

Carbon Footprint

Beagle Orthopaedic

April 2023 - March 2024

Scopes 1, 2 & elements of 3

Calculated & Verified By





About this report

This report establishes the Greenhouse Gas (GHGs) emissions produced through the operations of Beagle Orthopaedic's head office.

All calculations were in accordance with the UK Government's Environmental reporting guidelines and The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard.

Emissions within Scope 1, 2 and Scope 3 (five categories) were reported on during the period 1st April 2023 to 31st March 2024.





Introduction

This is Beagle Orthopaedic's first year of reporting on their emissions. In this report, Scope 1, Scope 2, and selected Scope 3 emissions have been assessed as part of their commitment to understanding and reducing their carbon footprint.

The data was provided by Beagle Orthopaedic and the results have been independently verified by 5D Net Zero.



Reporting Boundary

Time Boundary

1st April 2023 - 31st March 2024.

Organisational Boundary

This footprint's organisational boundary includes operations associated with Beagle Orthopaedic's two sites in Blackburn, UK, and their 76 employees.

Reporting Boundary

This report includes a full assessment of Scope 1 and 2 emissions, and a partial assessment of Scope 3 (five categories), consistent with the minimum PPN 06/21 requirements.

The reporting boundary has been designed to capture all relevant emission categories, while excluding those not applicable to Beagle Orthopaedic.

Scope of Reporting

GHG Emission Inventory

Scope	Category	Applicable	Notes
Scope 1	Stationary Combustion Fuels	Yes	Combi boiler for heating
	Fugitive Emissions	Yes	No Leaks from airconditioning reported
	Mobile Combustion - Vehicles	Yes	Two company vehicles
Scope 2	Electricity Use	Yes	Non-renewable Electricity Tariffs
	Purchased Heat/Steam/Cooling	No	None to report
Scope 3	Upstream Transportation & Distribution	Yes	Flights, HGV and Van transportation
	Water*	Yes	Supply and Treatment of mains water
	Waste generated in Offices	Yes	General and cardboard/paper waste streams
	Business Travel	Yes	Car and flights recorded
	Employee Commuting	Yes	Estimation based off distance and vehicle type
	*Home Working	No	Estimated based off average days WFH
	Downstream Distribution	Yes	Goods delivered to clients

*sub categories have been defined for more granular analysis

Methodology

GHG Protocol - The Three Scope

Beagle Orthopaedic's operational carbon footprint was calculated in line with the Greenhouse Gas (GHG) Protocol Corporate Reporting Standard, the most widely recognised methodology for GHG accounting. This protocol provides a consistent framework for measuring and reporting emissions, enabling businesses to identify, manage, and reduce their environmental impact.

The GHG Protocol categorises operational emissions into three scopes:

