Carbon Footprint Appraisal
for
Winchester City Council

Assessment Period:
1st April 2024 – 31st March 2025

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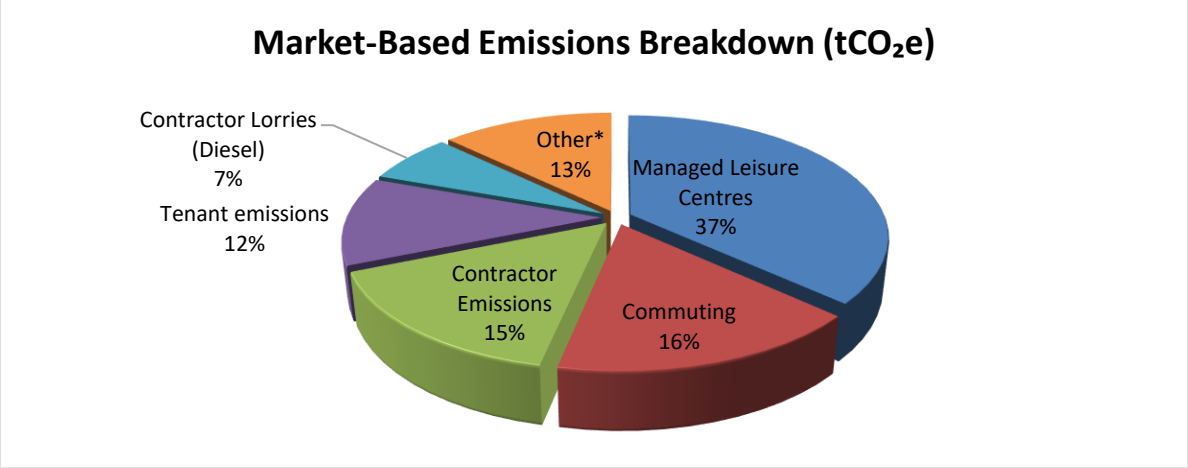
Executive Summary

Current Performance

- → WCC's total market-based emissions are 2,252.09 tCO_2e (with a location-based emissions of 3,259.11 tCO_2e).
- → The most significant market-based emission source is managed leisure centres, accounting for 37% of WCC's carbon footprint.
- → The estimated market-based error margin is a significant aspect (+/- 146.52 tCO_2e) and should be included in any offsetting of emissions.

Recommendations

- → Acquire Renewable Gas Guarantees of Origin (RGGOs) for leisure centres and other remaining sites to reduce scope 3 gas emissions.
- → Conduct targeted energy audits at the Winchester Leisure Centre and other high-consumption buildings to identify energy efficiency opportunities.
- → Continue to decarbonise the Council's fleet by acquiring electric vans to replace diesel vehicles.
- → Encourage ID Verde to adopt more sustainable practices by using HVO fuel in vehicles and switching to lower-carbon tools.
- → Promote sustainable staff travel for commuting and business by encouraging remote meetings and alternative transport methods.
- → Request that landlords for key properties, such as the Brooks and Tower Street car parks, switch to a verified 100% renewable electricity tariff.
- → Offset all emissions to compensate for CO_2 caused – these persist in the environment and continue to cause damage (reducing the Council's future emissions does not address the emissions it has already produced).



*Other= Upstream Leased Assets – Tower Street Car Park, Park & Ride Buses (Diesel & HVO), Council Owned Vans, Grey Fleet, Home-working, Upstream Leased Assets - Street lighting, Upstream Leased Assets - Tower Street Car Park, Contractor Lorries (HVO & EV), Council Owned Cars, Waste, Wastewater, Diesel, Water, Electricity, Rail, Gas, Contractor Cars (Diesel & EV), Petrol, LPG, Transmission & Distribution, Taxi, Bus, Refrigerants.

Metric	2017/18	2023/24	2024/25	% change from base year	% change from prev. year
Location-based: total tonnes CO_2e	4,186.84	4,197.54	3,259.11	-22%	-22%
Market-based: total tonnes CO_2e	4,251.12	4,104.01	2,252.09	-47%	-45%
Market-based: total tCO_2e per employee	8.71	9.20	4.89	-44%	-47%
Market-based: total tCO_2e per capita	0.035	0.032	0.018	-49%	-45%
Market-based: scope 1 & 2 total (tCO_2e)*	1,444.26	398.16	57.73	-96%	-86%

* Market-based emissions were not assessed in 2017/18. In the previous year assessment, they were estimated using the UK residual fuel mix for 2017 to allow comparison.

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Quality Control

Report issue number:	3.0
Date:	10 September 2025
Calculations completed by:	Stephen Laurent
Calculations reviewed by:	Georgina Whitlock
Report produced by:	Stephen Laurent
Report reviewed by:	Georgina Whitlock
Director approval:	Dr. Wendy Buckley

1. Introduction

1.1. Company Overview

The district of Winchester City Council (WCC) is in the south of England and covers 250 square miles. The Council began assessing its carbon footprint in 2008 and continues to do so on an annual basis to monitor emissions and identify areas where reductions may be possible. The Council re-baselined in 2017/18 to account for more accurate data and an increase in scope of emission sources.

1.2. Goals & objectives

WCC has a Carbon Neutrality Action Plan for 2023-2030, in which it aims for the district to be carbon neutral by 2030.

1.3. Data supplied for the Carbon Footprint Appraisal

A summary of the data supplied by WCC for the appraisal can be provided on request.

1.4. Methodology for the Carbon Footprint Appraisal

The methodology document can be downloaded using this link,
https://www.carbonfootprint.com/docs/carbon_footprint_appraisal_-_methodology_document.pdf

1.5. Abbreviations

AC	Air Conditioning
CO_2e	Carbon Dioxide Equivalent
Defra	Department for Environment, Food and Rural Affairs
EV	Electric Vehicle
GHG	Greenhouse Gas
ISO	International Standards Organisation
IWA	International Workshop Agreement
km	Kilometres
kWh	Kilowatt Hours
T&D	Transmission & Distribution
TTW	Tank-To-Wheel
WTT	Well-To-Tank
WTW	Well-To-Wheel

2. Calculation Scope and Accuracy

2.1. Scope of this work

Carbon Footprint has assessed the GHG emissions from **1st April 2024 to 31st March 2025** resulting from the energy consumption at WCC's facilities and its business transport activities. **WCC's base year is 2017/18.**

2.2. Organisational & reporting boundaries

Figure 1 shows the full boundaries of the *Greenhouse Gas Protocol Corporate and Value Chain Standards*. The organisation has accounted for all quantified GHG emissions and/or removals from facilities over which it has **operational control**. This assessment covers the reporting boundaries shown in Table 1, in line with the Greenhouse Gas Protocol Accounting and Reporting Corporate Standard.

