SCOPE 2: NOTES AND OBSERVATIONS

7.4.1 OFFICES

The Bristol office has PV generation technology installed to the roof, however the metering mechanisms in place have not allowed direct readings of consumption/ generation. Historic data has been used to ascertain a proportional split of electricity consumption between the tenanted ground floor and the John Perkins occupied first floor, (35% tenant, 65% John Perkins)

The Newport office is a rented space; direct control over the Energy supplies is not possible; in order to ascertain consumption figures a proportion of overall billing/ usage has been established based on % of the overall occupied office

7.4.2 PROJECTS/ SITES

Where consumption data has not been available for a particular site e.g. no monitoring of separate electric supply, Industry Averages[6] have been used to ascertain consumption.

7.4.3 OTHER

No imported heat or Electric (only) vehicle usage has been noted either at each office or for site works.

Scope 2 Emissions	Inclusions	kg CO2e/yr
Purchased Electricity		**26,553.67**
Premises - Electricity	Bristol – John Perkins demise only Newport - % apportionment of total building consumption	1,728.30
Sites - Electricity	Combination of monitored and extrapolated figures	24,825.38
Imported Heat		-
Premises - Imported Heat	-	-
Sites - Imported Heat	-	-
Electric Vehicles		-
Premises - Electric Vehicles	-	-
Sites - Electric Vehicles	-	-

