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EVOENERGY
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CORPORATE GREENHOUSE GAS INVENTORY

Reporting Period: 2024

Executive Summary

EvoEnergy Ltd is a UK-based provider of renewable energy solutions, specialising in the design, development, installation, and maintenance of systems including solar photovoltaics (PV), battery storage, electric vehicle (EV) charging, and smart grid technologies. The company holds PAS 2060 certification, reflecting its achievement of carbon neutrality across its operations through robust measurement, reduction planning, and offsetting strategies. Its environmental sustainability policy aligns with ISO 14001:2015 standards, demonstrating a commitment to effective environmental management, resource efficiency, waste reduction, and sustainable material use. EvoEnergy also works with clients across energy intensive sectors, such as aerospace, manufacturing, data centres, and public institutions to support emission reduction and energy efficiency through tailored renewable energy systems.

This report provides a comprehensive account of EvoEnergy's carbon footprint arising from its operations, covering the twelve-month period from 1st April 2024 to 31st March 2025 (hereafter referred to as FY24).

This carbon footprint has been calculated in line with the Greenhouse Gas (GHG) Protocol covering Scope 1, 2, and 3 emissions.

The emissions categorised by Scope under the location-based approach are listed in Table 1. The largest source of emissions were Scope 3 at 6,665.16 tCO_2e (98.27%), followed by Scope 1 emissions at 98.28 tCO_2e (1.45%). Scope 2 was the smallest source of emissions at 19.05 tCO_2e (0.28%).

Table 1: Emissions by Scope under the location-based approach

Emissions Source	Emissions (tCO_2e)
Scope 1	98.28
Scope 2	19.05
Scope 3	6,665.16
Total	**6,782.48**

Figure 1 segments the sources of Scope 3 emissions by percentage. Within Scope 3, the largest emissions were from purchased goods and services at 6,404.43 tCO_2e (96.09% of Scope 3 emissions). This was followed by upstream transportation and distribution at 107.70 tCO_2e (1.62% of Scope 3 emissions) and then employee

commuting at 69.71 tCO_2e (1.05% of Scope 3 emissions). Waste generated in operations was the smallest category of Scope 3 emissions at 1.43 tCO_2e (0.02% of Scope 3 emissions).