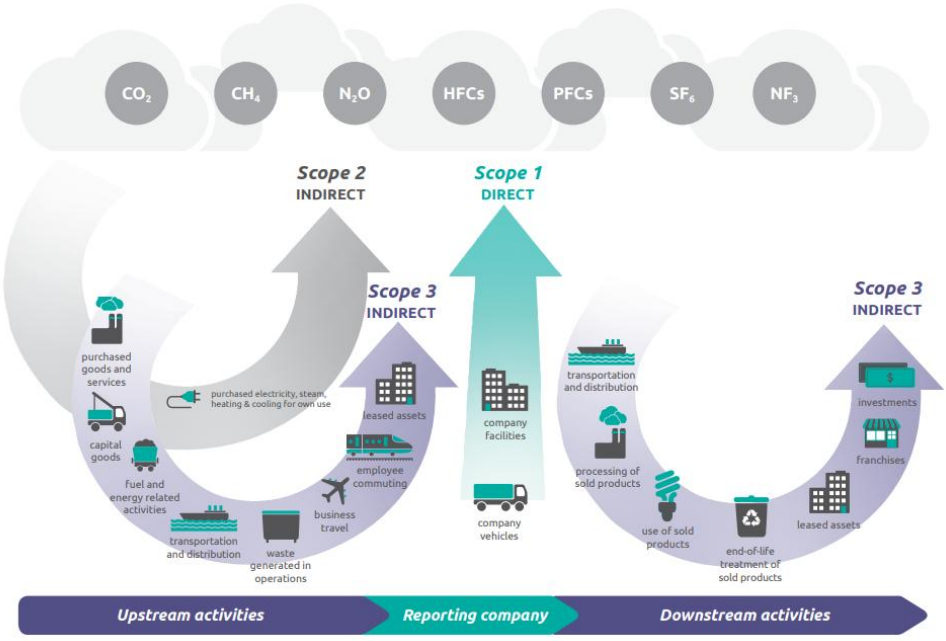

Figure 1: Overview of emissions scopes (GHG Protocol - Scope 3 Calculation Guidance v1.0 - 2013

The following assumptions or exclusions have been made in accordance with the reporting boundary:

- Any energy consumption metered directly to tenants under their own energy contracts with suppliers has been excluded.
- Where third party tenants are recharged by WCC and operational control is not perceived (i.e., tenants have individual boilers), energy has been included in scope 3.
- Where tenants have individual boilers (and therefore operational control), though the property only has one meter and is all recharged to tenants, the energy use/boiler that the Council has operational control over (i.e., communal space) has been reported in scope 3 due to inability to separate out the data.
- Where there is a central plant serving the whole property (flats and communal spaces), it has been agreed between WCC and Carbon Footprint that this is to be included under the Council's operational control (i.e., scope 1).

Table 1: WCC's GHG Assessment boundary based on the Greenhouse Gas Protocol Accounting and Reporting Corporate Standard

(All green rows have been included in this assessment; all grey rows are not applicable; orange rows have been excluded)

Scope	Activity	Completion Status	Justification
1	Electricity, heat or steam generated on-site	Complete	
1	On-site fuel use	Complete	
1	Company owned vehicles	Complete	
1	Fugitive emissions (incl. Refrigerant gases and AC)	Complete	
2	Consumption of purchased electricity, heat steam and cooling	Complete	
3	1. Purchased goods and services	Partial	Emissions are currently assessed for purchased water and two suppliers (Biffa & ID Verde). A screening exercise is recommended to determine the relevance of other PG&S emissions.
3	2. Capital goods	Excluded	Not currently assessed. A screening exercise is recommended to determine the relevance.
3	3. Fuel- and energy related activities (not included in scope 1 or scope 2)	Partial	Transmission & distribution of electricity is included. Well-To-Tank emissions are currently excluded.
3	4. Upstream transportation and distribution	Partial	The Park & Ride bus service has been assessed. Other transport associated with PG&S is currently excluded. A screening exercise is recommended.
3	5. Waste generated in operations	Complete	
3	6. Business travel (not included in scope 1 or scope 2)	Complete	
3	7. Employee commuting	Complete	
3	8. Upstream leased assets	Complete	
3	9. Downstream transportation and distribution	Not relevant	
3	10. Processing of sold products	Not relevant	
3	11. Use of sold products	Not relevant	
3	12. End-of-life treatment of sold products	Not relevant	
3	13. Downstream leased assets	Partial	Currently excludes sites where tenants are metered and billed directly by the energy supplier. We recommend this data is obtained or estimated in future.
3	14. Franchises	Not relevant	
3	15. Investments	Not relevant	

2.3. Calculation uncertainty assessment & materiality

The result of a carbon footprint calculation varies in accuracy depending on the data set provided. The more accurate the data supplied, the more accurate the final result. Materiality is determined by the percentage contribution of each element to the overall footprint. Based on the accuracy of the data provided (Table 2), a simple uncertainty analysis has been used to estimate the potential error margin for the appraisal results.

Table 2: Assessment accuracy, materiality and simple error analysis

Emission Source	Data source / comments	Materiality	Uncertainty	Market-based Error Margin (tCO_2e)
Managed Leisure Centres - Natural Gas	Leisure Centre provided kWh data from utility bills/meter readings. Supporting evidence was not provided, therefore uncertainty level is 5%.	High (20-40%)	5%	41.02
Commuting	Data obtained from staff survey. Results were extrapolated to account for response rate. Response rate was approximately 48%.	Medium (5-20%)	10%	37.31
Home-working	Data obtained from staff survey. Results were extrapolated to account for response rate. Response rate was approximately 48%.	Low (1-5%)	50%	19.80
Contractor fuel use	**ID Verde** – annual litres of fuel provided for WCC contracts. Petrol is used for small kit and diesel is used for vehicles and large equipment such as ride-on mowers.	Medium (5-20%)	5%	17.40
Tenant emissions - natural gas	Annual kWh data obtained from utility bills/energy supplier.	Medium (5-20%)	5%	6.99
Tenants – Electricity	Annual kWh data obtained from bills/meter readings for the Brooks Car Park & Unit 2 The Ring Tower and other downstream sites.	Medium (5-20%)	5%	6.21
Upstream leased assets - street lighting & Tower Street car park	Annual kWh data obtained from Hampshire County Council.	Very Low (<1%)	5%	3.88
Council-owned vans	Vehicle details, annual mileage and fuel consumption provided. Electric vans are assumed to be predominately charged at WCC sites.	Low (1-5%)	5%	2.45
Managed Leisure Centres - Wastewater	Wastewater has been assumed to be 95% of supply.	Very Low (<1%)	50%	2.03
Grey fleet travel	Vehicles details and annual mileage obtained from expense records and DVLA. It has been assumed that staff's personal electric vehicles are predominately charged at their homes.	Low (1-5%)	5%	1.99
Managed Leisure Centres - Water	Water usage data has been provided by the Leisure Centres from monthly monitoring records. Supporting evidence was not provided.	Very Low (<1%)	50%	1.76
Contractor lorries	Mileage and fuel data is provided from the suppliers for WCC contracts (Biffa & CTS Hire). Biffa transitioned to HVO in June 2024, so the total litres of fuel provided were apportioned between standard diesel and HVO by Carbon Footprint Ltd.	Medium (5-20%)	1%	1.59
Wastewater	Assumed 95% of water supplied is returned as wastewater.	Very Low (<1%)	50%	1.54