Table 6: Scope 2 emissions tabulated data

7.5 SCOPE 3 CONSUMPTION

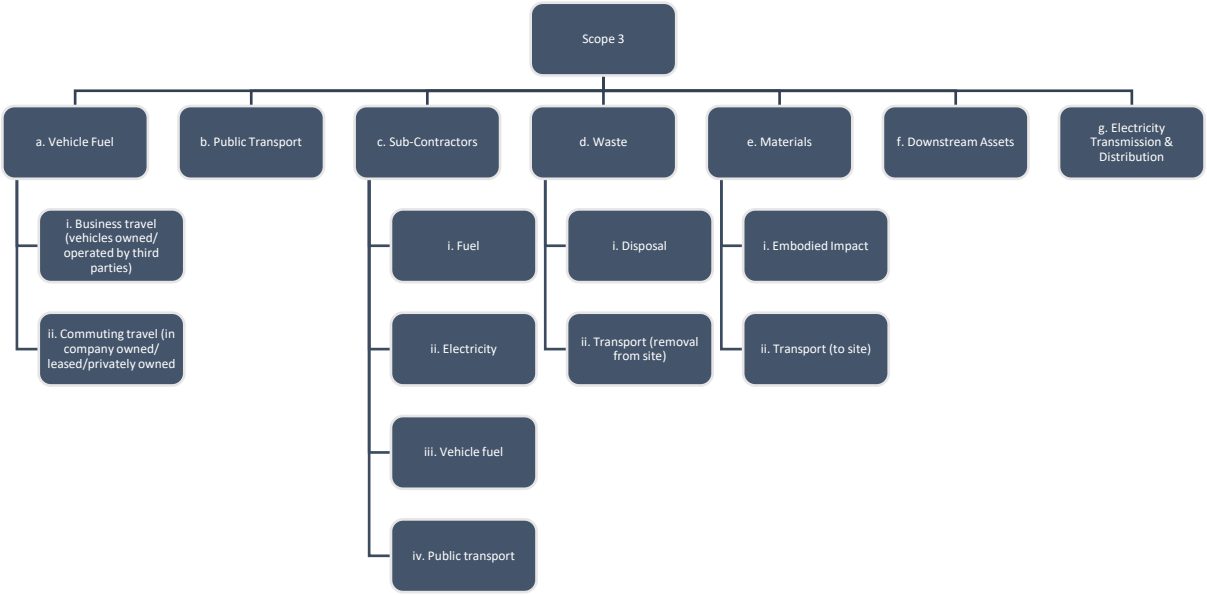


Figure 8: Scope 3 emissions coverage

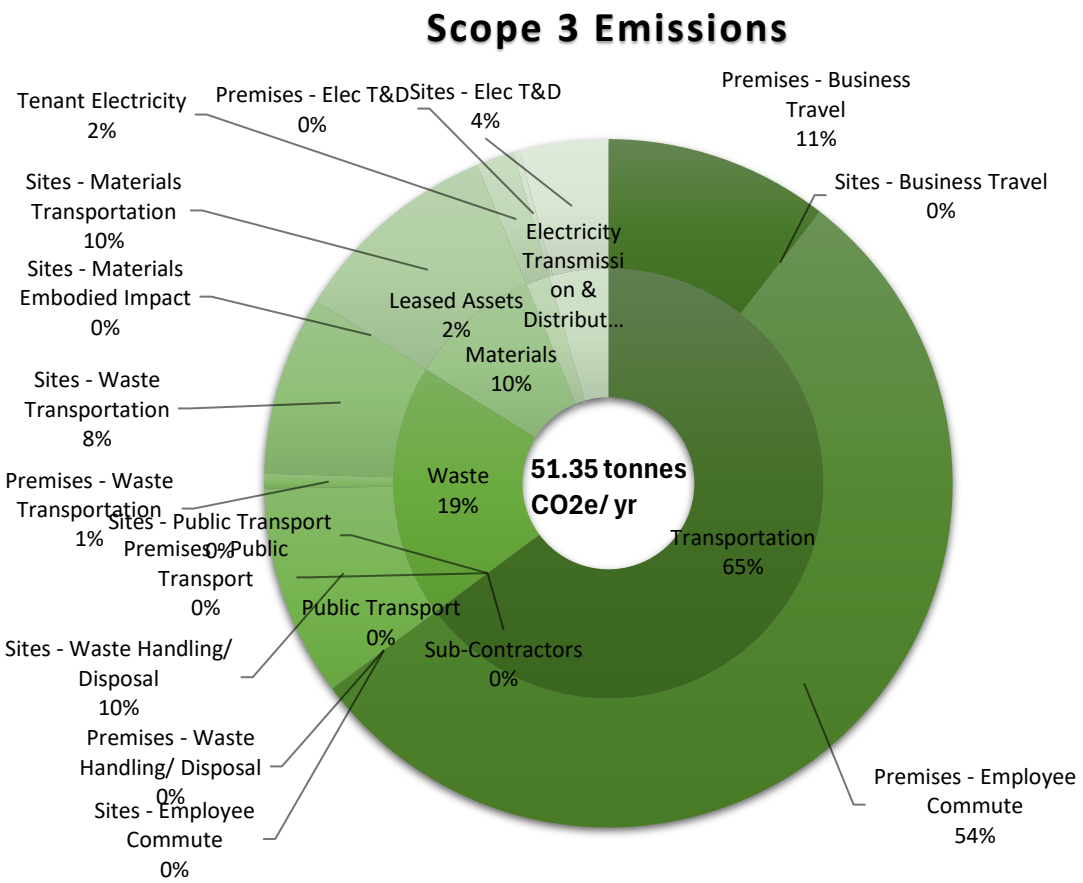


Figure 9: Scope 3 emissions and percentage split by source

7.6 SCOPE 3: NOTES AND OBSERVATIONS

7.6.1 OFFICES

Business Travel data includes mileage in non-John Perkins owned vehicles (e.g. personal/ private vehicles) for business purposes, usually noted via expenses claims.

Employee commuting is based on extrapolated data on a member of staffs' usual means of travel and the average number of days a week they attend the office.

The Electricity consumption of the leased asset has been incorporated into Scope 3.

7.6.2 PROJECTS/ SITES

Data monitored/ collected on each site has varied hugely.

Actual data has been combined with extrapolated data from Industry Averages for most areas, however there are omissions from Scope 3 at this stage including:

- Materials Usage (Embodied impact)
- Materials Transportation

This is because the information presented is either incomplete or further information is required to allow calculation, or information is not currently collected and there are no industry benchmarks available.

