

INSPIRED

Carbon Balance Sheet FY25

Produced for University of Wolverhampton

By Inspired

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Introduction

This report contains University of Wolverhampton’s (UoW) Carbon Balance Sheet of Scope 1, 2 and 3 emissions for FY25 (1st August 2024 – 31st July 2025). This is UoW’s first Carbon Balance Sheet prepared by Inspired.

Until recently, most organisations have focused on measuring emissions from their own operations and electricity consumption (Scope 1 and 2), whereas Scope 3 accounts for the Greenhouse Gas (GHG) emissions associated with a company’s entire value chain. This Carbon Balance Sheet reports UoW’s full Scope 1, 2 and 3 GHG emissions footprint and:

1. Enables UoW to identify the material emissions sources in its overall value chain and where it can make the most significant impact on global emission reductions.
2. Provides the baseline for making decisions about near-term emission reduction targets and net-zero.
3. Provides a Scope 1, 2 and 3 GHG inventory which is compliant with the Science-Based Targets initiative (SBTi) near-term criteria and net-zero standard.
4. Covers the five Scope 3 emissions categories required in the UK Government’s Procurement Policy Note (PPN) 006: Taking account of Carbon Reduction Plans.
5. Provides a consistent way to report and measure progress year on year.

Key Findings

UoW's total greenhouse gas emissions (Scopes 1, 2 and 3) (location-based) were 24,768 tCO₂e.

UoW's total greenhouse gas emissions (Scopes 1, 2 and 3) (market-based) were 23,366 tCO₂e.

UoW's total greenhouse gas emission increased by 40% between FY2024 and FY2025.

Scope 1 and 2 emissions represent 31% of total emissions.

Scope 1 emissions decreased by 8% while Scope 2 (location-based) emissions decreased by 23%.

Scope 3 emissions represent 69% of total emissions.

The increase in emissions was mainly driven by an increase in Scope 3 Category 2 (Capital Goods) and Category 1 (Purchased Goods and Services) emissions, which increased by 603% and 51%, respectively.

The most significant emissions source is from the embedded emissions in the purchased capital and operational goods UoW purchases.

Scope 3 Category 2 (Capital Goods) accounts for 30% of the total carbon footprint for UoW.

Scope 1 and 2 emissions are within UoW's direct control, and a mix of energy efficiency measures, on-site generation and green energy procurement will enable the company to reduce these emissions over time.

Scope 3 emissions can be addressed through engagement with suppliers and customers.

Emissions Footprint Summary

This Carbon Balance Sheet contains UoW’s full Greenhouse Gas (GHG) emissions inventory for FY25.

UoW’s emissions are reported on a consolidation, operational control approach, as defined by the GHG Protocol. All emissions have been calculated following the GHG Protocol’s Corporate Accounting and Reporting Standard. All seven greenhouse gases defined by the Kyoto Protocol have been accounted for and reported on a tonnes of carbon dioxide equivalent (tCO₂e) basis.

Figure 2 shows UoW’s emissions compared to an average benchmark for the education sector.

Figure 1: FY25 Emissions breakdown by scope and Scope 2 reporting method.