Emission Source	Data source / comments	Materiality	Uncertainty	Market-based Error Margin (tCO_2e)
Water	Water usage data has been obtained from bills and internal records. Many bills are based on estimated readings as manual readings are taken infrequently. Negative values (due to previous over-estimated billing) were recorded as zero.	Very Low (<1%)	50%	1.35
Park & Ride Service	Total litres of diesel and HVO consumed is obtained from the Transport department. The park & ride buses were switched to HVO in June 2024.	Low (1-5%)	1%	0.53
Council-owned cars	Vehicle details, annual mileage and fuel consumption provided. Electric cars are assumed to be predominately charged at WCC sites.	Very Low (<1%)	5%	0.22
Waste	Type, weight of waste, and disposal routes obtained from supplier reports.	Very Low (<1%)	5%	0.17
Diesel	Annual litres purchased obtained from invoices.	Very Low (<1%)	5%	0.14
Electricity (Market-based)	kWh consumption provided for every site, from energy suppliers or automated meter reader (AMR) data, along with tariff specific emissions and REGO purchases.	Very Low (<1%)	5%	0.04
Contractor vans	Mileage and vehicle data has been provided from the suppliers. Electric vans were assumed to be charged off site.	Very Low (<1%)	5%	0.03
Gas (Market-based)	Annual kWh data obtained from utility bills. All scope 1 sites were covered by RGGOs, which has been accounted for in the market-based reporting using biogas factors.	Very Low (<1%)	5%	0.02
Petrol	Annual litres purchased obtained from invoices.	Very Low (<1%)	5%	0.02
Contractor cars	**Biffa** – fuel, mileage and kWh data has been provided.	Very Low (<1%)	5%	0.02
LPG	Annual litres purchased obtained from invoices.	Very Low (<1%)	5%	0.01
Rail	Expense claims. Cost data provided.	Very Low (<1%)	1%	0.01
Taxi	Expense claims. Cost and mileage data provided.	Very Low (<1%)	1%	< 0.01
Bus	Expense claims. Mileage data provided.	Very Low (<1%)	1%	< 0.01
Managed Leisure Centres - Electricity (Market-Based)	Leisure Centre provided kWh data from utility bills/meter readings. Supporting evidence was not provided, therefore uncertainty level is 5%.	Very Low (<1%)	5%	0.00
Refrigerants	Inspection company confirmed that no refills were required for refrigeration and air conditioning units for 2024/25.	Very Low (<1%)	1%	0.00
Managed Leisure Centres - Refrigerants	Leisure Centres confirmed no refills were required for 2024/25.	Very Low (<1%)	1%	0.00
Total			**+/- 7%**	**+/- 146.52**

3. Carbon Footprint Results

3.1. Summary of results

The total location-based carbon footprint for WCC for the period ending 31st March 2025 is 3,259.11 tonnes CO_2e, and the market-based total is 2,252.09 tonnes CO_2e. See Annex A for full breakdown.

Table 3: Results of WCC's carbon footprint assessment by scope and GHG Protocol emission categories

Scope	Emission Source	Location-based (tCO_2e)	Market-based (tCO_2e)
1	Diesel	2.82	2.82
	Gas	294.38	0.37[1]
	Petrol	0.31	0.31
	LPG	0.11	0.11
	Council Owned Vans	49.03	49.03
	Council Owned Cars	4.35	4.35
	Refrigerants	0.00	0.00
Scope 1 Total		**350.99**	**56.98**
2	Electricity	421.19	0.75[2]
Scope 2 Total		**421.19**	**0.75**
3.1	Contractor Emissions – ID Verde	348.08	348.08
	Contractor Emissions – Biffa & CTS Lorries (Diesel)	149.28	149.28
	Contractor Emissions – Biffa Lorries (HVO)	9.75	9.75
	Water	2.69	2.69
	Contractor Emissions – Biffa Vans (EV)	0.69	1.32
	Contractor Emissions – Biffa Cars (Diesel)	0.32	0.32
	Contractor Emissions – Biffa Lorries (EV)	0.16	0.31
	Contractor Emissions – Biffa Cars (EV)	0.10	0.19
3.3	Transmission & Distribution	37.23	0.03
3.4	Park & Ride Buses (diesel)	49.79	49.79
	Park & Ride Buses (HVO)	3.53	3.53
3.5	Waste	3.30	3.30
	Wastewater	3.08	3.08
3.6	Grey Fleet	39.52	39.71
	Rail	0.72	0.72
	Taxi	0.02	0.02
	Bus	0.01	0.01
3.7	Commuting	373.12	373.12
	Home-working	39.60	39.60
3.8	Upstream Leased Assets - Street lighting	10.62	14.81
	Upstream Leased Assets – Tower Street car park	29.67	62.72
3.13	Managed Leisure Centres	1,184.84	827.91[2]
	Tenant emissions	200.82	264.07
Scope 3 Total		**2,486.94**	**2,194.36**
All	**Tonnes of CO_2e**	**3,259.11**	**2,252.09**
	Tonnes of CO_2e per employee	**7.07**	**4.89**
	Tonnes of CO_2e per Capita	**0.026**	**0.018**
Outside of Scope Emissions (tonnes)[3]		**1,226.63**	

[1] While not required by the GHG Protocol, WCC has decided to dual report its gas emissions this year to account for RGGOs. The market-based total uses biogas factors, with the location-based as natural gas.
[2] The market-based figure was calculated using purchased Renewable Energy Guarantees of Origin (REGOs), in accordance with the GHG Protocol Scope 2 Guidance.
[3] Biogenic CO_2 emissions from the combustion of biomass/biofuel. See Annex B for further detail.