Scope 3 Emissions	Inclusions	kg CO2e/yr
Transportation		**33,822.26**
Premises - Business Travel	Including all data from both offices and projects	5,493.53
Sites - Business Travel	As above	-
Premises - Employee Commute	Including all data from both offices and projects	28,328.73
Sites - Employee Commute	As above	
Public Transport		
Premises - Public Transport	-	-
Sites - Public Transport	-	-
Sub-Contractors		-
Waste		**9,943.90**
Premises - Waste Handling/ Disposal	Bristol office only	10.72
Sites - Waste Handling/ Disposal	Combination of monitored and extrapolated figures	5,169.95
Premises - Waste Transportation	Bristol office only	362.11
Sites - Waste Transportation	Combination of monitored and extrapolated figures	4,401.11
Materials		**5,165.71**
Sites - Materials Embodied Impact	Insufficient detail within data or not measured	**
Sites - Materials Transportation	Data from 2 sites only	5,165.71
Leased Assets		**925.53**
Tenant Electricity	Proportional split within Bristol office	925.53
Electricity Transmission & Distribution		**2,321.22**
Premises - Elec T&D	A function of electric consumption: Bristol and Newport Offices	149.52
Sites - Elec T&D	A function of electric consumption: Combination of monitored and extrapolated figures	2,171.70

Table 7: Scope 3 emissions tabulated data

CHAPTER: 8 BASELINE REPORTING

8.1 PPN-0621

In line with the requirement of PPN-0621 Carbon Reduction plan:

Baseline Year: 2024
Additional Details relating to the Baseline Emissions calculations.
Reporting in the year through to 31/01/25 ***Notes on coverage:*** ***Offices:*** - ***Bristol (Head Office) with tenanted ground floor. Current metering does not allow for direct understanding of the split in usage and full understanding of PV generation/ feedback to the grid*** - ***Newport office; a small, rented space within a multi-tenant office building*** - ***All transportation data e.g. Office and Project business travel and use of company vehicles was included within the same dataset*** ***Project information:*** - ***Information collected has varied according to each project*** - ***Where information has not been available, industry averages have been used to extrapolate figures*** - ***Insufficient information, lack of detail to data has meant that the following areas have not been fully incorporated: Materials Consumption (embodied impact) or Transportation***
Baseline year emissions: *through to 31/01/25*

EMISSIONS	
Scope 1	**41.77 tCO2e**
Scope 2	**26.13 tCO2e**
Scope 3 **(Included Sources)**	**51.35 tCO2e** **(Business travel, Commuting, Waste and Waste Transporting and Electricity Transmission losses)**

Total Emissions	**119.26 tCO_2e**

Table 8: Baseline data in line with PPN 0621

8.2 EMISSION INTENSITY

Tonnes of CO_2e per total £m sales revenue	8.67
Tonnes of CO_2e per total £m Earnings Before Interest, Tax, Depreciation and Amortisations (EBITDA)	3,429
Tonnes of CO_2e per full time equivalent	5.68