Scope 1: Direct Emissions

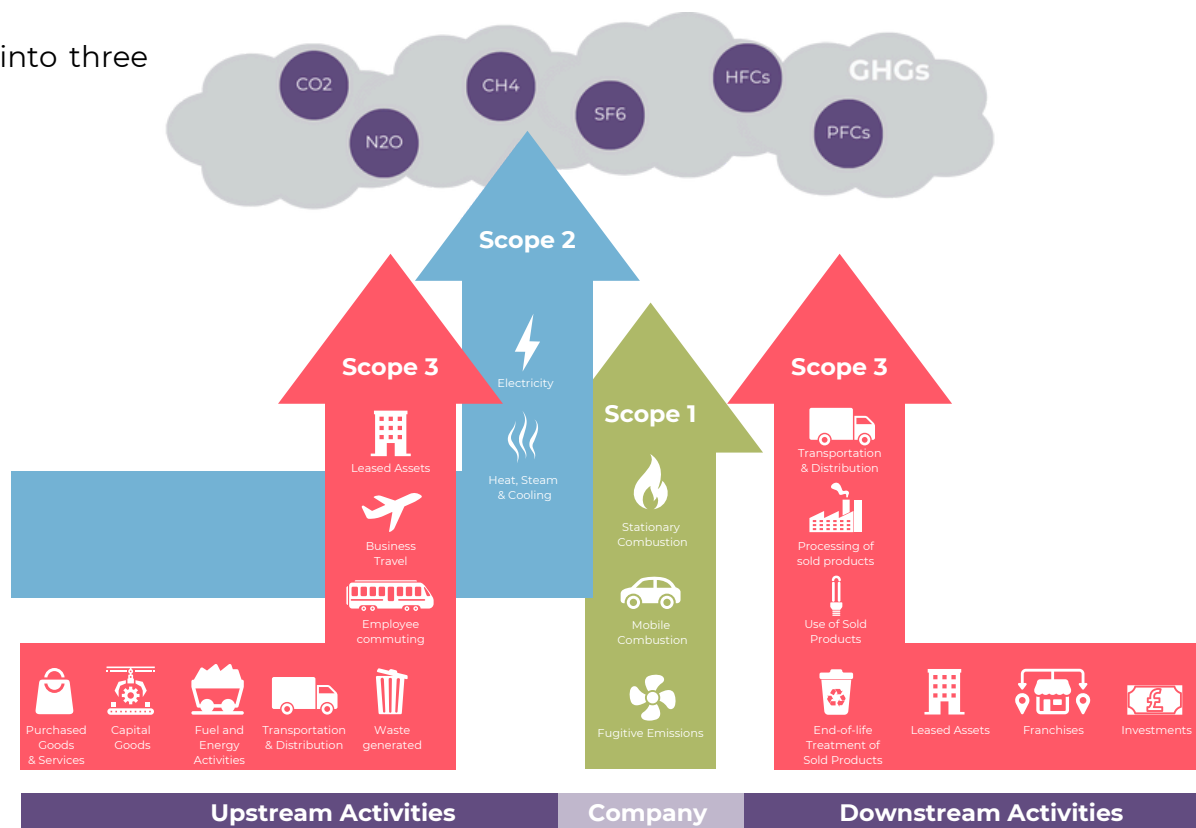
These are emissions from sources that are directly controlled by your organisation.
e.g On-site Fuel Combustion

Scope 2: Indirect Emissions

These are emissions from the generation of purchased energy consumed by your organisation. *E.g Electricity Usage*

Scope 3: Indirect Value Chain Emissions

Scope 3 include all other indirect emissions that are created along a business's value chain. E.g Business Travel

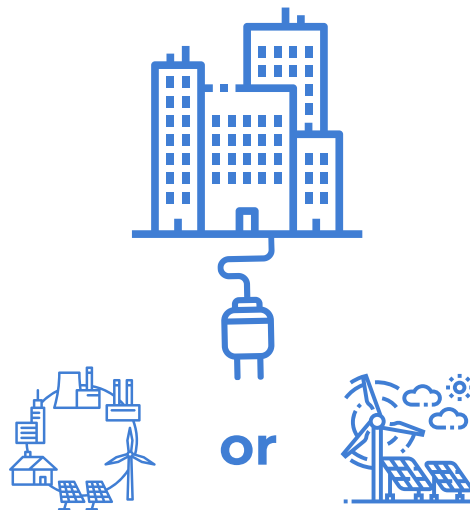


Beagle Orthopaedic calculated its carbon footprint using the activity-based method, which relies on specific activity data such as fuel usage and energy consumption. This approach minimises the use of generalised assumptions or averages, thereby increasing the accuracy of the results. The calculation used the UK Government DEFRA's 2023 greenhouse gas conversion factors.

Methodology

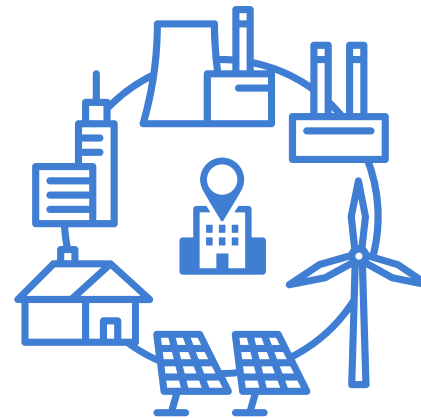
Market-Based and Location-Based Emissions

Understanding and reporting both market-based and location-based emissions are critical for creating a complete and accurate picture of an organisation's carbon footprint. While they offer different perspectives, the two methodologies complement each other by addressing different aspects of energy-related emissions.



Market-Based

Reflection of emissions based on specific energy procurement choices i.e. the fuel mix provided by the electricity tariff supplier.



Location-Based

Reflection of energy used at site, from the solar on your roof to the full energy mix from the UK Grid.

To be transparent, and align with the GHG Protocol Corporate Accounting and Reporting Standard, both Market- and Location-based emissions must be reported on.