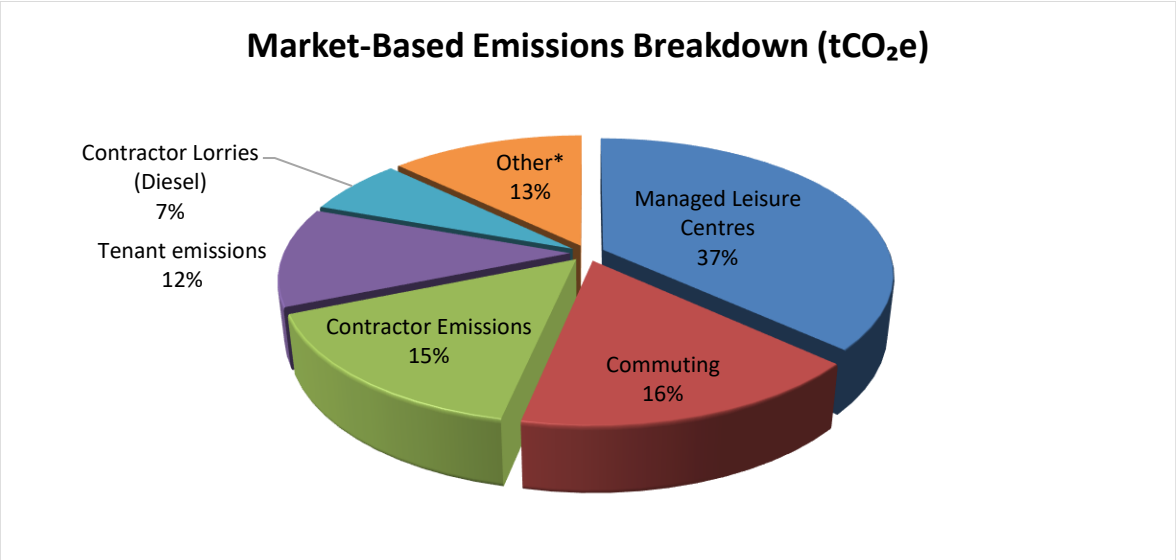

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Figure 2: Percentage contribution of each element of WCC's market-based carbon footprint

3.2. Emissions from energy usage at site facilities

The emissions from site energy use accounted for 52% of the Council's total market-based emissions. Over 71% of the total energy use emissions was associated with leisure centres (Figure 3). The majority of WCC's controlled sites are on 100% renewable electricity supplies, so the market-based emissions are generally reflecting gas usage. Electricity supplies for sites such as the managed leisure centres, street lighting and Brooks Car Park are controlled by other parties and are either confirmed to be on non-renewable supplies or unknown by WCC. The most energy-consuming "housing" site continues to be Chesil Lodge, followed by Whitewings House and Danemark Court (Table 4). The most energy-consuming "non-housing" site is Winchester Sport & Leisure Park, followed by the Guildhall (Table 5). These properties all have high gas consumption of over 200,000 kWh per year.

Recommendations:

- Request landlords to provide evidence of 100% renewable electricity tariffs or to switch if not currently on one (e.g. Brooks Car Park & Tower Street Car Park).
- Request that managers of Meadowside Leisure Centre and Winchester Sport & Leisure Park acquire RGGOs to cover gas usage, as both sites have significant consumption.
- Conduct an energy audit at Winchester Sport & Leisure Park to identify opportunities to improve energy efficiency and reduce any wastage. **As a newly constructed site, the audit should focus on controls & settings (heating, air-conditioning, lighting etc.), policies and behaviours.**
- Conduct energy audits at other highest gas-consuming sites (i.e. Chesil Lodge, Guildhall, Danemark Court, and Whitewings House). **Focus on insulation, draughts, controls and settings.**

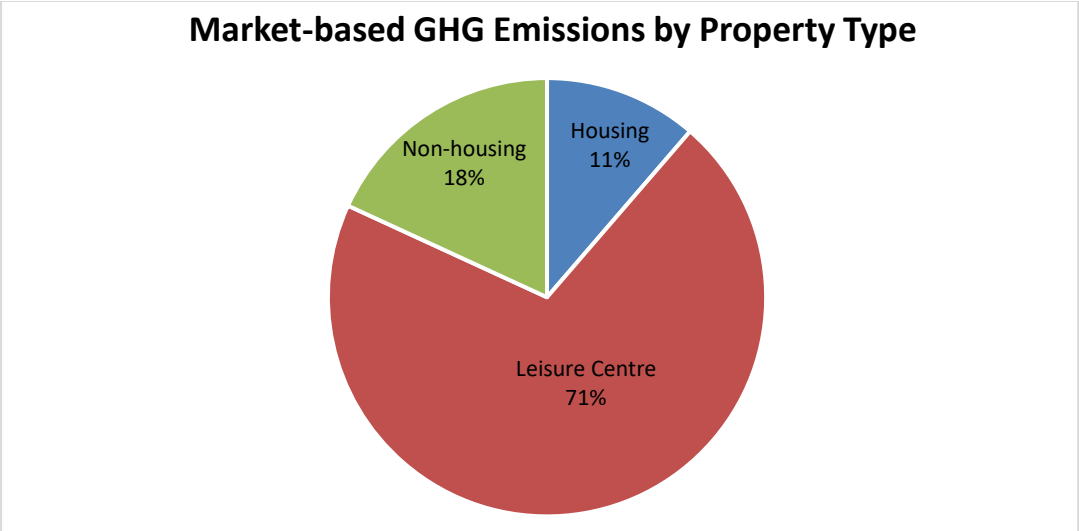

Figure 3: Breakdown of GHG emissions from energy use by property type

Table 4: Top 10 energy-using housing sites

Site: Housing	Electricity (kWh)	Gas (kWh)	Total kWh	Market-Based GHG Emissions (tCO_2e)
Chesil Lodge	136,162	514,796*	**650,958**	0.12
Whitewings House	60,543	239,158	**299,701**	43.74
Danemark Court	26,472	250,412	**276,884**	45.80
Makins Court Landlords Supply 2	79,955	123,863	**203,818**	22.65
Milford & Gordon Watson House	9,427	163,606*	**173,033**	0.04
Eastacre	13,638	138,122*	**151,760**	0.03
Milford & Gordon Watson House	9,427	88,563	**97,990**	16.20
Richard Moss House	54,030	-	**54,030**	0.00
Matilda Place	32,705	13,075	**45,780**	2.39
Brittany House	34,595	-	**34,595**	0.00
Total (top 10)	**456,953**	**1,531,595**	**1,988,548**	**130.97**
Total (all housing sites)	**770,087**	**1,608,503**	**2,378,590**	**131.78**

* Biogas RGGO certificates purchased.