Table 9: Emission intensity

CHAPTER: 9 REDUCTION PLANNING

9.1 OPPORTUNITIES BY SCOPE

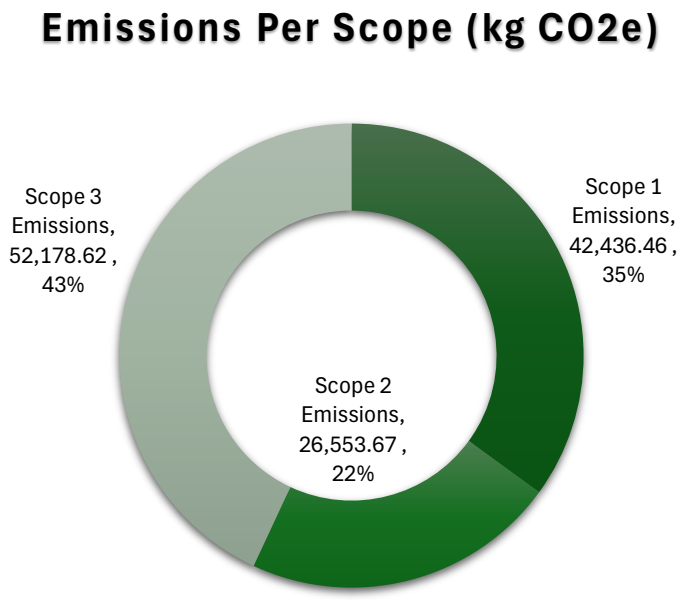


Figure 10: Proportional emissions per scope

This reporting can be considered the baseline year for Carbon reporting, as such there are no previous targets or reduction commitments.

Appendix 1 to this report is a strategic plan timeline for achieving further reductions in Carbon Emissions.

The following reduction targets have been established along with indicative reductions in tCO_2e emissions.

9.2 REDUCTION OPPORTUNITIES

The following table shows the **'top 10'** emissions from John Perkins Construction based on % of overall CO2e emissions:

	Scope	Item	Element	kg CO2e	% Contribution
1	3	Employee Commute	All	28,328.73	23.38%
2	2	Purchased Electricity	Sites	24,825.38	20.49%
3	1	Mobile Combustion	Company Vehicles	22,267.11	18.38%
4	1	Stationary Combustion	Sites	11,172.00	9.22%
5	1	Stationary Combustion	Bristol Office	6,966.60	5.75%

	Scope	Item	Element	kg CO2e	% Contribution
6	3	Business Travel	All	5,493.53	4.53%
7	3	Waste (generated)	Sites	5,169.95	4.27%
8	3	Materials (transportation)	Sites	5,165.71	4.26%
9	3	Waste (transportation)	Sites	4,401.11	3.63%
10	3	Transmission and Distribution	Sites	2,171.70	1.79%

9.2.1 EMPLOYEE COMMUTE

Approximately 23% of all emissions (54% of scope 3 emissions) are shown to be from Employee Commuting.

This is partially due to:

- the location of offices,
- where staff choose to live,
- nature of the business and
- accessibility to alternative transport (e.g. public transport, active commutes).

A Staff survey is encouraged to ascertain if opportunities exist for alternative transport.

Potential outcomes could include:

- Incentivization e.g. cycle to work scheme, evaluate facilities to encourage more active commutes (showers, lockers, secure storage.)
- Office Green Travel Plan should be developed to encourage and support staff making decisions with regard to sustainable transport.
- Provision of information e.g. bus timetables, route maps etc.

9.2.2 PURCHASED ELECTRICITY

Office electricity use and Project electricity use (metered) is split approximately 7% to 93% representing 1% and 20% overall respectively

OFFICE ELECTRICITY

It is recommended that further metering is installed to the Bristol office to allow:

- direct metering of the John Perkins demise and that of the tenant; and,

- the generation/ usage of the PV generated electricity and any feedback to the grid of surplus production.

A better understanding of the supply to the Newport office is required prior to the investigation of opportunities. Metering of each demise would allow more accurate understanding of consumption and potential allow more accurate billing based on actual usage.

PROJECT ELECTRICITY

Electricity use on site can be, and is often, restricted by opportunities to connect to existing client supplies, or a separately metered supply. Where possible it is encouraged that separate metered supplies are used to enable accurate reporting.

An opportunity exists on projects which require the use of office cabins to use those with integrated Low and Zero Carbon Technology Electricity e.g. PV Panels integral to the cabin roof.

9.2.3 MOBILE COMBUSTION: COMPANY VEHICLES

Emissions from Company Owned Vehicles equates to 54% of all Scope 1 emissions (19% overall). It is noted that one of these vehicles is already a Hybrid, with the others being diesel vans.

Opportunity to switch to fully electric or hybrid vans should be explored to reduce emissions.

9.2.4 STATIONARY COMBUSTION: PROJECTS

9% of all emissions (26% of all Scope 1 emissions) is from the use of fuels on site e.g. generators, vehicles. This is significant considering that data is not available for all sites.

