

Worcestershire County Council Annual Greenhouse Gas (GHG) Emissions Report 2009-10 to 2022-23

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Please Note: This report supersedes previous GHG reports published by Worcestershire County Council. The reports includes minor data amendments from previous years to reflect the availability of more accurate data and reflects WCC's aims for continual improvement in this area.

Executive Summary

This report provides an update and supersedes previous reports published for 2010-11 through to 2021-22.

For the period from 2010 to 2018 it is not possible to accurately extract gas and electricity data for schools from corporate property data; for this reason the years 2010-2018 have been omitted from this report.

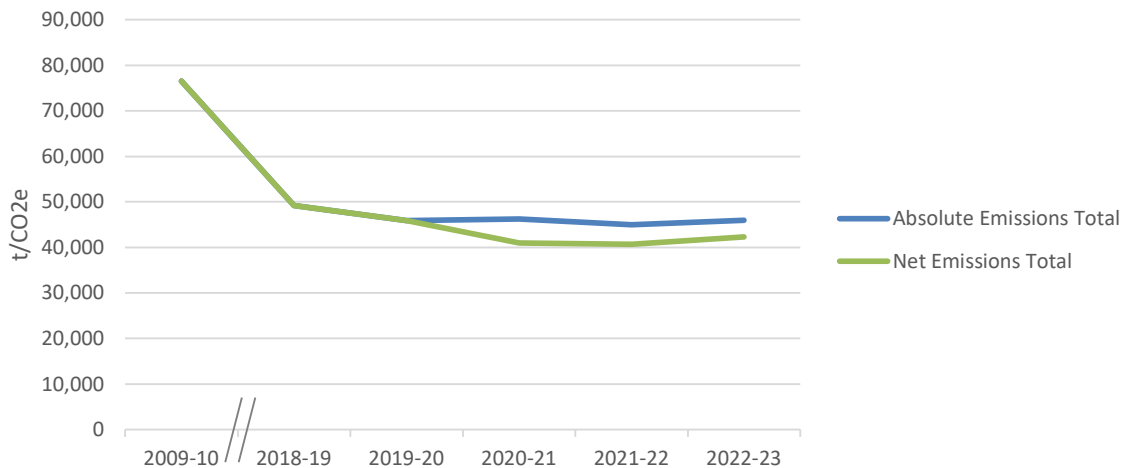


Fig 1: WCC Net GHG Emissions Reductions From Baseline Year

Reductions

- Since 2019-20, WCC have been able to offset through purchasing REGO accredited electricity.
- Streetlighting has seen a decrease in emissions of (21% from the previous year) that is attributed to upgrades in lighting schemes resulting in a 14% decrease in consumption of electricity.
- Gas use in corporate buildings reduced by 17% on the previous year due to an exceptionally mild winter and a reduced demand for space heating.
- Small savings were made in Fleet and Highways, where route optimization and more efficient vehicles contributed towards decreasing the quantity of fuel used.
- Continued reduction in use of residual fuels (gas oil, burning oil and wood chips) led to around 28% saving although emissions from these fuels account for only a very small proportion of the total.
- Municipal waste disposal saw a small reduction linked to a reduction in overall municipal waste at 0.9% on the previous year.

Increases

- Significant increases in demand for school transport plus improved data capture and recording has seen a 321% increase in emissions from contracted fleet, with over 380% increase in mileage.
- Increases in emissions were seen from electricity use in corporate buildings (5% on previous year), linked to increasing utilisation of buildings
- Increasing staff mileage (27% on previous year) was felt to be a natural return to pre-covid levels.
- The municipal waste disposal contractor increased consumption of electricity, mainly attributed to importing additional grid electricity during an extended outage at the EfW facility.

Worcestershire County Council's absolute annual emissions have decreased by **40%** when comparing with the Baseline year of 2009-10 reducing from 76,535 tCO₂e to 45,984 tCO₂e.

Worcestershire County Council's net emissions have decreased by **45%** from 76,535 tCO₂e to 42,365 tCO₂e.

For the period 2022-23, emissions from scope 1 & 2 account for just **12%** of total emissions for this period. For these emissions, the Council has achieved a net emissions reduction of **91%** since 2009/10.

Introduction

Purpose of this report

This is Worcestershire County Council's (WCC's) annual carbon footprint report for April 2009 to March 2023 inclusive. This report addresses the emissions that relate to the organisation and its services in this reporting period. It does not report on the emissions relating to Worcestershire as a whole.