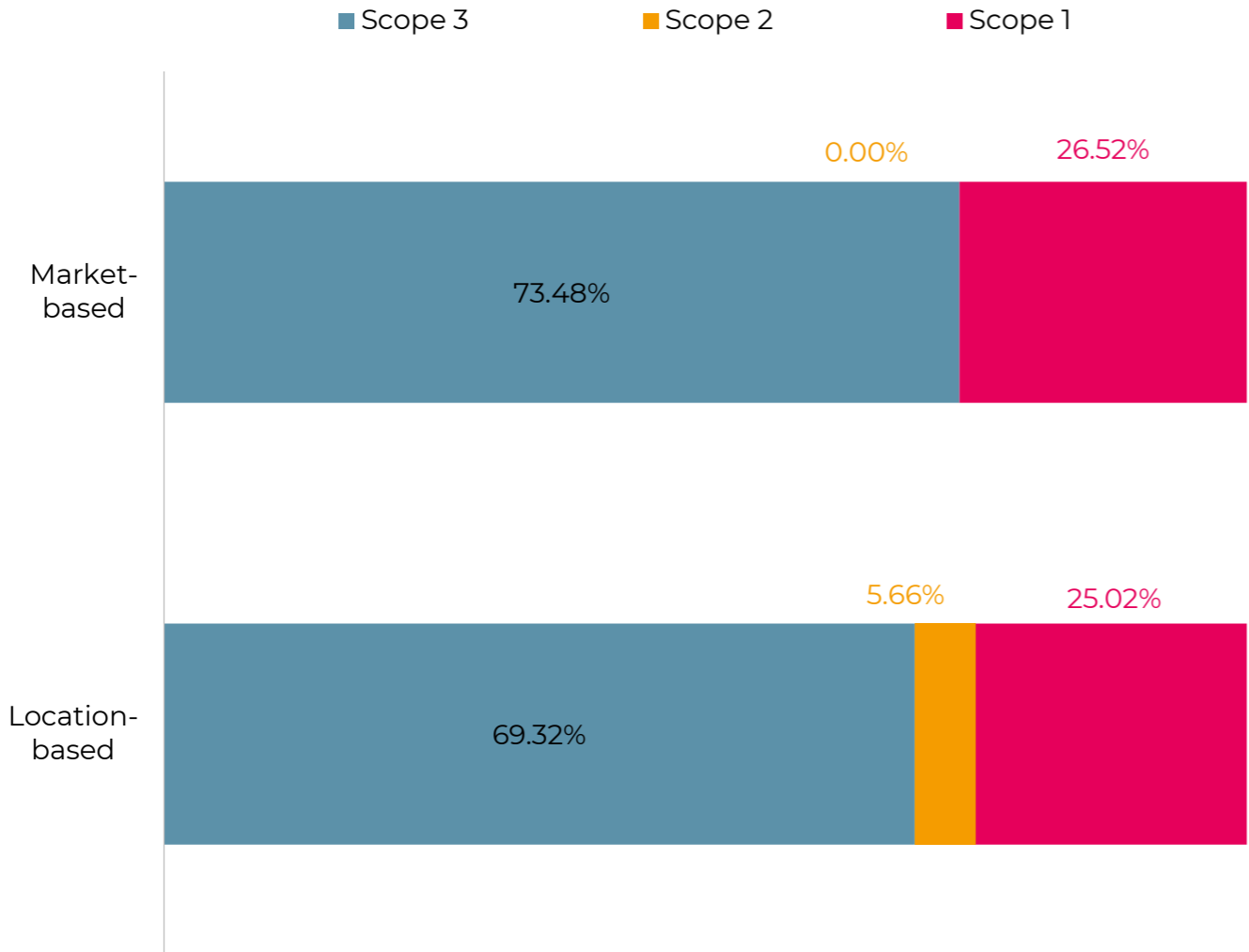
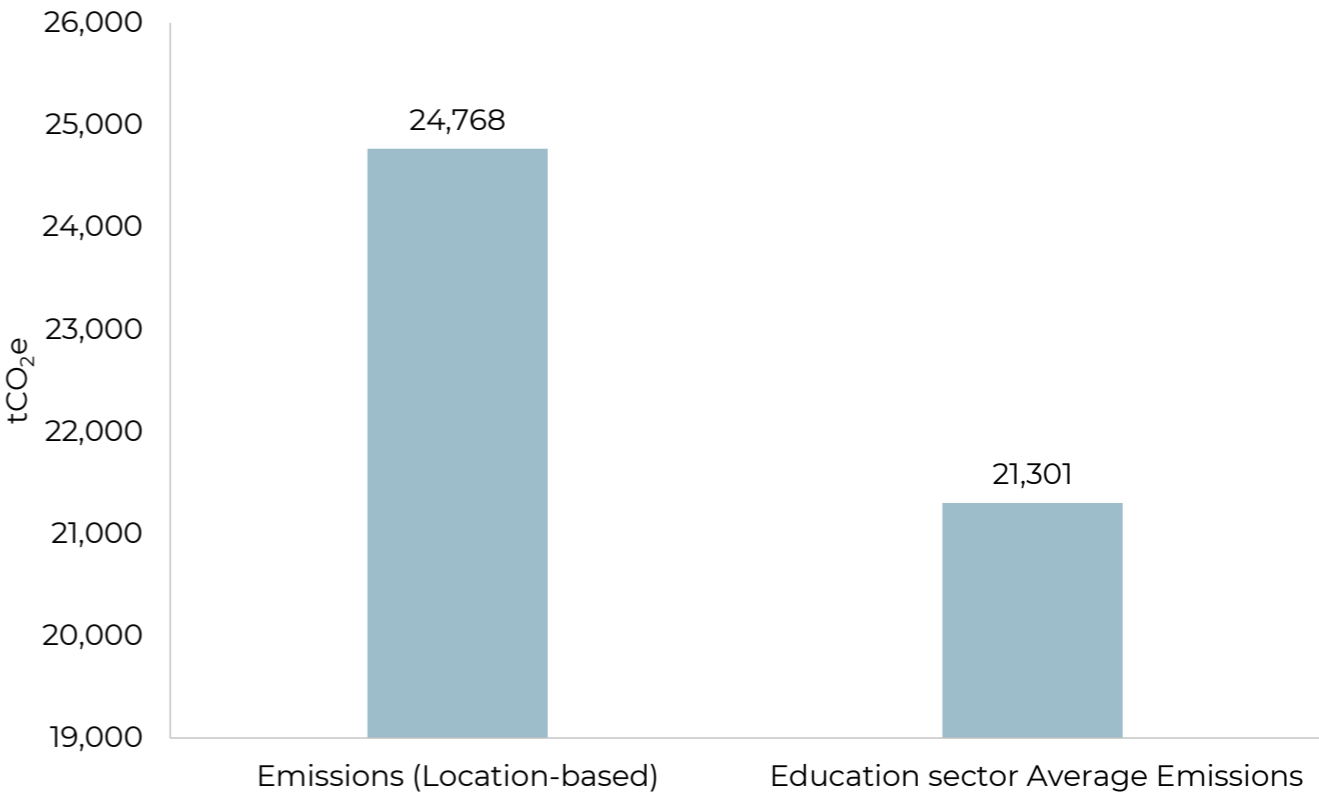