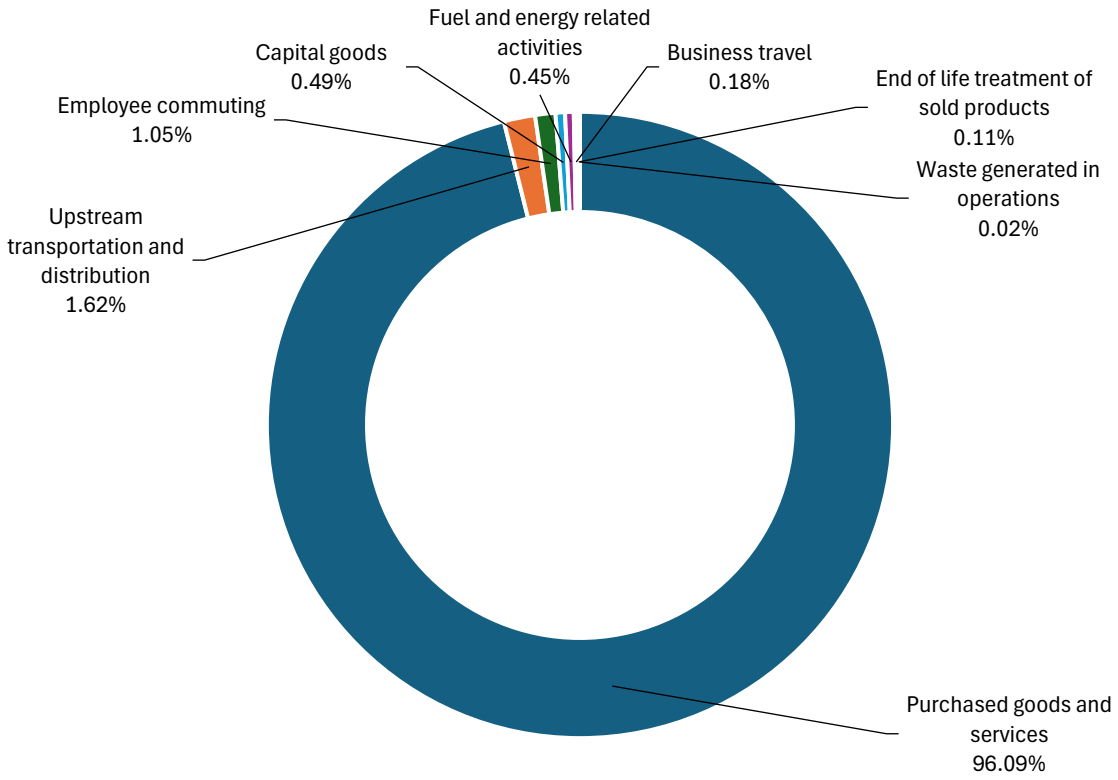

Figure 1: % of Scope 3 emissions by emission source

Based on the findings of this report, it is recommended that EvoEnergy develop a comprehensive net-zero strategy to identify and implement opportunities for reducing its carbon footprint across its operations. Continuation of annual GHG reporting is also advised to enable ongoing monitoring of progress. While majority of data provided was well-structured and of good quality, minor improvements in data governance are recommended to ensure consistency across categories. In addition, EvoEnergy should consider options such as procuring Renewable Energy Certificates (RECs) for its main site, which would support a reduction in market-based Scope 2 emissions.

Quality Assurance

Client:	EvoEnergy
Date:	5th September 2025
Reporting Period:	1st April 2024 – 31st March 2025

The accuracy of this GHG assessment is directly related to the quality of the data provided by the client.

Primary data representative of activities occurred during the reporting period is used where available. In certain circumstances, secondary data in the form of estimates, extrapolations and/or industry averages is used where primary data is not available.

Assessments based largely on secondary data should only be viewed as an estimate of GHG emissions impact, and actual emissions may vary significantly. It is expected that all clients should aim to improve the proportion of primary data over time.

A Greenhouse Gas inventory produced by MyCarbon, an inventory service provided by Carbon Green Ltd.

Gouri Sreekumar Carbon Consultant, MyCarbon		05/09/2025
Dr. Toby Green Co-Founder & Director MyCarbon		05/09/2025

If EvoEnergy are satisfied with the above information and the data provided is representative of authentic client activities within the reporting period, please sign below:

Client Representative Name:	Email:
Tom Aldous	tom.aldous@evoenergy.co.uk

Contents

1 Introduction

This is a greenhouse gas (GHG) inventory report for EvoEnergy for FY24, produced by MyCarbon.

EvoEnergy Ltd is a UK-based renewable energy company delivering end-to-end solutions in solar photovoltaics (PV), battery storage, electric vehicle (EV) infrastructure, and smart grid integration. The business is certified to PAS 2060, evidencing its carbon neutral status achieved through comprehensive measurement, targeted reduction initiatives, and the application of high-quality offsets. Its environmental management practices are structured in line with ISO 14001:2015, reinforcing a commitment to minimising environmental impact, improving resource efficiency, reducing waste, and adopting sustainable materials. EvoEnergy supports organisations across a range of energy-intensive industries, including aerospace, manufacturing, data centres, and the public sector by developing bespoke renewable energy systems that enhance energy efficiency and reduce greenhouse gas emissions.

This report follows the five main reporting principals as outlined by ISO 14064-1:

- **Transparency:** Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.
- **Relevance:** Ensure the GHG inventory appropriately reflects the GHG emissions of the company and serves the decision-making needs of users – both internal and external to the company
- **Accuracy:** Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.
- **Consistency:** Use consistent methodologies to allow for meaningful comparisons of emissions over time. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series
- **Completeness:** Account for and report on all GHG emission sources and activities within the chosen inventory boundary. Disclose and justify any specific exclusions.

EvoEnergy has compiled a GHG inventory report for FY24 to better understand their emissions and carbon footprint. The corporate organisational boundaries for the inventory were defined according to the requirements of clause 4.1 of the ISO 14064-

1 standard. The operational approach was used for the consolidation of corporate GHG emissions.

This report presents the findings of this exercise. The report follows the ISO 14064-1 standard entitled Specification with Guidance at the Organisation Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals.

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FINDINGS & RECOMMENDATIONS

2 Findings

2.1 Summary of All Emissions

The emissions by Scope for EvoEnergy under the location-based approach are listed in Table 2.

Scope 3 was the largest source of emissions, contributing 98.27% of overall emissions (6,665.16 tCO_2e). Purchased goods and services was the primary contributor within Scope 3 with emissions at 6,404.43 tCO_2e. Within this category, large electrical items accounted for 51.54% of emissions, making them the largest contributor to purchased goods and services.

The Scope 1 and 2 emissions were 98.28 tCO_2e (1.45%) and 19.05 tCO_2e (0.28%) respectively.