Whilst, to an extent, these are unavoidable on a construction site; opportunities for replacing diesel fueled vehicles with electric powered could be explored to reduce emissions. Any generator usage could be reduced by utilizing site cabins which incorporate solar PV.

9.2.5 STATIONARY COMBUSTION: OFFICES

7% of all emissions (19% of all Scope 1 emissions) are from the combustion of gas within the two offices, which is being used to provide heating and hot water.

An opportunity exists to reduce these through a change to electrically powered technology e.g. heat pumps, point of use hot water.

Whilst 1 kWh of energy from Gas is broadly similar to Electricity in terms of Carbon Emission factors (Grid Elec: 0.207074 and Gas 0.20 (net CV)), if the electricity used to power a Heat

Pump could either be supplied via on site renewables or through a renewables tariff, a sizeable reduction could be achieved, the corresponding emissions would reduce greatly.

9.2.6 BUSINESS TRAVEL

Just over 5% of all emissions from the business are linked to Business Travel for employees utilizing their own vehicles.

This partly relates to the location of projects and the opportunities for staff to access the site by more sustainable means e.g. if the site is a city centre location with little parking, it may be easier for staff to travel via bus. If the project is remote, with parking provided, or equipment is to be moved, then car usage may be more appealing.

Other than incentivizing / encouraging staff to make more sustainable decisions relating to vehicle use, it is difficult for John Perkins Construction to influence this aspect.

9.2.7 WASTE GENERATED: PROJECTS

Relating to just over 4% of overall emissions, the handling/ disposal of Construction and Demolition waste could be reduced further through opportunities such as:

- Re-use of site won material on site (also avoiding Waste transportation emissions)
- Re-use of material with low level re-processing
- Recycling
- Diversion from landfill

9.2.8 MATERIALS: TRANSPORTATION

Whilst not fully quantified, emissions from two of the four projects considered relating to the transportation of materials equates to at least 4% of overall emissions.

Of course, this relates to the type and location of project, but also the type and availability of suppliers. Every effort should be made to source materials locally to reduce transportation miles.

9.2.9 WASTE: TRANSPORTATION

Linked to the above Waste generated.

Opportunities for re-use of site won material on site should always be explored.

Any waste that is generated should be handled by Registered Waste handlers who are local to the project to reduce miles travelled by the waste.

9.2.10 ELECTRICITY TRANSMISSION & DISTRIBUTION: PROJECTS

A function of the Electricity consumption of a project as per 9.2.2 above.

Reduction could be achieved through the use of Low or Zero Carbon technology on site e.g. Site Cabins with integrated PV generation, low energy lighting and fittings.

More accurate monitoring/ recording of electric usage on all sites, will allow for greater understanding of consumption, which in turn will aid with identifying and justifying change.

9.3 MONITORING/ RECORDING IMPROVEMENTS

9.3.1 OFFICES

Improvements to the metering within the Bristol office will lead to more detailed and accurate understanding of consumption. This in turn could support more accurate billing to the tenant.

Automatic logging of data through the meters will allow more accurate, regular recording of information (avoiding any human error).

9.3.2 PROJECTS

The reporting of many aspects of project/ site work is inconsistent or not set up to allow the collection of the granular detail required for GHG reporting. Areas where data is not comprehensively monitored include:

- Embodied impacts of materials
- Transportation of materials/ waste
- Operatives accessing site
- Sub-contractors

Accurate consistent monitoring would lead to better understanding and identification of opportunities for reduction.

Greater detail on Embodied impacts of materials could be achieved through production of Whole Life Carbon studies and sourcing materials with higher levels of information on product impact e.g. Environmental Product Declarations.