Assumptions

Electricity

Market-based emission factors were taken from the supplier's electricity mix. All figures reflect CO₂ only, which may result in an underestimation of emissions as other greenhouse gases (GHGs) are not included.

Upstream Transportation & Distribution

Product weight and travel distances were estimated using mapping software, along with average unit weights and annual delivery numbers. An average van with unknown fuel type was assumed unless specific vehicle details were provided.

Waste Disposal

Waste weights were estimated based on bin sizes, assuming bins were at full capacity when collected.

Business Travel

Car travel data was taken from mileage records. Flight distances were calculated on the basis of direct travel.

Employee Commuting

Estimates were based on car type, commuting distance to the office, and the average number of working days per year. Data from 36 employee responses to a commuting questionnaire were extrapolated to represent a total of 76 employees.

Home Working

Emissions were estimated using the average number of hours worked from home per employee.

Downstream Distribution

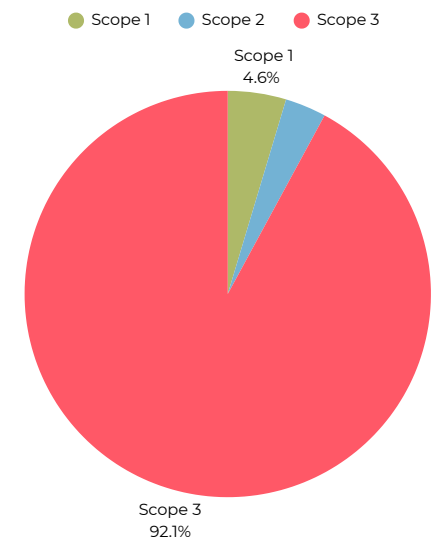
Distances were estimated using mapping software. An average van with unknown fuel type was assumed unless further vehicle information was available.

2024 Carbon Footprint

Market-Based Emissions*

Beagle Orthopaedic's total carbon footprint for Scopes 1, 2 and (5 categories of) Scope 3: **238.08 tCO₂e**.

	Activity	tCO ₂ e
Scope 1	Stationary Combustion (Fuel)	0.22
	Refrigerants & Other	0
	Mobile Combustion	10.81
Scope 2	UK Electricity	7.79
Scope 3	Upstream Distribution	119.70
	Water	0.37
	Waste	1.06
	Business Travel	27.06
	Commuter Miles	64.78
	Home Working	0.25
	Downstream Distribution	6.03
	Total	238.08



No other emission activities have been identified from Beagle Orthopaedic 's operations in Scope 1 & 2

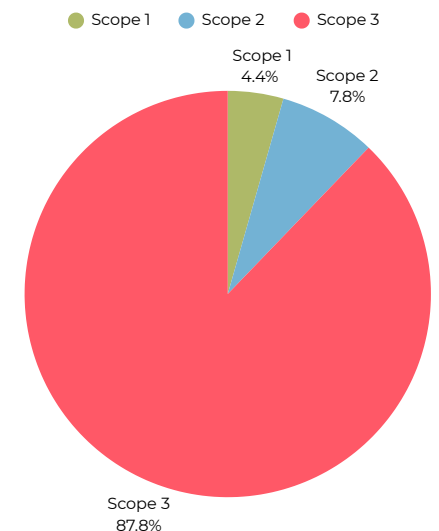
**Reflection of emissions based on specific energy procurement choices – i.e. the fuel mix provided by the electricity tariff supplier.*

2024 Carbon Footprint

Location-Based Emissions*

Beagle Orthopaedic's total carbon footprint for Scopes 1, 2 and (5 categories of) Scope 3: **249.70 tCO₂e**.

	Activity	tCO ₂ e
Scope 1	Stationary Combustion (Fuel)	0.22
	Refrigerants & Other	10.81
Scope 2	UK Electricity	19.41
Scope 3	Upstream Distribution	119.70
	Water	0.37
	Waste	1.06
	Business Travel	27.06
	Commuter Miles	64.78
	Home Working	0.25
	Downstream Distribution	6.03
	Total	249.70