Table 2: Emissions by Scope under the location-based approach

Emissions Source	Emissions (tCO_2e)
Scope 1	98.28
Scope 2	19.05
Scope 3	6,665.16
Total	**6,782.48**

2.2 Scope 1 Emissions

The Scope 1 emissions by source for EvoEnergy are listed in Table 3. Company vehicles were the largest source of Scope 1 emissions, at 94.70 tCO2e (96.36% of Scope 1). Within this emission source, diesel vans accounted for 94.46% of emissions (92.84 tCO2e) and fuel-based cars accounted for 1.89% of emissions (1.86 tCO2e). This can be attributed to diesel vans accounting for majority of company vehicle mileage, 230,521 miles out of 237,375 miles in FY24 (excluding the miles for electric vehicles which is included in Scope 2).

The smallest source of Scope 1 emissions was natural gas consumption at 3.58 tCO2e (3.64% of Scope 1 emissions).

Table 3: Scope 1 Emissions by Source

Emissions Source	Emissions (tCO_2e)
Company owned vans	92.84
Stationary combustion	3.58
Fuel-based company cars	1.86
Total	**98.28**

2.3 Scope 2 Emissions

The Scope 2 market-based and location-based emissions for EvoEnergy are identical and are presented in Table 4. Emissions from electric company vehicles, both owned and leased, have been categorised under Scope 2 on the basis that charging is assumed to occur entirely off-site. This approach, which resulted in 12.66 tCO_2e, was adopted because EvoEnergy was unable to provide data on the exact proportion of on-site versus off-site charging and to ensure consistency with the previous year's footprint, which was verified by MyCarbon.

Electric vehicles contributed the most to EvoEnergy's Scope 2 emissions in FY24 at 12.66 tCO_2e (66.46% of Scope 2 emissions). Purchased electricity contributed the least to EvoEnergy's Scope 2 emissions at 6.39 tCO_2e (33.54% of Scope 2 emissions), with market-based and location-based figures remaining the same due to the absence of evidence supporting a renewable energy tariff for FY24.

Table 4: Scope 2 Emissions by Source

Emissions Source	Emissions (tCO_2e)
Electric vehicles	12.66
Electricity	6.39
Total	**19.05**

2.4 Scope 3 Emissions

The Scope 3 emissions for EvoEnergy are listed by category in Purchased goods and services represented the largest share of EvoEnergy's Scope 3 emissions, amounting to 6,404.43 tCO_2e (94.47%). This was followed by upstream transportation and distribution at 107.70 tCO_2e (1.59%) and employee commuting at 69.71 tCO_2e (1.03%). Waste generated in operations was the smallest contributor within Scope 3, with emissions of 1.43 tCO_2e (0.02%).

For the calculation of end-of-life treatment of sold products, the same weights as purchased/sold products were applied. The disposal methods for EvoEnergy's sold products were not available and therefore, assumptions were made based on industry research into typical end-of-life pathways for the relevant product categories.

Table 5. The sources of emissions included for EvoEnergy were purchased goods and services, capital goods, fuel and energy related activities, upstream transportation & distribution, waste generated in operations, business travel, employee commuting and end of life treatment of sold products.

EvoEnergy does not lease any assets and therefore there were 0.00 tCO_2e emissions associated with upstream leased assets and downstream leased assets. EvoEnergy covered the costs for both inbound and outbound deliveries. As a result, all shipments have been categorised under upstream transportation and distribution, with 0.00 tCO_2e reported for downstream transportation and distribution. The finished goods purchased were sold directly to customers for final use without undergoing any additional processing. As a result, no emissions were attributed to the processing of sold products or use of sold products. Furthermore, there were no emissions associated with franchises or investments, and therefore recorded as 0.00 tCO_2e.

Purchased goods and services represented the largest share of EvoEnergy's Scope 3 emissions, amounting to 6,404.43 tCO_2e (94.47%). This was followed by upstream transportation and distribution at 107.70 tCO_2e (1.59%) and employee commuting at 69.71 tCO_2e (1.03%). Waste generated in operations was the smallest contributor within Scope 3, with emissions of 1.43 tCO_2e (0.02%).

For the calculation of end-of-life treatment of sold products, the same weights as purchased/sold products were applied. The disposal methods for EvoEnergy's sold products were not available and therefore, assumptions were made based on

industry research into typical end-of-life pathways for the relevant product categories.