Table 1: Emissions summary.

Emissions Scope	FY25 GHG emissions tCO ₂ e	FY24 GHG emissions tCO ₂ e
Scope 1	6,198	6,701
Scope 2 (Location-based)	1,401	1,812
Scope 2 (Market-based)	0	0
Scope 3	17,169	9,241
Total GHG emissions (Location-based)	24,768	17,754
Total GHG emissions (Market-based)	23,366	15,942

Figure 2: Your Scope 1, 2 and 3 emissions in context.



Carbon Balance Sheet FY25

Table 2: Carbon Balance Sheet.

Emissions Scope & Category	FY25 Emissions (tCO ₂ e)	Percentage of total emissions	Previous Year FY24 tCO ₂ e
Scope 1	6,198	25%	6,701
Natural Gas	6,106	25%	6,396
Transportation (Excluding Grey Fleet)	30	0%	305
Other Fuels	62	0%	0
Scope 2 (Location-based)	1,401	6%	1,812
Scope 2 (Market-based)	0	0%	0
Scope 3	17,169	69%	9,241
1. Purchased Goods & Services	6,260	25%	4,150
2. Capital Goods	7,410	30%	1,053
3. Fuel-related Emissions	1,557	6%	1,653
4. Upstream Transportation and Distribution	N/A	N/A	0
5. Waste Generated in Operations	2	0%	27
6. Business Travel	742	3%	1,094
7. Employee Commuting	N/A	N/A	0
8. Upstream Leased Assets	N/A	N/A	0
9. Downstream Transportation and Distribution	N/A	N/A	0
10. Processing of Sold Products	N/A	N/A	0
11. Use of Sold Products	N/A	N/A	0
12. End-of-life Treatment of Sold Products	N/A	N/A	0
13. Downstream Leased Assets	1,198	5%	1,265
14. Franchises	N/A	N/A	0
15. Investments	N/A	N/A	0
Total emissions (Location-based)	24,768	100%	17,754
Total emissions (Market-based)	23,366	94%	15,942