Table 5: Top 10 energy-using non-housing sites

Site: Non-housing	Electricity (kWh)	Gas (kWh)	Total kWh	Market-Based GHG Emissions (tCO_2e)
Winchester Sports & Leisure Centre	1,509,722	4,385,720	**5,895,442**	802.15
GUILDHALL/CITY OFFICES	299,160	370,610*	**669,770**	0.09
Car Park Brooks	225,820	-	**225,820**	107.78
WEST WING / KINGS COURT	103,966	84,505*	**188,471**	0.02
Meadowside Leisure Centre	74,184	99,389	**173,573**	18.18
Car Park Tower Street	131,683	-	**131,683**	62.72
Car Park Chesil Multi Storey	127,879	-	**127,879**	0.00
The Square, 5 - 6	32,873	49,817	**82,690**	24.77
ABBEY HOUSE	6,339	74,873*	**81,212**	0.02
Cipher House	40,886	37,660*	**78,546**	0.01
Total (top 10)	**2,552,512**	**5,102,574**	**7,655,086**	**1,015.73**
Total (all non-housing sites)	**3,297,180**	**5,250,991**	**8,548,171**	**1,031.30**

* Biogas RGGO certificates purchased.

3.3. Emissions from contractors

The emissions associated with activities of contractors (ID Verde, Biffa & CTS Hire) accounts for 23% of total market-based emissions. This includes emissions from contractor car, van, and lorry travel as well as any other fuel use (Figure 4). ID Verde accounted for 69% of these emissions (348.08 tCO_2e), with Biffa accounting for 29% and CTS Hire with the remaining 2%. Biffa's significant reduction compared to the previous period is due to the switch to HVO fuel in June 2024 for its lorries.

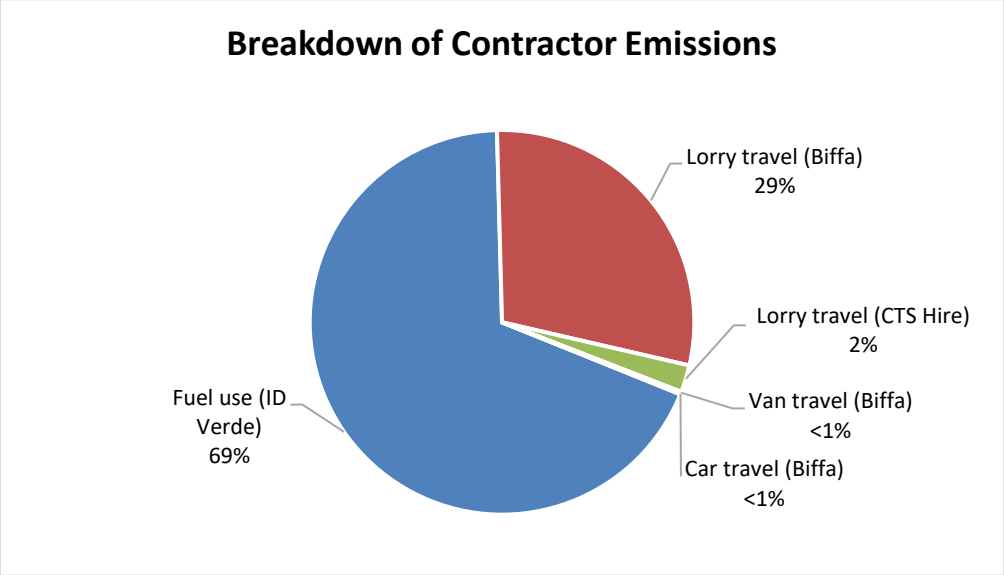

Figure 4: Breakdown of contractor emissions

3.4. Emissions from commuting

This year's commuting survey received a response rate of approximately 48%. The survey identified that commuting by car was still the most popular mode of travel (Figure 5). Only 5% of annual commuting mileage by car was with an electric vehicle (11% was with either an electric or hybrid vehicle). Commuting by bicycle or on foot accounted for 3% of annual commuting mileage.

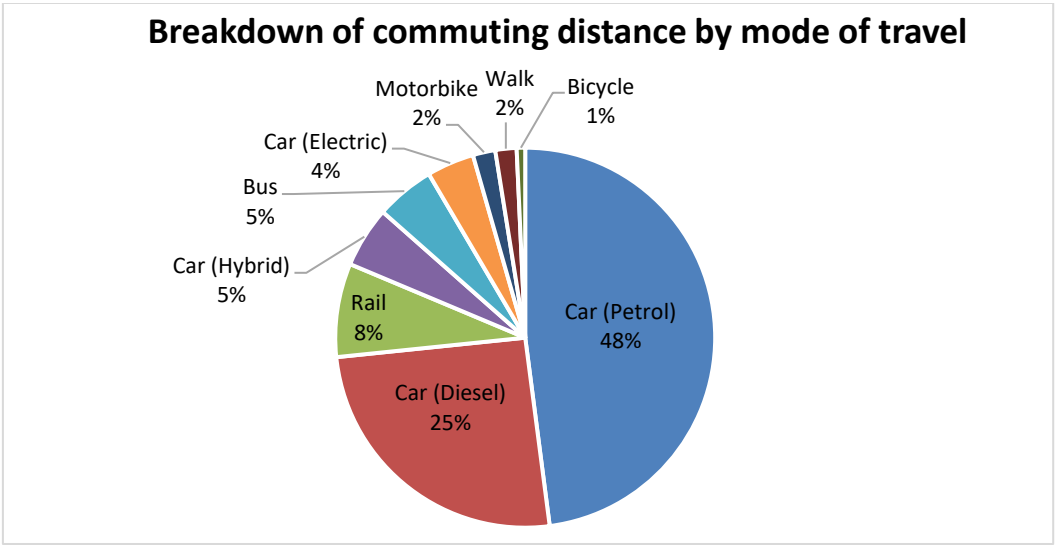

Figure 5: Breakdown of commuting distance by mode of travel

3.5. Solar Energy Generation

During 2024/25, the amount of electricity generated from various solar energy installations totalled **326,003 kWh**[4]. This is equivalent to the **avoidance of 73 tonnes CO_2e**.

The total electricity demand and proportion met by on-site solar generation was modelled for several sites (Table 7). However, the amount of energy exported was unknown, therefore the total demand may be over-estimated.

Due to a significant reduction in electricity consumption at City Offices, the proportion of electricity demand met by on-site solar increased from 8% last year to 11% this year (Table 6). The amount of electricity generated from on-site solar at Vaultex/Barfield 2 was 39% (21,000 kWh) lower than the previous year due to issues with the system.

Table 6: Electricity demand and solar generation at various WCC sites

Site name	Purchased grid electricity (kWh)	kWh generated by on-site solar	Estimated total electricity demand (kWh)	% met by on-site solar generation
Winchester Sport & Leisure Park	1,509,722	100,068	**1,609,790**	6%
City Offices	299,160	38,617	**337,777**	11%
Vaultex / Barfield 2	37,818	32,461	**70,279**	46%
Cipher House	40,886	6,239	**47,125**	13%

[4] Total excludes solar consumption from housing, which was previously included in this section.