Table 5: Scope 3 emissions by category

Emissions Category	Emissions (tCO_2e)	% of Total Emissions
Purchased goods and services	6404.43	94.43%
Upstream transportation & distribution	107.70	1.59%
Employee commuting	69.71	1.03%
Capital goods	32.51	0.48%
Fuel and energy related activities	29.72	0.44%
Business travel	12.21	0.18%
End of life treatment of sold products	7.45	0.11%
Waste generated in operations	1.43	0.02%
Total	**6,665.16**	**98.27%**

2.5 FY23 vs FY24 emissions

MyCarbon was engaged in providing independent third-party verification of EvoEnergy's Scope 1, 2 and partial Scope 3 GHG emissions for the period 1 April 2023 – 31 March 2024 (FY23). Table 6 presents the comparison between FY23 and FY24 location-based emissions.

Emissions from purchased goods and services increased significantly, rising from 0.19 tCO_2e in FY23 to 6,404.43 tCO_2e in FY24. This change is primarily due to the scope of available data. In FY23, only limited information relating to water and paper products was included, whereas in FY24 the complete purchase ledger was made available, including all finished goods purchased during the year and the services availed. A further notable increase was observed in the capital goods category, where emissions rose from 3.61 tCO_2e in FY23 to 32.51 tCO_2e in FY24. The FY23 inventory reflected only computing equipment purchases, while the FY24 data set

also incorporated plant and machinery, office equipment, and motor vehicles, leading to a more comprehensive representation of emissions in this category.

Table 6: FY23 vs FY24 emissions

Emissions Category	FY23 Emissions (tCO_2e)	FY24 Emissions (tCO_2e)	% Change
Purchased goods and services	0.19	6404.43	3,370,653.03%
Capital goods	3.61	32.51	800.55%
Stationary combustion	2.62	3.58	36.64%
Business travel	9.39	12.21	30.03%
Company owned vans	83.56	92.84	11.11%
Upstream transportation & distribution	96.94	107.7	11.10%
Fuel and energy related activities	26.04	29.72	14.14%
Electricity	5.89	6.39	8.49%
End of life treatment of sold products	0.00	7.45	n.a.
Electric -vehicles charging	13.47	12.66	-6.01%
Employee commuting	83.61	69.71	-16.62%
Waste generated in operations	2.11	1.43	-32.23%
Fuel-based company cars	7.95	1.86	-76.60%
Total	**327.87**	**6,767.66**	**1964.13%**

2.6 Scope 3 Analysis

2.6.1 Purchased Goods and Services

The purchased goods and services by top ten sources are listed in Table 7 and this represented 94.53% of total emissions from this category. Within this category, the largest source of emissions was large electrical items (including but not limited to PV modules, photovoltaic distribution boards (PVDB), EV charge points, and transformers) at 3,300.85 tCO_2e (48.76%). This is due to large electrical items representing the highest purchase volume at 1,010.36 tonnes, combined with their relatively high emission factor. The second-largest contributor was metal components and parts (including but not limited to cables, mounting frames, earthing systems, and associated tools) with emissions of 2,881.15 tCO_2e (42.56%). Small electrical equipment (inverters and optimisers) followed, contributing 130.33 tCO_2e (1.93%). The smallest contributor within the top ten was other professional services (including but not limited to cleaning services and annual renewals), which accounted for 2.40 tCO_2e (0.04%).

Table 7: Purchased goods and services emissions – top 10 categories

Emissions Category	Emissions (tCO_2e)	% of total emissions
Large electrical items	3,300.85	48.76%
Metal components and materials	2,881.15	42.56%
Small electrical equipment	130.33	1.93%
Li-ion batteries	49.20	0.73%
Restaurants, cafes and the like	13.64	0.20%
Monitoring equipment	7.86	0.12%
Other food products	5.59	0.08%
Accounting, consulting and tax services	4.80	0.07%
Paper and paper products	3.66	0.05%
Other professional, scientific and technical services	2.40	0.04%
Total	**6,399.47**	**94.53%**

3 Recommendations

EvoEnergy has continued their sustainability journey, through conducting a GHG inventory report for FY24. Following the completion of this report MyCarbon has made the following recommendations, listed in Table 8.