Table 3: Intensity Metrics

Intensity Metrics	Location-Based tCO ₂ e		
	FY25	FY24	YoY Change (%)
Students	23,968	18,680	+28%
Staff	2,176	2,200	-1%
Thousand square meters	206	191	+9%
tCO₂e per Student	1.03	0.95	+9%
tCO₂e per Staff	11.38	8.07	+41%
tCO₂e per Thousand square meters	120.65	93.17	+36%

Intensity Metrics	Market-Based tCO ₂ e		
	FY25	FY24	YoY Change (%)
Students	23,968	18,680	+28%
Staff	2,176	2,200	-1%
Thousand square meters	209	192	+9%
tCO₂e per Student	0.97	0.85	+15%
tCO₂e per Staff	10.74	7.25	+48%
tCO₂e per Thousand square meters	113.83	83.67	+36%

Emissions Analysis

The most significant source of Scope 3 emissions is Category 2 (Capital Goods). According to the GHG Protocol guidance, Capital Goods covers upstream, cradle-to-gate emissions from the production of acquired assets with a long lifespan, such as buildings, machinery, and vehicles. Purchases of IT equipment (such as personal computers, tablets and laptops) and building refurbishment are captured within this category. This category accounts for 30% of UoW’s total carbon footprint.

Moving away from spend based calculations to supplier specific emissions will help to improve the data accuracy of this category.

Table 4: Top 5 emissions categories.

Materiality Rank	GHG Emissions Scope and Category
1	Scope 3 – Category 2 (Capital Goods)
2	Scope 3 – Category 1 (Purchased Goods and Services)
3	Scope 1
4	Scope 3 – Category 3 (Fuel- and Energy-related Activities)
5	Scope 2 (Location-based)

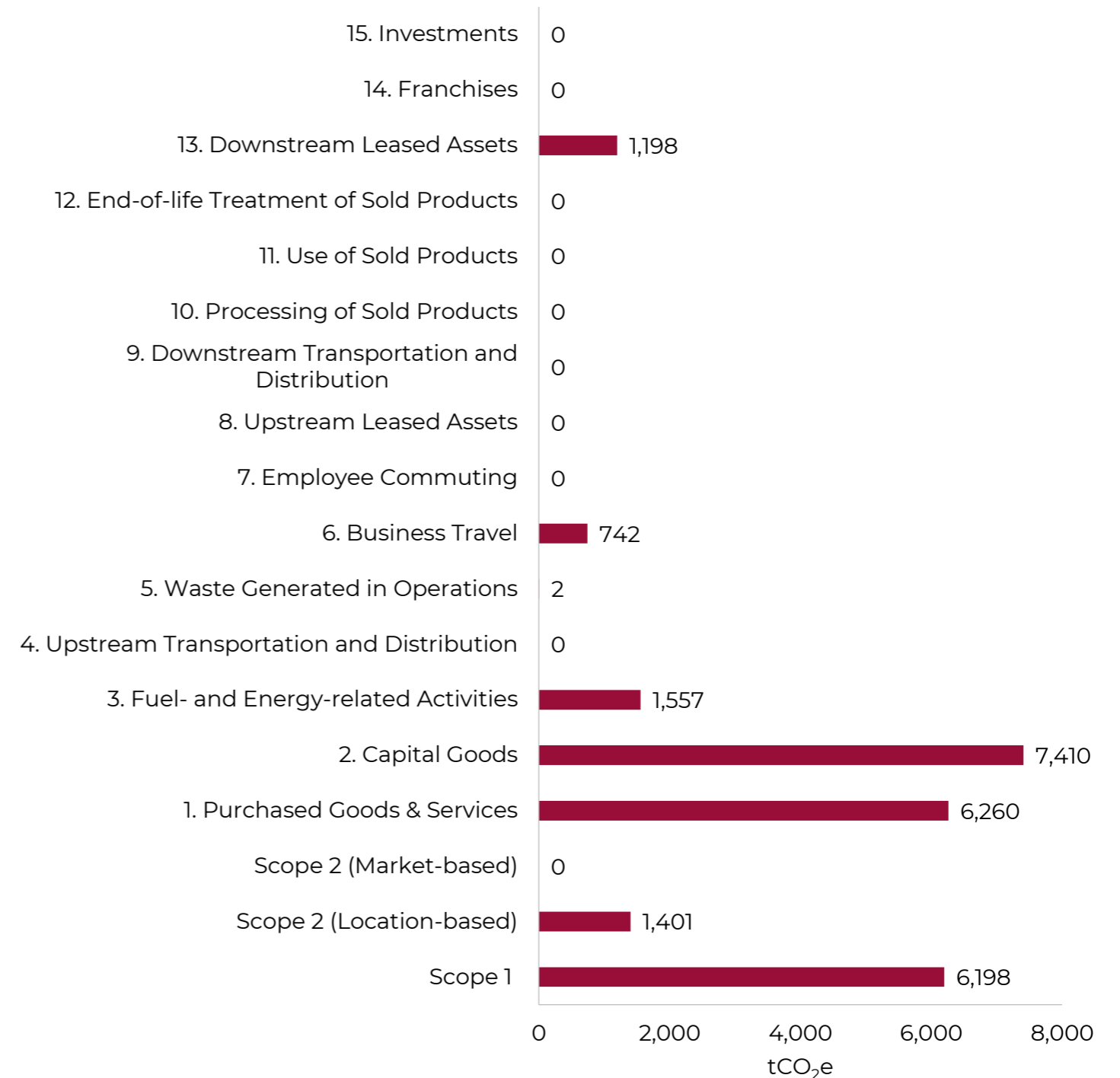
The next highest emissions source of emissions is Category 1 (Purchased Goods and Services). This category refers to all upstream greenhouse gas emissions from the production of products and services a company buys. It covers raw materials, components, and services, including books, software and uniforms. This category has been calculated using a spend-based method which has a low data accuracy. Category 1 accounted for 25% of UoW’s total GHG emissions.