4. Comparison, Publication, and Benchmarking

4.1. Comparison to base year & previous year emissions

Winchester City Council's base year is 2017/18. The 2023/24 period has been restated due to:

- Incorrect garden waste data had been provided.
- Tower Street Car park electricity data had been omitted.

The scope 1 & 2 GHG emissions have reduced by 96% since the base year and 86% since the previous year (Table 7). The main change being the purchase of biogas RGGO certificates. Significant reductions in scope 3 emissions have occurred due to the Biffa lorries and Park & Ride buses switching from diesel to HVO biofuel from June 2024 onwards (Table 8). Not only does this reduce GHG emissions, but it also improves local air quality.

Table 7: Historical comparison of WCC's market-based scope 1 & 2 GHG emissions

Scope	2017/18	2023/24	2024/25	% change base year	% change previous year
Scope 1	548.61	362.44	56.98	-89.6%	-84.3%
Scope 2	895.66	35.72	0.75	-99.9%	-97.9%
Total	**1,444.26**	**398.16**	**57.73**	**-96.0%**	**-85.5%**

Table 8: WCC's carbon footprint comparison and percentage change

Element	2017/18 Base year	2023/24	2024/25	% change on base year	% change on prev. year
Site gas **(location-based)***	1,003.59	1,380.88	1,254.60	25.0%	-9.1%
Site gas **(market-based)***	†	†	960.59	n/a	n/a
Site electricity* ***(Location-based)***	1,651.97	890.13	916.56	-44.5%	3.0%
Contractor emissions **(Market-based)** ***(Biffa, ID Verde, CTS Hire)***	†	†	509.24	n/a	n/a
Contractor emissions **(Location-based)** ***(Biffa, ID Verde, CTS Hire)***	998.15	1,093.38	508.36	-49.1%	-53.5%
Commuting	†	369.98	373.12	n/a	0.8%
Site electricity* ***(Market-based)***	1,716.25	796.59	202.48	-88.2%	-74.6%
Park & Ride Bus Service	386.42	298.66	53.32	-86.2%	-82.1%
Council-owned van travel	43.40	55.47	49.03	13.0%	-11.6%
Grey fleet travel **(Market-based)**	†	†	39.71	n/a	n/a
Grey fleet travel **(Location-based)**	56.34	42.71	39.52	-29.9%	-7.5%
Home-working	†	38.08	39.60	n/a	4.0%
Water (and wastewater)	4.59	14.36	13.36	191.1%	-7.0%
Council-owned car travel	22.65	3.25	4.35	-80.8%	33.8%
Waste	†	5.43	3.30	n/a	-39.2%
Other fuel use (petrol, LPG etc.)	0.60	4.47	3.23	438.3%	-27.7%
Other staff travel (bus, taxi, rail, flights)	7.43	0.74	0.75	-89.9%	1.4%
Refrigerants	11.69	0.00	0.00	-	-
Location-Based: Total Tonnes of CO_2e	**4,186.84**	**4,197.54**	**3,259.11**	**-22.2%**	**-22.4%**
- Tonnes of CO_2e per employee	**8.58**	**9.41**	**7.07**	**-17.6%**	**-24.9%**
- Tonnes of CO_2e per capita	**0.034**	**0.033**	**0.026**	**-25.1%**	**-22.4%**
Market-Based: Total Tonnes of CO_2e	**4,251.12**	**4,104.01**	**2,252.09**	**-47.0%**	**-45.1%**
- Tonnes of CO_2e per employee	**8.71**	**9.20**	**4.89**	**-43.9%**	**-46.9%**
- Tonnes of CO_2e per capita	**0.035**	**0.032**	**0.018**	**-49.1%**	**-45.1%**

* Includes: Council sites, energy recharged to tenants, and externally managed supplies (leisure centres, Brooks car park, and street lighting).

† Not assessed.

Note: 2018/19 to 2022/23 periods have not been included in the table as they are not comparable due to missing Tower Street car park data.

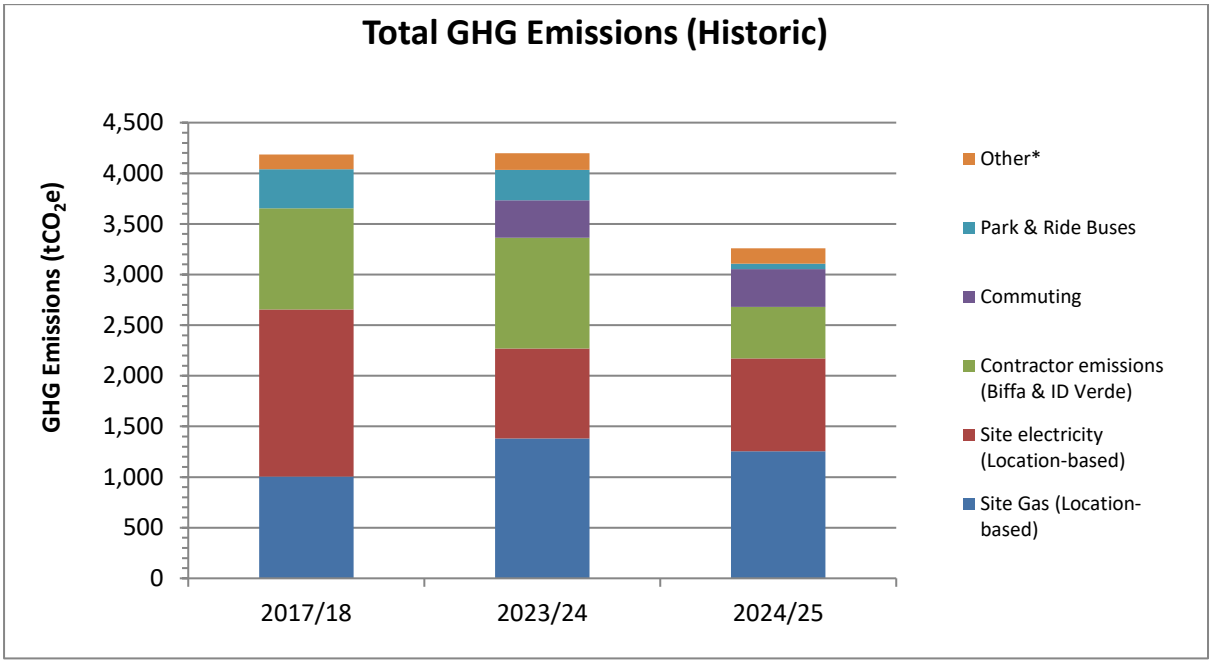

Figure 6: Detailed emissions comparison for the various aspects of WCC's Location-based emissions

*Other= Council-owned van travel, grey fleet travel, Council-owned car travel, home-working, waste, water, other fuel use, other staff travel (bus, taxi, rail, flights), and refrigerants.

Benchmarked against employee numbers and per capita the carbon emissions statistics show a decrease in both intensity metrics since 2017/18 and the previous assessment period.