In addition to the comprehensive GHG inventory report outlined and subsequent carbon neutrality certification piece, MyCarbon remains committed to supporting EvoEnergy in their sustainability journey. Future suggestions include a variety of services that EvoEnergy can easily incorporate into their sustainability efforts. These include:

Table 8: Key recommendations and justifications

Recommendation	Description & Justification
Greenhouse Gas Report	Continuing to report annually on greenhouse gas emissions will hold EvoEnergy accountable and monitor progress regarding their sustainability goals.
Net Zero Strategy	Developing a Net-Zero Strategy would enable EvoEnergy to identify the opportunities to reduce their carbon footprint across their operations.
Data Governance	Improvements in data quality will lead to a more accurate representation of EvoEnergy's emissions profile.
Decarbonisation Projects	Acquiring REGO certificate at the EvoEnergy office will reduce the Scope 2 emissions

Data Governance

The data provided was generally well-organised and in a usable format. In particular, the information supplied for the key category of purchased goods and services was comprehensive, covering all relevant purchases for FY24. However, improvements in consistency across data categories would support greater accuracy in the emissions inventory. For example, within business travel (Category 6), mileage data could be extracted from the dataset to enable activity-based calculations for some modes, although train travel continued to be calculated using spend-based data. In addition, a clearer distinction between on-site and off-site EV charging for company

vehicles would improve the allocation of Scope 1 and Scope 2 emissions. Addressing these points would enhance the accuracy and robustness of EvoEnergy's overall emissions profile. It is also recommended that EvoEnergy undertake a recalculation of its baseline for FY23 (1 April 2023 – 31 March 2024), incorporating complete Scope 1, Scope 2, and Scope 3 data. Establishing a well-defined baseline year would be a prerequisite for any future submission to the Science Based Targets initiative (SBTi) should EvoEnergy decide or be required to pursue this pathway.

Net-Zero Strategy

Having identified the sources and hotspots for their emissions, MyCarbon recommends conducting a net-zero strategy for EvoEnergy. Using this current GHG inventory as a baseline, MyCarbon can model the required reductions for EvoEnergy to reach Net-Zero in the coming decades and ensure the business remains future-proof. This will include the mapping of various emissions reduction methods, specifically focusing on its purchased goods and services emissions, and their impact on EvoEnergy's future emissions.

Assistance in Purchasing REGO's

Renewable Energy Guarantee of Origin (REGO) certificates offer proof of electricity generation from renewable sources, ensuring transparency and credibility in renewable energy procurement. By investing in REGO certificates, EvoEnergy can strengthen its dedication to sustainability while simultaneously reducing emissions linked to purchased electricity.

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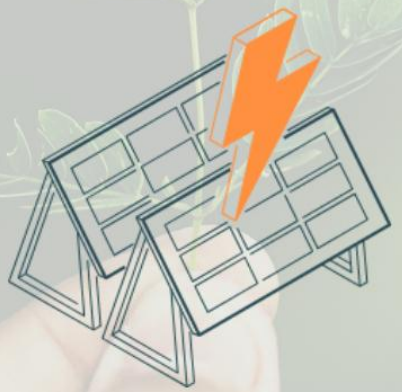
METHODOLOGY



4 Methodology

4.1 Identified Emissions and Exclusions

The emissions that were determined to be relevant within the organizational boundary are listed in Table 9.

Table 9: Emissions sources included in the organisational boundary.

Scope	Category		Emission Source	Included
1			Stationary combustion	Y
			Company vehicles	Y
			Fugitive emissions	N
			Refrigerants	N
2			Electricity usage	Y
			Heating	N
			Cooling	N
3	1	Upstream	Purchased goods and services	Y
	2		Capital goods	Y
	3		Fuel and energy related activities	Y
	4		Upstream transportation and distribution	Y
	5		Waste generated in operations	Y
	6		Business travel	Y
	7		Employee commuting	Y
	8		Upstream leased assets	N
3	9	Downstream	Downstream transportation and distribution	N
	10		Processing of sold products	N

	11		Use of sold products	N
	12		End of life treatment of sold products	Y
	13		Downstream leased assets	N
	14		Franchises	N
	15		Investments	N

4.2 Organisational Boundaries

The GHG Protocol Corporate Standard outlines two approaches for consolidating GHG data—the equity share approach and the control approach—through organizational boundaries. These are boundaries that determine the operations owned or controlled by the reporting company, depending on the consolidation approach taken. In some cases, it may be possible to apply these approaches directly to emissions/removals associated with sequestered atmospheric carbon. EvoEnergy has chosen operational approach.

The GHG inventory report covers all Scope 1, 2, and 3 emissions for EvoEnergy. Details of each building included within the organisational boundary of this report are listed below:

27 Eldon Business Park,
Attenborough, Nottingham,
NG9 6DZ,
United Kingdom

4.3 Emission Factors

The methodologies used to collect and assess the emissions data varied throughout the inventory. The primary methodology used was multiplying GHG activity data by appropriate GHG emission factors. All methodologies were selected based on their ability to provide accurate and consistent results. The use of activity data and emission factors was feasible due to the availability of both accurate activity data and emission factors from reputable organisations.