Scope 1 (combustion of natural gas and transportation fuels) accounts for 25% of UoW’s GHG emissions. Scope 1 emissions have decreased by 8% from the previous year (FY24) showing a potential improvement in process and building efficiency.

The fourth highest emissions source is attributed from Scope 3 Category 3 (Fuel- and Energy-Related Activities). This category includes "well-to-tank" emissions and transmission & distribution (T&D) losses, accounting for emissions before energy reaches the company, making it crucial for understanding a full energy footprint. This category accounts for 6% of UoW’s total emissions.

Scope 2 (Location-based) emissions are indirect emissions from the generation of purchased energy such as electricity. This emissions scope accounts for 6% of UoW’s total emissions and has decreased by 23% compared to FY24.

Figure 3: Emissions by Scope and Category.





Data Collection Recommendations

The guidance in the GHG Protocol has been followed throughout and a summary of the data sources and methodologies used for each category are set out in the methodology table.

The areas of data collection that would benefit from improvement in the future to improve the effectiveness of the Carbon Balance Sheet have been identified and are shown in Table 4.

Table 5: Data collection recommendations

Emissions Scope / Category	Data Collection Recommendations
Scope 3 – Category 2 (Capital Goods)	Conduct supplier analysis to obtain supplier specific emissions for purchased products. This could include obtaining Life Cycle Assessment (LCA) data or supplier specific emission factors. Moving away from spend based data to weight or activity data may help improve data accuracy resulting in more comparable year on year emissions.
Scope 3 – Category 1 (Purchased Goods and Services)	As per Category 2.
Scope 3 – Category 3 (Fuel- and Energy-related Activities)	Contacting energy suppliers to obtain specific emission factors that include grid transmission losses and upstream emissions. Alternatively, moving away from supplied energy will help to reduce this emissions category. On site generation removes T&D and WTT losses.
Scope 3 – Category 13 (Downstream leased assets)	Installing sub metering at the leased asset will provide UoW with real-time energy usage, providing improved data accuracy and a better understanding of how energy is used by the tenant.
Scope 6 – Category 6 (Business Travel)	Conduct supplier analysis to obtain supplier specific emissions for purchased travel and accommodation. For example, engaging hotels to determine if they have a specific emissions intensity for each room per night.