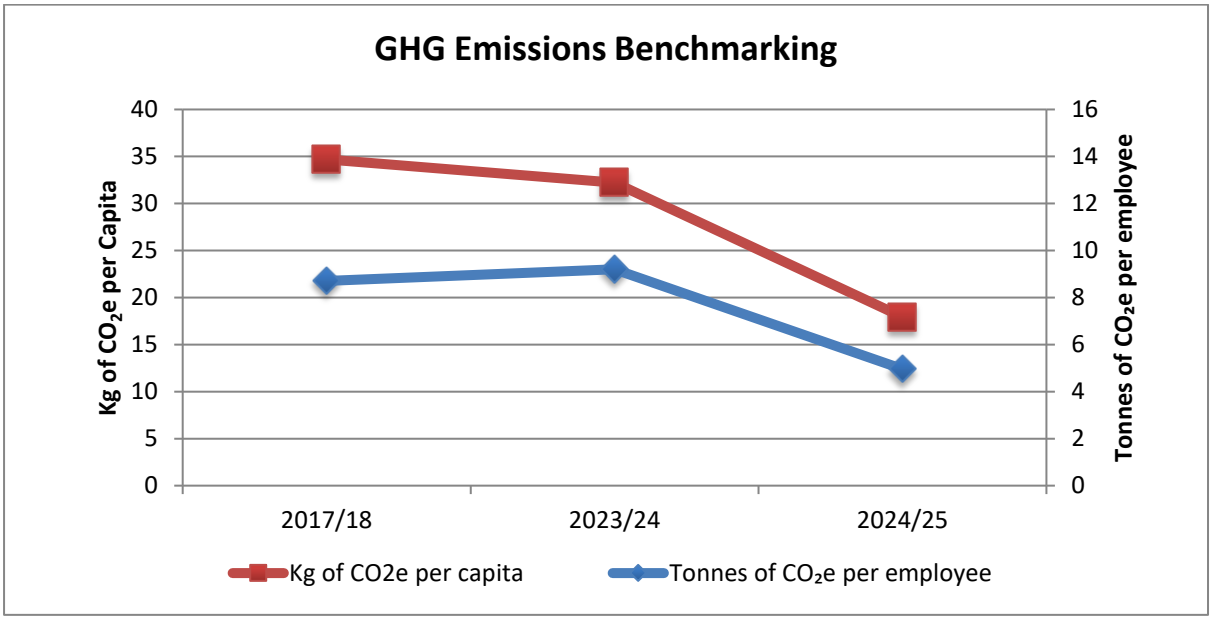

Figure 7: Carbon footprint of WCC for internal benchmarks

4.2. External Publication and Benchmarking of Your Carbon Footprint

We strongly encourage you now to **publish your carbon footprint results on Carbon Database Initiative (CaDI)** – our new global platform. Follow this link to grant us permission to publish your results automatically.

https://carbondi.com/

External publication demonstrates your commitment to carbon management and to responsible transparency. Your results will also be endorsed on CaDI as 'Verified' for additional peace of mind for you and viewers of the data.

Using CaDI, you can also search other organisations that have reported their emissions to benchmark your performance.

Many companies report Scope 1 & 2 emissions for comparison against others as elements included in Scope 3 can vary greatly. Table 9 summarises the emissions across these Scopes, along with metrics showing emissions per unit turnover and per employee, to help your benchmarking.

Table 9: WCC's benchmarked GHG emissions

Year/Element	Location-based	Market-based
Total number of employees	461	
Capita Population	127,444	
Tonnes of CO_2e	**3,259.11**	**2,252.09**
Tonnes of CO_2e per employee	**7.07**	**4.89**
Tonnes of CO_2e per Capita	**0.026**	**0.018**
Scope 1 & 2 Emissions		
Tonnes of CO_2e	**772.18**	**57.73**
Tonnes of CO_2e per employee	**1.68**	**0.13**
Tonnes of CO_2e per Capita	**0.0061**	**0.0005**

5. Conclusion

WCC, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint and has achieved an absolute 47% reduction on market-based emissions against the base year. WCC has also achieved a 96% reduction in its absolute scope 1&2 market-based emissions compared to the baseline year.

By achieving this WCC has qualified to use the Carbon Footprint Standard branding. This can be used on all marketing materials, including website and customer tender documents, to demonstrate your carbon management achievements.

6. Recommendations

6.1. Carbon & sustainability targets

6.1.1. Improving the accuracy of future carbon footprint assessments

The estimated overall error margin is +/- 7% (which represents +/- 146.52 tCO_2e of the total assessed emissions).

To improve the accuracy of future assessments, we recommend the following:

- Implement a monthly data and carbon tracking system, such as Carbon Footprint Ltd's Sustrax MX platform. This will allow more regular monitoring and progress tracking towards targets.
- Regularly monitor and analyse energy consumption data to ensure it is correct by the end of the data period.
- Obtain floor area data for sites which have only one gas meter and tenants/landlord have individual boilers (e.g. Danemark Court, Milford House, Gordon Watson House etc.) to allow more accurate apportionment.
- Install automatic meter readers on water meters. Until this is complete, ensure each water meter has had at least one actual reading taken per year.
- Aim to increase the response rate of the commuting and home-working survey to improve the accuracy of the data.
- Collect an evidence pack to submit alongside the data submission each year, containing bills, meter readings, fuel cards etc. for any material emission sources.

6.1.2 Expand the Scope of the Assessment

We recommend that the scope of the assessment is expanded in future to include the aspects that are identified as excluded or partially complete in Table 1. This will allow the Council to understand its full impact. For example, all tenants emissions should be assessed or estimated, including those that are directly billed by energy suppliers.

6.1.3 Target setting for net zero

WCC has set GHG reduction targets within its Carbon Neutrality Action Plan. This includes making its activities carbon neutral (via carbon offsetting) by 2024 and becoming a carbon neutral district by 2030.

As well as net zero targets based on GHG emissions, I recommend WCC sets reduction targets based on activity data (e.g. energy consumption in kWh, fuel consumption in litres, water usage, waste produced etc.).

Many organisations are now setting targets based on typical mid-term and longer terms goals to reach net zero (ISO's International Workshop Agreement on Net Zero Guidance - IWA 42:2022[5]):

- A 50% reduction in emissions per £M turnover/employee by 2030.
- A 90% reduction in emissions per £M turnover/employee by 2045.

All targets set should be reviewed regularly and amended accordingly (i.e. target increased if it is met ahead of schedule). A clear roadmap for individual emissions sources should be in place. This will ensure the strategy for reducing CO_2e emissions and tracking toward a net zero target is appropriate for the business.