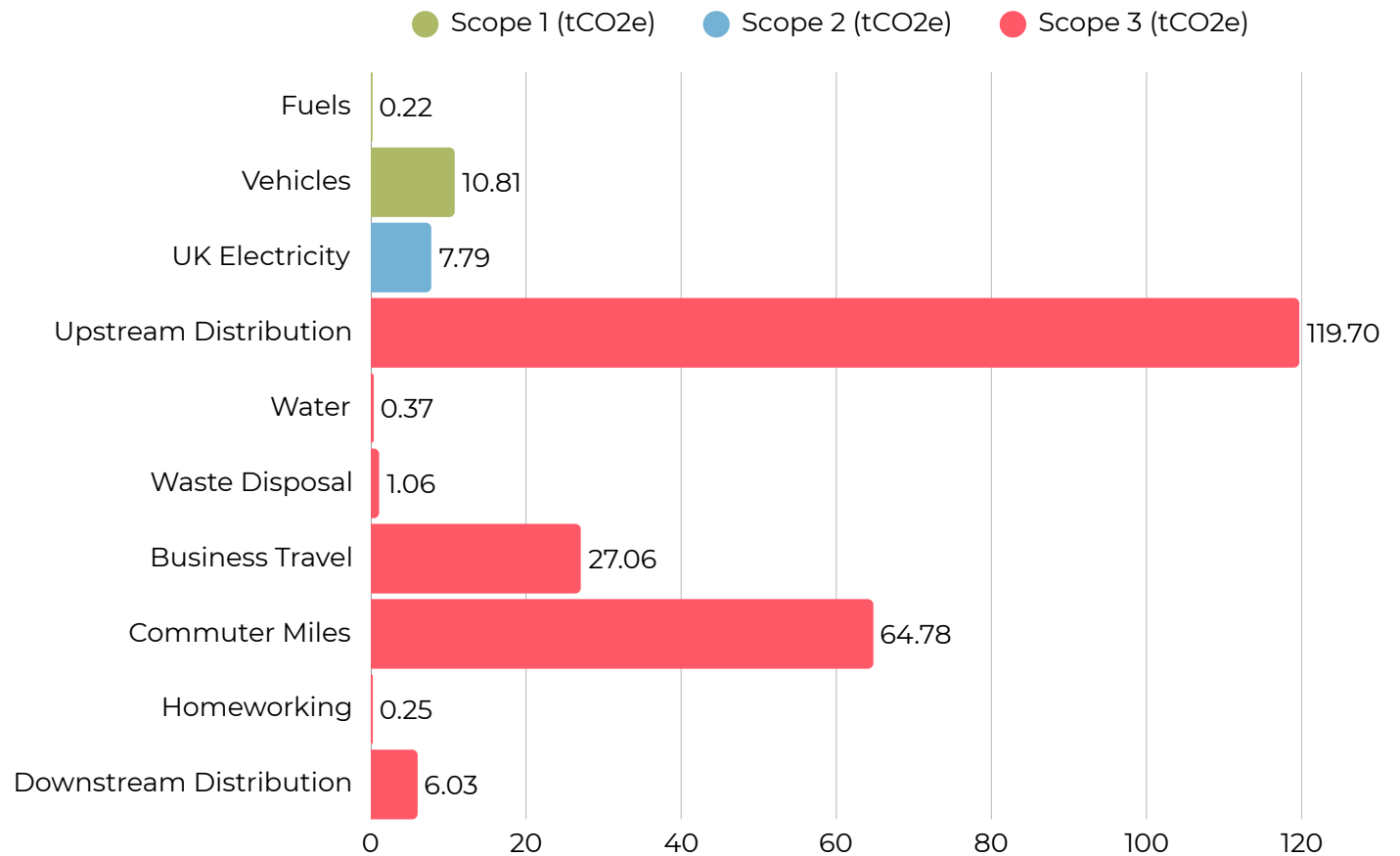


No other emission activities have been identified from Beagle Orthopaedic 's operations in Scope 1 & 2

**Reflection of energy used at site, from the solar on your roof to the full energy mix from the UK Grid.*

Analysis

Below is a breakdown of emissions by category, based on market-based reporting.



Scope 3 is the largest contributor to emissions, with upstream distribution identified as the biggest hotspot, accounting for 50% of the total reported footprint.



Carbon intensity

Carbon intensity refers to the measurement of carbon dioxide and other greenhouse gases (tCO₂e) relative to the operational scale of an organisation, in this case calculated as tCO₂e emissions per employee.

Beagle Orthopaedic's carbon intensity for 2023/24, based on market-based emissions, was:

3.13 tCO₂e per employee

This calculation is based on 76 employees reported



Scope 1

Scope 1 consists of all emissions from sources owned or controlled by the business. For Beagle Orthopaedic this includes emissions from fuels, vehicles and fugitive emissions.