Methodology

The following table sets out the applicability of each category; data sources and an overview of the methodology followed for Scope 3 calculations. Unless stated otherwise, all conversion factors are sourced from the UK Government (DESNZ) GHG Conversion Factors for Company Reporting, version 1.0 2025, and include Scope 3 Well-to-Tank (WTT) and Transmission and Distribution (T&D) losses.

The Greenhouse Gas Protocol Value Chain methodology is followed in all cases. Well-to-Tank refers to the emissions associated with extracting raw materials (e.g. oil and gas), processing them into fuels and transporting them to the point of use (e.g. the fuel tank or the power station). T&D losses represent the electricity consumed and lost in the network between the power generators and the consumers.

Restatement Policy

In line with the Greenhouse Gas (GHG) Protocol and Science-Based Targets initiative (SBTi) guidance, UoW will recalculate baseline and historic emissions when significant changes occur in company structure or methodology in order to maintain data integrity over time.

A $\pm 5\%$ variation in baseline target boundary emissions due to the following changes will trigger a restatement:

- Structural Changes: Ownership or control transfers of emissions-generating activities.
- Methodological Changes: Updates in calculation methods or improved accuracy of emission factors affecting base-year emissions significantly.
- Error Discovery: Significant errors, or a series of cumulative errors that are collectively significant.

UoW may also adjust for changes under 5%, particularly for significant structural changes. This policy will evolve with updates from the GHG Protocol and SBTi.

Table 6: Methodology, data sources, quality rating and recommendations.

Emissions Category	Data Source(s)	Method Comments	Data Quality Rating	Data Recommendations
Scope 1	Gas invoices Fuel consumption data in milage or litres.	<p>Activity-based approach</p> <ul style="list-style-type: none"> The Scope 1 and 2 CO₂e emissions data has been calculated using the GHG Protocol – A Corporate Accounting and Reporting Standard (World Business Council for Sustainable Development and World Resources Institute, 2004); Greenhouse Gas Protocol – Scope 2 Guidance (World Resources Institute, 2015); ISO 14064-1 and ISO 14064-2 (ISO, 2018; ISO, 2019a); Environmental Reporting Guidelines: Including Streamlined Energy and Carbon Reporting Guidance (HM Government, 2019). 	High	n/a
Scope 2 – Location-based	Electricity Invoices.	<ul style="list-style-type: none"> A location-based method reflects the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emission factor data). Government Emissions Factor Database 2025 version 1 has been used, utilising the published kWh gross Calorific Value (CV) and kgCO₂e emissions factors. 	High	n/a
Scope 2 – Market-based	Electricity Invoices.	<ul style="list-style-type: none"> A market-based method reflects emissions from electricity that companies have purposefully chosen (or their lack of choice). It derives emission factors from contractual instruments, which include any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims. Market-based emissions are reported in tCO₂ only. Market-based emissions in this report have been calculated using the supplier-specific fuel mix emissions factors. 	High	n/a