A hyperlink to Carbon Footprint Ltd's whitepaper on target setting can be found below:
https://www.carbonfootprint.com/docs/2021_12_cfp_practical_target_setting_-_white_paper_v10.pdf.

6.2. Reducing emissions

To reduce GHG emissions, we recommend the following:

- Request managers of the leisure centres to acquire RGGOs for gas usage, to reduce scope 3 gas emissions.
- Acquire RGGOs for scope 3 sites, not already covered.
- Conduct an energy audit at Winchester Sport & Leisure Park to identify opportunities to improve energy efficiency and reduce any wastage. As a newly constructed site, the audit should focus on controls & settings (heating, air-conditioning, lighting etc.), policies and behaviours.
- Conduct energy audits at other highest gas-consuming sites (i.e. Chesil Lodge, Guildhall, Danemark Court, and Whitewings House). Focus on insulation, draughts, controls and settings.
- Investigate transitioning Council-owned sites from gas-powered heating to sustainable alternatives such as electric, hydrogen, solar thermal, and air-source heat pumps.
- Continue to encourage staff to use sustainable transport for business travel and commuting where able.
- Continue to encourage contractors and the park & ride operators to increase the percentage of HVO fuel used in their vehicles.
- Encourage contractors to transition to more sustainable fuels for use in tools or investigate electric alternatives.
- Continue to acquire electric vans for the council owned fleet, to phase out diesel vehicles.
- Request landlord of Brooks and Tower Street Car Park to switch to 100% renewable electricity tariff and provide evidence of this.
- Continue to encourage staff to avoid travel by having remote meetings where appropriate.
- Identify WCC's key suppliers and ensure they all have GHG reduction targets and plans in place.

[5] ISO - Net Zero Guidelines

6.3. Carbon offsetting

Carbon offsetting provides a practical solution for compensating for emissions that cannot be reduced by supporting projects that achieve an equivalent reduction in carbon dioxide elsewhere.

Global net-zero 2050 targets cannot be met solely through current reduction commitments. This is why the Voluntary Carbon Market exists and the reason why your support of carbon offset projects is vital to bridge the gap.

Projects are categorised as either 'reductions' or 'removals':

- **Reductions**: These projects aim to reduce emissions by preventing them from occurring in the first place. Examples include renewable energy projects and energy efficiency improvements.
- **Removals**: These projects focus on removing existing carbon dioxide from the atmosphere. Examples include afforestation, reforestation, and carbon capture and storage.

In addition, many projects place a strong emphasis on both social and environmental benefits (satisfying UN Sustainable Development Goals). It's essential to note that global net-zero targets cannot be met solely through emission reductions. Support from the voluntary carbon market through carbon offsets plays a crucial role in reaching these targets.

All Carbon Footprint's projects score highly across the key criteria of additionality, permanence, measurability, and leakage. Increasing numbers of projects are also gaining ICVCM CCP status, reflecting their high integrity.

You can view and compare the ratings of ca 2000 project on CRISP – CRISP – Carbon Ratings InSight Platform

A. Annex – Full GHG Emissions Breakdown

A full breakdown of WCC's emission sources is given below. This aligns with the GHG Protocol classification methodology and provides each associated emission source:

Scope	GHG Protocol Emission Category	Emission Source	Location-based (tCO_2e)	Market-based (tCO_2e)
1	On-site fuel use	Gas	294.38	0.37
		Diesel	2.82	2.82
		Petrol	0.31	0.31
		LPG	0.11	0.11
	Company owned vehicles	Council Owned Vans	49.03	49.03
		Council Owned Cars	4.35	4.35
	Fugitive emissions	Refrigerants	0.00	0.00
Scope 1 Total			**350.99**	**56.98**
2	Consumption of purchased electricity, heat steam & cooling	Electricity	421.19	0.75
Scope 2 Total			**421.19**	**0.75**
3.1	1. Purchased goods and services	Contractor Emissions - ID Verde (Diesel)	331.34	331.34
		Contractor Emissions – Biffa & CTS Lorries (Diesel)	149.28	149.28
		Contractor Emissions - ID Verde (Petrol)	16.73	16.73
		Contractor Emissions – Biffa Lorries (HVO)	9.75	9.75
		Water	2.69	2.69
		Contractor Emissions – Biffa Vans (EV)	0.69	1.32
		Contractor Emissions – Biffa Cars (Diesel)	0.32	0.32
		Contractor Emissions – Biffa Lorries (EV)	0.16	0.31
		Contractor Emissions – Biffa Cars (EV)	0.10	0.18
3.3	3. Fuel- and energy related activities	Transmission & Distribution	37.23	0.03
3.4	4. Upstream transportation and distribution	Park & Ride Buses (diesel)	49.79	49.79
		Park & Ride Buses (HVO)	3.53	3.53
3.5	5. Waste generated in operations	Waste	3.30	3.30
		Wastewater	3.08	3.08
3.6	6. Business travel	Grey Fleet (fuel)	39.24	39.24
		Rail	0.72	0.72
		Grey Fleet (EV charging)	0.20	0.39
		Grey Fleet (PHEV)	0.09	0.09
		Taxi	0.02	0.02
		Bus	0.01	0.01
3.7	7. Employee commuting	Commuting	373.12	373.12
		Home-working	39.60	39.60
3.8	8. Upstream leased assets	Upstream Leased Assets - Street lighting	10.62	14.81
		Upstream Leased Assets – Tower Street car park	29.67	62.72
3.13	13. Downstream leased assets	Managed Leisure Centres - Natural Gas	820.33	820.33
		Managed Leisure Centres - Electricity	356.93	0.00
		Tenant Emissions - Natural Gas	139.90	139.90
		Tenant Emissions – Electricity	60.92	124.18
		Managed Leisure Centres - Wastewater	4.06	4.06
		Managed Leisure Centres - Water	3.52	3.52
		Managed Leisure Centres - Refrigerants	0.00	0.00
Scope 3 Total			**2,486.93**	**2,194.36**
All	**Tonnes of CO_2e**		**3,259.11**	**2,252.09**
	Tonnes of CO_2e per employee		**7.07**	**4.89**
	Tonnes of CO_2e per capita		**0.026**	**0.018**
Outside of Scope Emissions			**1,226.63**	

B. Annex – Outside of Scope Emissions

The GHG Protocol specifies a distinct way of reporting carbon dioxide (CO_2) emissions from the combustion of biogenic materials (like biomass or biofuels). While the emissions of methane (CH_4) and nitrous oxide (N_2O) from burning this biomass *are* included in Scope 1, the biogenic CO_2 is not.

The rationale is that this carbon is part of a short-term biological cycle (i.e., the carbon was recently absorbed from the atmosphere by the plant) and reporting it alongside fossil fuel CO_2 could be misleading. Therefore, biogenic CO_2 is recorded and reported separately, but *outside* the main scopes.