Fuels

Both sites use Biomethane for heating purposes, resulting in 0.22 tCO₂e emissions.

Refrigerants & Other

Beagle Orthopaedic reported no leakages in their air conditioning units, which resulted in 0 tCO₂e.

Company-owned vehicles

Beagle Orthopaedic have two company-owned passenger vehicles, which resulted in 10.81 tCO₂e

Results

Total Scope 1 emissions: **11.04 tCO₂e**



Scope 2

Scope 2 consists of emissions that are created through the purchasing of energy from another business.

UK electricity - Market-Based Emissions

Beagle Orthopaedic's electricity tariffs aren't renewable, but both suppliers are less reliant on fossil fuels than the UK average. That means their market-based emissions, which reflect their procurement choices, are lower, at 7.79 tCO₂e.

UK electricity - Location-Based Emissions

Their location-based emissions are higher, at 19.41 tCO₂e, as this figure reflects the carbon emissions of the electricity actually being used on site, based on the UK's average grid mix in 2023.

Results

Total Scope 2 market-based emissions: **7.79 tCO₂e**



Scope 3

Scope 3 consists of emissions that are created along a business' value chain.

Upstream Transportation & Distribution

Beagle Orthopaedic reported 119.70 tCO₂e from goods being delivered to site by 3rd party distributors. Flight transportation made up 95% of reported emissions (113.94 tCO₂e).

Waste Disposal

Beagle Orthopaedic's waste emissions total 1.06 tCO₂e. Unit 1 reported mixed municipal waste and paper & cardboard (0.85 tCO₂e), while Unit 21 reported mixed municipal waste only (0.22 tCO₂e). The supplier has a zero-to-landfill policy.

Business travel

Most of Beagle Orthopaedic's business travel emissions came from car use, totalling 37.2 tCO₂e. One flight was reported, resulting in 0.35 tCO₂e. In total, business travel emissions came to 37.87 tCO₂e.



Scope 3 cont.

Employee Commuting

Beagle Orthopaedic's commuter survey had a 47% response rate. Most respondents drive, with 8% using active travel. Extrapolated across all staff, commuting emissions are estimated at 64.78 tCO₂e, or 0.89 tCO₂e per employee.

Home Working

It is estimated that 0.25 tCO₂e were emitted from home working, taking into account energy use from computer equipment and heating.

Downstream distribution

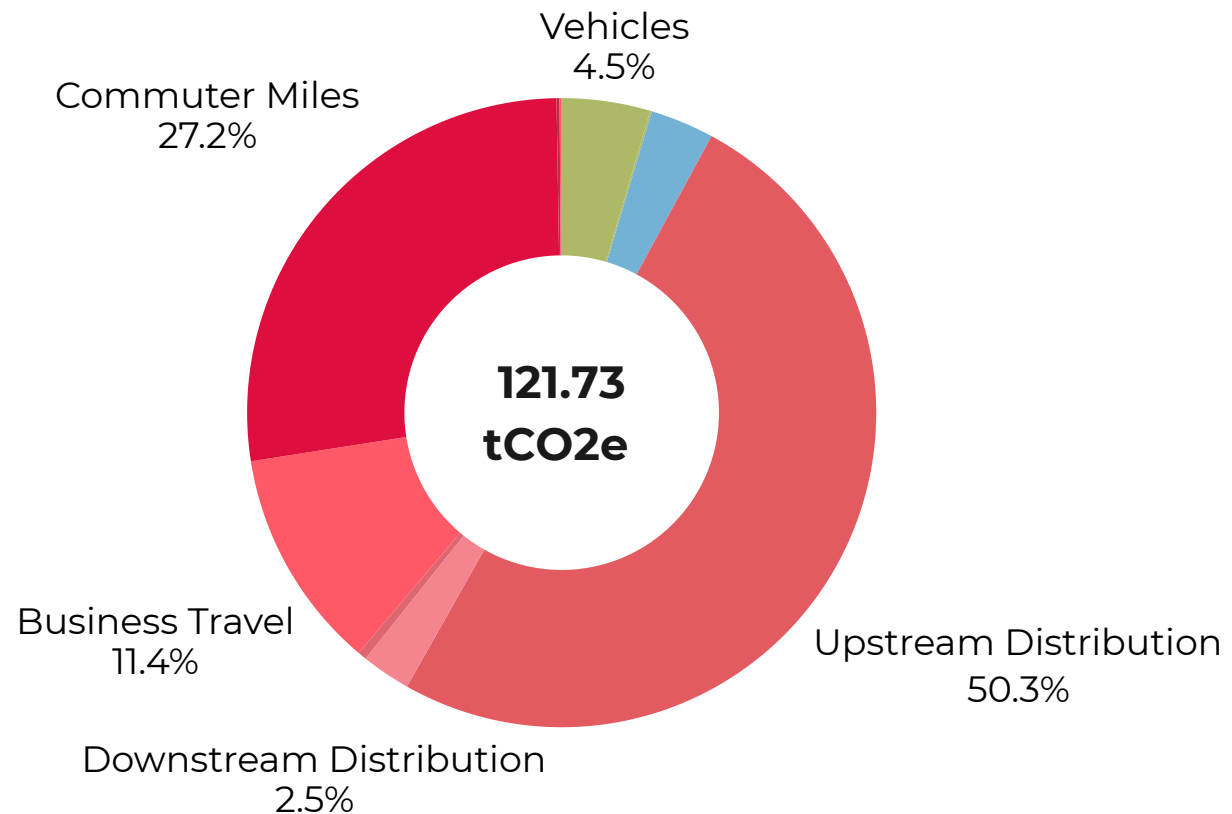
Beagle Orthopaedic reported 6.03 tCO₂e from downstream distribution. All products are delivered within the UK, including Northern Ireland, Guernsey, Jersey, and the Isle of Man, and it's assumed all transport was by van.