MyCarbon uses the latest figures from DEFRA and peer reviewed literature for all common emission factors listed in Table 10 in the appendix.

4.4 Calculating Emissions from Electricity Consumption

There are two methods for calculating emissions from electricity consumption: the location-based and market-based methods. The location-based method is used to

calculate emissions based on the emissions intensity of the local grid area where the electricity usage occurs. The market-based method calculates emissions on the basis that the company has chosen to purchase renewable electricity.

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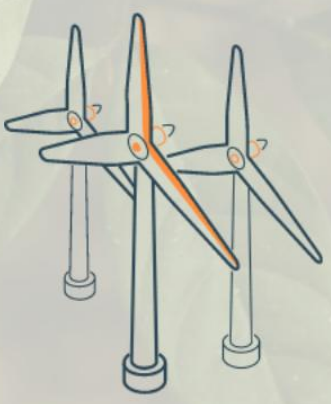
APPENDICES



5 Appendices

5.1 References

[1] Department for Energy Security and Net Zero (2022), "Greenhouse gas reporting: conversion factors 2022," 2 June 2022. [Online]. Available: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022.

[2] Department for Energy Security and Net Zero (2024) Greenhouse gas reporting: conversion factors 2024. Available at: https://www.gov.uk/government/publications/greenhouse-gas-reportingconversion-

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[3] Department for Environment, Food & Rural Affairs (DEFRA) (2013, updated 2025). Waste electrical and electronic equipment (WEEE): producer responsibilities. Available at:

https://www.gov.uk/guidance/regulations-waste-electrical-and-electronic-equipment

5.2 Emission Factors

Table 10: Emissions factors used in this assessment

Category	Emission Factors	Units	Reference
Natural gas	2.05	$kgCO_2e$ /cubic metres	DEFRA, 2024
Vans - Average - Diesel	0.40	$kgCO_2e$ /miles	DEFRA, 2024
Cars - Average car - Diesel	0.27	$kgCO_2e$ /miles	DEFRA, 2024
Cars - Average car - Petrol	0.26	$kgCO_2e$ /miles	DEFRA, 2024
Electricity generated Electricity: UK	0.21	$kgCO_2e$ /kWh	DEFRA, 2024
Cars - Average car - Battery Electric Vehicle	0.08	$kgCO_2e$ /miles	DEFRA, 2024
Metals - Primary material production	3815.78	$kgCO_2e$ /tonnes	DEFRA, 2024
Electrical items - large - Primary material production	3267.00	$kgCO_2e$ /tonnes	DEFRA, 2024
Electrical items - Li ion - Primary material production	6308.00	$kgCO_2e$ /tonnes	DEFRA, 2024
Electrical items - small - Primary material production	5647.95	$kgCO_2e$ /tonnes	DEFRA, 2024
Paper and paper products	0.73	$kgCO_2e$ /British Pound	DEFRA, 2022
Average construction - Primary material production	74.89	$kgCO_2e$ /tonnes	DEFRA, 2024

Electrical items - IT - Primary material production	24865.48	$kgCO_2e$ /tonnes	DEFRA, 2024
Accounting, bookkeeping and auditing services; tax consulting services	0.06	$kgCO_2e$ /British Pound	DEFRA, 2022
Other professional, scientific and technical services	0.14	$kgCO_2e$ /British Pound	DEFRA, 2022
Computer, electronic and optical products	0.46	$kgCO_2e$ /British Pound	DEFRA, 2022
Paper and board: paper - Primary material production	1339.32	$kgCO_2e$ /tonnes	DEFRA, 2024
Fabricated metal products, excl. machinery and equipment and weapons & ammunition - 25.1-3/25.5-9	0.63	$kgCO_2e$ /British Pound	DEFRA, 2022
11.1.1 Restaurants, cafes and the like	0.76	$kgCO_2e$ /British Pound	DEFRA, 2022
Electrical equipment	0.85	$kgCO_2e$ /British Pound	DEFRA, 2022
Other food products	0.72	$kgCO_2e$ /British Pound	DEFRA, 2022
Textiles	0.71	$kgCO_2e$ /British Pound	DEFRA, 2022
Water supply	0.15	$kgCO_2e$ /cubic metres	DEFRA, 2024
9.5.4 Stationery and drawing materials	0.55	$kgCO_2e$ /British Pound	DEFRA, 2022
Other manufactured goods	0.64	$kgCO_2e$ /British Pound	DEFRA, 2022
Printing and recording services	0.38	$kgCO_2e$ /British Pound	DEFRA, 2022