Table 6 continued

Emissions Category	Data Source(s)	Method Comments	Data Quality Rating	Data Recommendations
1: Purchased Goods and Services	Quantity and weight of purchased goods.	Spend-based approach <ul style="list-style-type: none"> Opex. spend converted into £ value of year of conversion factors using Bank of England inflation calculator. Emissions calculated using converted spend and spend-based emissions factors from DESNZ. 	Low	Conduct supplier surveys to collect supplier specific emissions data.
2. Capital Goods	Capital expenditure data, bucketed into categories.	Spend-based approach <ul style="list-style-type: none"> Capital expenditure spend was converted into £ value of year of conversion factors using the Bank of England inflation calculator. Emissions were calculated using converted spend and spend-based emissions factors from DEFRA. 	Low	Move away from spend-based data and engage with suppliers to gather more specific emissions data for capital purchases.
3. Fuel- and Energy-related Activities	Electricity, gas and transport fuel consumption data from Streamlined Energy and Carbon Reporting (SECR).	Activity-based approach <ul style="list-style-type: none"> Includes WTT and T&D losses from direct (Scope 1) and indirect (Scope 2) energy consumption. For natural gas, other fuels and transport fuel consumption, the WTT emissions factors as published by the UK Government were applied to calculate Category 3 emissions. For electricity consumption, the transmission and distribution (T&D), WTT – generation and WTT – T&D emissions factors were applied to calculate Category 3 emissions. These losses from other sources are included in their respective categories. 	High	n/a
4. Upstream Transportation and Distribution	Upstream transportation and distribution emissions calculated for this report. This could be included in future years by improving data collection to cover postage and courier services.			
5. Waste Generated in Operations	Categorised waste weight from waste notes.	Waste-type specific approach <ul style="list-style-type: none"> DESNZ emissions factors for specified types of disposed material and specified disposal routes (recycling, energy recovery/combustion, landfill) used to calculate emissions 	Medium	Where possible, provide the location of the disposal facility and if possible, obtain facility specific waste disposal emission factors.

Table 6 continued

Emissions Category	Data Source(s)	Method Comments	Data Quality Rating	Data Recommendations
6. Business Travel	Travel and accommodation spend. Business travel mileage.	Hybrid approach using spend and activity-based methodologies. Activity-based approach <ul style="list-style-type: none"> Flight distance data was provided based by UoW and was converted to tCO₂e using the relevant emissions factor from the DESNZ 2025 emissions factor database. Hotel stays per country were used and converted to tCO₂e using the relevant emissions factor from the DESNZ 2025 emissions factor database. Spend-based approach <ul style="list-style-type: none"> Assumptions were made on the average cost of a mile per transport mode in order to estimate the total distance travelled by each transport mode. 	Medium	Where possible collect journey distances for travel using taxis and buses.
7. Employee Commuting	Employee commuting has not been calculated this year. It is recommended that UoW conduct and employee commuting survey to obtain necessary data for this category.			
8. Upstream Leased Assets	UoW does not lease assets and therefore this category has been excluded.			
9. Downstream Transportation and Distribution	Downstream transportation and distribution emissions have not been calculated for this report. This could be included in future years by improving data collection to cover postage and courier services.			
10. Processing of Sold Products	UoW has no products that require further processing and therefore this category has been excluded.			

Table 6 continued

Emissions Category	Data Source(s)	Method Comments	Data Quality Rating	Data Recommendations
11. Use of Sold Products		UoW does not sell products that consume energy and therefore this category has been excluded.		
12. End-of-life Treatment of Sold Products		UoW does not sell products that consume energy and therefore this category has been excluded.		
13. Downstream Leased Assets	Energy usage or floor spaced of leased asset	Asset-specific approach <ul style="list-style-type: none"> Government Emissions Factor Database 2025 version 1.0 has been used, utilising the published kWh gross calorific value (CV) and kgCO₂e emissions factors. 	High	Installing sub metering at the leased asset will provide UoW with real-time energy usage.
14. Franchises		UoW does not have franchises and therefore this category has been excluded.		
15. Investments		UoW does not have investments in other businesses and therefore this category has been excluded.		

Glossary

Adjusted Spend: Adjusting the provided spend values to the year of the relevant spend-based database. This adjusted value is used to calculate the associated carbon emissions.

Carbon Dioxide (CO₂): A greenhouse gas that enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions (e.g., cement production).

Carbon Neutral: Carbon neutral means an organisation has purchased an equivalent number of compensatory measures, such as carbon offsets and green energy certificates, to neutralise their GHG emissions.

Carbon Offsets: Investing in voluntary carbon offsets funds low-carbon projects that replace high emitting alternatives. Carbon offsets can be used to compensate for the emissions produced by a company.

Embodied Emissions: Embodied emissions are emissions associated with the cradle to gate manufacture of products, for example emissions produced through extraction of raw materials, transportation of material and manufacturing processes.

Fluorinated Gases: Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are synthetic, powerful greenhouse gases that are emitted from a variety of household, commercial, and industrial applications and processes.

Greenhouse Gas (GHG): Gases that trap heat in the atmosphere.