Results

Total Scope 3 emissions: **219.26 tCO₂e**

Conclusion

Beagle Orthopaedic has reported a total of **238.08 tCO₂e** of GHG market-based emissions during their reporting period (April 2023 - March 2024).



The majority of Beagle Orthopaedic's emissions come from Scope 3, in particular upstream distribution, business travel and commuter miles.



Recommendations

Beagle Orthopaedic's next step is to set Net Zero targets and develop a Carbon Reduction Plan focused on key emission sources.

Recommended priority areas for emissions reductions:

Scope 1 (Heating): Emissions from heating are low (0.22 tCO₂e), but energy efficiency improvements and behavioural changes should be explored.

Scope 2 (Electricity Use): Switching to 100% renewable tariffs would cut market-based emissions to zero. Behavioural and efficiency improvements are also recommended.

Scope 3 (Supply Chain Emissions): Upstream distribution, commuting, and business travel are the largest contributors and should be the main focus for short-term reduction initiatives.

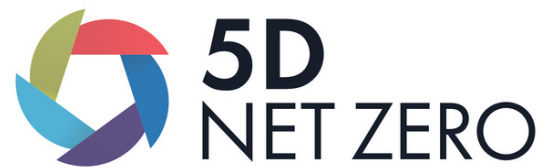
Beagle Orthopaedic should also expand their Scope 3 reporting to include categories such as Purchased Goods & Services and Capital Goods, to gain a more complete and accurate picture of their carbon footprint.

To support their long-term net zero ambitions, Beagle Orthopaedic should review and update their Operational Carbon Footprint and Carbon Reduction Plan annually, using new data and insights to guide progress.



Glossary of terms

Baseline	A year of accounted GHG emissions against which an organisation's emissions can be tracked.
Carbon Reduction Plan (CRP)	A CRP sets out an organisation's commitments to reducing emissions and achieving net zero.
CO₂e	Carbon Dioxide and Equivalent Greenhouse Gases.
Direct GHG Emissions	Emissions that are from sources controlled or owned by the reporting organisation.
Emissions	The release of Greenhouse Gases into the atmosphere.
GHG Protocol	The Greenhouse Gas Protocol is a comprehensive, global, standardised framework for measuring and managing GHGs.
Global Warming Potential	A value that allows direct comparison of the impact of different greenhouse gases in the atmosphere.
Greenhouse Gasses (GHGs)	GHGs are the six gases listed in the Kyoto Protocol: carbon dioxide; methane; nitrous oxide; hydrofluorocarbons; perfluorocarbons; and sulphur hexafluoride.
Indirect GHG Emissions	Emissions that result from an organisation's activities, but are actually emitted from sources owned by other entities.
Scope 1	All direct GHG emissions under an organisation's control.
Scope 2	An organisation's emissions associated with the generation of electricity, heating/cooling, or steam purchased for own consumption.
Scope 3	Indirect emissions along an organisation's value chain, not directly controlled by the business.



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