Rubber and plastic products	0.70	kgCO_2e /British Pound	DEFRA, 2022
Soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	0.76	kgCO_2e /British Pound	DEFRA, 2022
Alcoholic beverages	0.84	kgCO_2e /British Pound	DEFRA, 2022
Furniture	0.47	kgCO_2e /British Pound	DEFRA, 2022
Computer programming, consultancy and related services	0.11	kgCO_2e /British Pound	DEFRA, 2022
7.1.1 Motor cars	0.37	kgCO_2e /British Pound	DEFRA, 2022
5.5.1 Major tools and equipment	0.22	kgCO_2e /British Pound	DEFRA, 2022
WTT - Natural gas	0.34	kgCO_2e /cubic metres	DEFRA, 2024
T&D - UK electricity	0.02	kgCO_2e /kWh	DEFRA, 2024
WTT - UK electricity (generation)	0.05	kgCO_2e /kWh	DEFRA, 2024
WTT - UK electricity (T&D)	0.00	kgCO_2e /kWh	DEFRA, 2024
WTT Cars - Average car - Battery Electric Vehicle	0.02	kgCO_2e /miles	DEFRA, 2024
WTT Vans - Average - Diesel	0.10	kgCO_2e /miles	DEFRA, 2024
WTT Cars - Average car - Diesel	0.07	kgCO_2e /miles	DEFRA, 2024

WTT Cars - Average car - Petrol	0.07	$kgCO_2e$ /miles	DEFRA, 2024
UK electricity T&D - Cars - Average car - Battery Electric Vehicle	0.01	$kgCO_2e$ /miles	DEFRA, 2024
HGV - Articulated (>3.5-35t) - Diesel - Average Laden	0.11	$kgCO_2e$ /tonne.km	DEFRA, 2024
Vans - Average - Unknown	0.62	$kgCO_2e$ /tonne.km	DEFRA, 2024
HGV - Rigid (>7.5-17 tonnes) - Diesel - Average Laden	0.38	$kgCO_2e$ /tonne.km	DEFRA, 2024
WTT HGV - Articulated (>3.5-35t) - Diesel - Average Laden	0.03	$kgCO_2e$ /tonne.km	DEFRA, 2024
WTT Vans - Average - Unknown	0.15	$kgCO_2e$ /tonne.km	DEFRA, 2024
WTT HGV - Rigid (>7.5-17 tonnes) - Diesel - Average Laden	0.09	$kgCO_2e$ /tonne.km	DEFRA, 2024
Water treatment	0.19	$kgCO_2e$ /cubic metres	DEFRA, 2024
Waste disposal - Organic: food and drink waste - Combustion	6.41	$kgCO_2e$ /tonnes	DEFRA, 2024
Waste disposal - Paper and board: board - Closed-loop	6.41	$kgCO_2e$ /tonnes	DEFRA, 2024
Cars - Average car - Unknown	0.27	$kgCO_2e$ /miles	DEFRA, 2024
WTT Cars - Average car - Unknown	0.07	$kgCO_2e$ /miles	DEFRA, 2024
Rail transport services	0.43	$kgCO_2e$ /British Pound	DEFRA, 2022

Cars - Small car - Petrol	0.23	$kgCO_2e$ /miles	DEFRA, 2024
Cars - Small car - Diesel	0.23	$kgCO_2e$ /miles	DEFRA, 2024
Cars - Average car - Plug-in Hybrid Electric Vehicle	0.17	$kgCO_2e$ /miles	DEFRA, 2024
Local bus (not London)	0.13	$kgCO_2e$ /passenger.km	DEFRA, 2024
Cycle	0.00	$kgCO_2e$ /miles	DEFRA, 2024
Cars - Medium car - Petrol	0.29	$kgCO_2e$ /miles	DEFRA, 2024
Cars - Medium car - Diesel	0.27	$kgCO_2e$ /miles	DEFRA, 2024
WTT Cars - Small car - Petrol	0.06	$kgCO_2e$ /miles	DEFRA, 2024
WTT Cars - Small car - Diesel	0.05	$kgCO_2e$ /miles	DEFRA, 2024
WTT Cars - Average car - Plug-in Hybrid Electric Vehicle	0.05	$kgCO_2e$ /miles	DEFRA, 2024
WTT Local bus (not London)	0.03	$kgCO_2e$ /passenger.km	DEFRA, 2024
WTT Cars - Medium car - Petrol	0.08	$kgCO_2e$ /miles	DEFRA, 2024
WTT Cars - Medium car - Diesel	0.07	$kgCO_2e$ /miles	DEFRA, 2024
Homeworking (office equipment + heating)	0.33	$kgCO_2e$ /per FTE Working Hour	DEFRA, 2024