9.4 POTENTIAL SAVINGS

	Scope	Item	Element	kg CO2e	% Contribution	Opportunity	Potential Saving
1	3	Employee Commute	All	28,328.73	23.38%		
2	2	Purchased Electricity	Sites	24,825.38	20.49%	Reduce Electric consumption on site through Energy efficient and LZC (e.g. PV) linked to site cabins Operational efficiencies could be explored e.g. turning off equipment/ lighting when not in use	A 25% reduction in consumption would achieve a saving of 6,206.34 kgCO2e
3	1	Mobile Combustion	Company Vehicles	22,267.11	18.38%	Switch all company vehicles to battery electric	Vehicle emissions will reduce to 0, however this will likely increase purchased electricity for office or sites
4	1	Stationary Combustion	Sites	11,172.00	9.22%	Reduce Diesel usage on site through switching to electric vehicles linked to LZC (e.g. PV) charging	A 25% reduction in consumption would achieve a saving of 2,793 kgCO2e
5	1	Stationary Combustion	Bristol Office	6,966.60	5.75%	Replacing the Gas fuelled Heating and Hot-water system with an all-electric system linked to LZC (e.g. PV) supply Operational efficiencies could be explored e.g.	A 100% reduction in consumption would achieve a saving of 6,966.6 kgCO2e

	Scope	Item	Element	kg CO2e	% Contribution	Opportunity	Potential Saving
						reducing hours of operation of heating/ hot-water	
6	3	Business Travel	All	5,493.53	4.53%		
7	3	Waste (generated)	Sites	5,169.95	4.27%		
8	3	Materials (transportation)	Sites	5,165.71	4.26%		
9	3	Waste (transportation)	Sites	4,401.11	3.63%		
10	3	Transmission and Distribution	Sites	2,171.70	1.79%		

CHAPTER: 10 NEXT STEPS

10.1 DIRECTORIAL SIGN-OFF

It is a requirement that a Carbon Reduction Plan receives approval from the relevant Board of Directors.

10.2 PUBLICATION OF RESULTS

The Carbon footprint and corresponding reduction plan should be published on an organisations' UK website in a prominent location.

10.3 ANNUAL MONITORING

The carbon reporting and reduction plans should be revisited annually to ensure movement towards Zero Carbon.

10.4 IMPROVEMENT

Review of suggested areas for improvement so that elements can be implemented where possible.

APPENDIX 1 - STRATEGIC PLAN TIMELINE

John Perkins Construction: Carbon Reduction Planning
Carbon Consult

This Summary Plan is to be read in conjunction with our reporting: 04/08/25
Due to issues associated with the current set up for metering/ monitoring of consumption both within the company offices and on site, we have not attempted to quantify any improvements until changes to the metering/ monitoring have been made.

	Step 1: Reporting Improvements	Step 2: Policy Improvements	Step 3: Infrastructure changes	Step 4: Equipment Changes	
	Enabling more accurate reporting and understanding of consumption	Enabling increases in efficiency and informed decisions	Enabling greater reductions		
	Short Term	Medium Term		Long Term	
	2025	2026	2027	2028	2029	2030
Reporting						
Carbon Reporting		- Annual update	- Annual update	- Annual update	- Annual update	- Annual update
Bristol Office						
Metering/ Monitoring		- Separate Consumption metering for tenant (also allowing more reflective billing for consumption) - PV Grid Feedback monitoring - Automatic recording/ reading		- External feed metering for EV charging		
Controls			- Evaluate automatic controls (with occupant override) e.g. daylight links to lighting, increase zonal controls			
Fuels					- Move from Gas supply to all electric systems e.g. ASHP and direct elec water	
Travel		- Staff Survey	- Develop Green Travel Plan and explore incentives to encourage more sustainable commutes	- Implement incentives and support infrastructure for sustainable commutes		
Newport Office						
Metering/ Monitoring		- Lobby landlord to install separate tenancy metering				
Sites/ Projects						
Reporting		- Improve mechanisms for monitoring/ recording of site consumption/ information				
Metering		- Implement metering/ monitoring of all supplies to site				
Transport			- Green Travel plans for every site		- Upon renewal lease's consider switch to all electric vehicles - Switch to all-Electric site vehicles	
Procurement			- Sustainable Procurement Plans			
Resources/ Waste			- Resource management Plans			
Energy Efficiency			- Energy Efficiency Plans	- Green site generators - Green site cabins		