GHG Protocol: The Greenhouse Gas Protocol is the most widely used standard for calculating greenhouse gas (GHG) emissions.

Global Warming Potential (GWP): GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO₂). The larger the GWP, the more that a given gas warms the Earth compared to CO₂ over that time period.

Kyoto Protocol: The Kyoto Protocol operationalises the UN Framework Convention on Climate Change by committing industrialised countries and economies in transition to limit and reduce greenhouse gas (GHG) emissions in accordance with agreed individual targets. There are seven GHGs that are required to be reported under the Kyoto Protocol: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF₆) and Nitrogen trifluoride (NF₃).

Location-based Emissions: Methodology to calculate Scope 2 emissions using the average grid emissions factor of a region.

Market-based Emissions: Methodology to calculate Scope 2 emissions using emissions factors specific to the contractual instruments in place.

Methane (CH₄): A greenhouse gas emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use, and the decay of organic waste in municipal solid waste landfills.

Net-zero: Net-zero requires a concerted effort over time to eliminate GHG emissions, with compensatory measures as a final step for any emissions that can't be reduced. The SBTi net-zero standard requires a 90% reduction in emissions prior to any residual offsets, up to 10% of the baseline, being offset using carbon removal offsets.

Nitrous Oxide (N₂O): A greenhouse gas emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during the treatment of wastewater.

SBTi: The Science-Based Targets initiative (SBTi) is the internationally recognised body for validating emissions reduction targets that are in line with the latest climate science.

Scope 1: Emissions from gas usage and transportation fuels (under the company's control).

Scope 2: Emissions associated with the consumption of purchased electricity. These emissions are presented on both a location-based (using country average electricity emission factors) and market-based (taking into account any purchased renewable generated electricity) approach.

Scope 3: Company's value chain emissions, divided into 15 categories, as established by the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting & Reporting Standard.

Sulphur Hexafluoride (SF₆): A greenhouse gas that is primarily used in electrical transmission and distribution equipment.

tCO₂: Tonnes of carbon dioxide gas released into the atmosphere. This metric is often used when reporting electricity emissions factors.

tCO₂e: Greenhouse gases have different global warming potentials and are converted to a carbon dioxide equivalent for ease of comparison and reporting.



GHG Protocol – Data Types

The Greenhouse Gas Protocol is the primary, internationally accepted, method for companies to account for their operational and value chain emissions.

According to the GHG Protocol, calculating emissions requires the use of two types of data: activity data and emission factors. “Activity data” is a quantitative measure of an activity that results in GHG emissions (for example, litres of fuel consumed, or kilograms of material purchased). An “emission factor” is a factor that converts activity data into GHG emissions data (for example, kg CO₂ emitted per litres of fuel consumed, or kg CO₂ emitted per kilograms of material produced).

When considering which activity and emissions data to use, there are two types of data that can be used in Scope 3 calculations:

Primary data is data from specific activities within a company’s value chain. It includes data provided by suppliers or others that directly relate to specific activities in that company’s supply chain. For example, when calculating emissions for Scope 3, Category 5 – waste, the weight of waste collected by the disposal company, segregated by waste stream and disposal route.

Secondary data is data that is not from specific activities within a company’s value chain. This includes industry average data (for example, from published databases, government statistics, literature studies and industry associations), proxy data and other generic data that isn’t specific to your business. For example, when calculating emissions for Scope 3, Category 7 – employee commuting, if actual employee commuting patterns are unavailable, Office for National Statistics commuting data can be used instead.

There are a range of methods that can be used for calculating Scope 3 categories, the most common methods include:

- **Supplier-specific:** Using supplier-specific emissions factors for goods/services (primary data).
- **Hybrid:** Using a combination of supplier-specific emissions factors (primary data) and industry average emissions factors (secondary data).
- **Average-data:** Using industry average emissions factors (secondary data) based on quantities of goods/services used. For example, DESNZ annual emission factors (kgCO₂e/t).
- **Spend-based:** Using industry average emissions factors (secondary data) based on spend on goods/services used. For example, DEFRA spend emissions factors (kgCO₂e/£).

IV: Quality Review

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