Waste disposal - WEEE - large - Open-loop 6.41	$kgCO_2e$ /tonnes	DEFRA, 2024
Waste disposal - Metals - Closed-loop 0.98	$kgCO_2e$ /tonnes	DEFRA, 2024
Waste disposal - WEEE - small - Open-loop 6.41	$kgCO_2e$ /tonnes	DEFRA, 2024
Waste disposal - Batteries - Open-loop 6.41	$kgCO_2e$ /tonnes	DEFRA, 2024
Waste disposal - Paper and board: paper - Closed-loop 6.41	$kgCO_2e$ /tonnes	DEFRA, 2024
Waste disposal - WEEE - mixed - Open-loop 6.41	$kgCO_2e$ /tonnes	DEFRA, 2024

5.3 Context

5.3.1 What is the importance of measuring greenhouse gases (GHGs)?

GHG emissions are contributing to global warming and climate change, which have been recognised as a key sustainable development issue. Many governments through local and international efforts are taking steps to reduce GHG emissions through national policies that include the introduction of emissions trading programs, voluntary programs, carbon or energy taxes, and regulations and standards on energy efficiency and emissions. As a result, companies must be able to understand and manage their GHG risks if they are to ensure long-term success in a competitive business environment, and to be prepared for future national or regional climate policies.

Quantification of GHGs emitted by a business or organisation's activities in the form of a carbon footprint is an important tool used by stakeholders to recognise their impact and act, often through offsetting activities.

Offsetting is a particular method employed to reduce, remove, or prevent the release of GHG emissions into the atmosphere, which can be done through the purchase and retirement of carbon credits. Due to the tight control on carbon credits, retirement of a credit is the only method one can do to offset their carbon footprint. For example, if a business produced 100 tonnes of CO_2, they would need to purchase and retire 100 carbon credits to become carbon neutral.

5.3.2 Reporting standards

When performing a GHG inventory, these assessments should align with one of two recognised standards for accounting and reporting corporate GHG emissions. The most well-known is the "Greenhouse Gas Protocol – Corporate Accounting and Reporting Standard" (GHG Protocol, 2011) developed in a partnership of the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI). The International Organization for Standardization (ISO) also produced the ISO14064 specification series, detailing specification and guidance for the organisation and project levels, as well as for the validation and verification of emissions.

Data supplied by clients is used in GHG assessments, which is quantified into GHG emission estimates by applying relevant and up-to-date emission factor(s) from reputable sources, like DEFRA. An emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. Quality and accuracy of emission factors can vary between government publications and scientific research journals, therefore it is best practice to apply emission factors only from reputable sources, such as DEFRA.

GHG assessments quantify all six Kyoto Protocol GHGs, where applicable, and are measured in terms of tonnes carbon dioxide (CO_2) equivalence, or tCO_2e, where equivalence means having the same warming effect as CO_2 over a period of 100 years. The six Kyoto Protocol gases are CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF_6) and perfluorocarbons (PFCs). The global warming potential (GWP) of each GHG is listed in Table 11.

Table 11: GHGs listed in the Kyoto Protocol and their Global Warming Potential (GWP)

Greenhouse Gas	Chemical Formula	GWP (CO_2e)
Carbon dioxide	CO_2	1.0
Methane	CH_4	27.0
Nitrous oxide	N_2O	273.0
Hydro fluorocarbons	HFCs	Depends on gas
Sulphur hexafluoride	SF_6	24,500
Perfluorinated compounds	PFCs	Depends on gas

5.4 Emissions Scopes

Emission sources can be broken down into three distinct categories called Scopes.

Scope 1

Scope 1 accounts for the direct GHG emissions occurring from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.: emissions from chemical production in owned or controlled process equipment.

Scope 2

Scope 2 accounts for GHG emissions from the generation of purchased electricity, heat or steam consumed by the company. Purchased electricity, heat or steam is defined as electricity, heat or steam that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity, heat or steam is generated.

Scope 3

Scope 3 is an optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company. Some examples of scope 3 activities are extraction and production of purchased materials, transportation of purchased fuels and use of sold products and services.

The GHG Protocol describes the quantification of Scope 1 and 2 as mandatory, whereas Scope 3 emissions are considered optional. Depending on the nature/remit of an organisation, Scope 3 activities can contribute a significant proportion of overall emissions, and therefore to gain a proper understanding of an organisation's GHG emissions it is advisable to include all relevant sources.

5.5 Client Contact Details

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