WCC has been reporting its carbon emissions since 2010, and this report supersedes previous GHG reports. Adjustments have been made to reflect the availability of more accurate data. This report is published for transparency on the journey towards net zero and to acknowledge the work being done to reduce our emissions.

What we are measuring

Carbon emissions are sometimes referred to as a carbon footprint, which incorporates a number of gases that have a negative impact on our climate; collectively they are referred to as greenhouse gases (GHG's).

Carbon dioxide (CO₂) is the most abundant GHG but there are others including methane (CH₄), and Nitrous Oxide (N₂O). Tonnes of Carbon dioxide equivalent (tCO₂e) is the universal unit to signify the amount of CO₂ that would have the equivalent global warming potential.

Emissions for the reporting year are given as tCO₂e as well as the percentage movement from the baseline year¹.

Organisation Information

Worcestershire County Council is the county council for the county of Worcestershire. Address: County Hall, Spetchley Road, Worcester, WR5 2NP

Reporting Period

1 April 2009 - 31 March 2023

Baseline year

2009/10

Measures Reported

¹ All figures have been rounded up accordingly

WCC measure both Absolute and Net GHG emissions. Absolute emissions are the total aggregate of all WCC GHG emissions currently accounted for. Net emissions are the balance between the amount of GHG's produced and the amount of GHG's that have been removed from the atmosphere or offset by other WCC activities.

Targets

The Council's target is to achieve net zero GHG emissions by 2050 from baseline year.

Conversion factors

WCC uses the UK Government's conversion factors for the relevant years from: <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

Organisational Boundary

This report includes GHG emissions from the following sources:

Category	Sphere of Influence	Activity Creating Emissions
Scope 1	Direct emissions* <i>WCC are directly responsible for burning the fossil fuels that give rise to these emissions</i>	<ul style="list-style-type: none"> - Natural gas use in WCC buildings - Fuel use in WCC vehicle fleet - Residual fuel use (e.g., burning oil, LPG etc.) consumed at WCC sites
Scope 2	Indirect emissions* <i>WCC have responsibility for where we buy electricity and how much we buy</i>	<ul style="list-style-type: none"> - Electricity use in WCC buildings and street lighting (grid generation)
Scope 3	Indirect emissions <i>WCC can influence these emissions in how we procure and manage our services.</i>	<ul style="list-style-type: none"> - WCC staff business mileage and air travel - Electricity/gas use in buildings operated by Council's main outsourced contractors for waste management and highways - Fleet/staff mileage undertaken by main outsourced contractors for waste management and highways - Contracted fleet vehicle fuel use - Emissions from county-wide municipal waste disposal - Electricity (grid transmission and distribution)

Table 1: Scope of Emissions and Data Included in this Report

*Data is for WCC corporate sites only and does not include outputs from school buildings due to issues in recording accurate data from these sites

For the period from 2010 to 2018 it is not possible to extract gas and electricity data for schools from corporate property data. This inability to extract data means it is not possible to accurately provide comparable emissions data with the baseline year; for this reason, these years have been omitted from this report.

2009-10 to 2022-23 WCC Percentage of Absolute GHG Emissions split by Scope

Year	Annual Emissions by Scope		
	SCOPE 1	SCOPE 2	SCOPE 3
2009-10	6%	22%	72%
2018-19	5%	15%	80%
2019-20	5%	14%	81%
2020-21	5%	11%	83%
2021-22	5%	10%	85%
2022-23	4%	8%	88%

Table 2: Percentage of Annual Emissions by Scope

- Scope 1 emissions are under WCC direct control and can be controlled by reducing the use of fossil fuels to heat WCC building stock or to power WCC fleet vehicles.
- Scope 2 emissions arise indirectly from purchased grid electricity. This can be controlled by reducing demand of grid electricity and the percentage of these have shown a significant reduction from the baseline year.
- Scope 3 emissions are not directly under WCC control but WCC do have an influence, for example through purchasing decisions. The increase from 2021-22 to 2022-23 can be attributed to improvements in both data capture and increased service provision.

Absolute Emissions GHG Data from Baseline to 2022-23

The data table below highlights the GHG emissions data for WCC in tonnes of CO₂e broken down by year and scope². Figures have been rounded up accordingly.

WCC has realised a 40% reduction in absolute GHG emissions since 2009/10

There has been a significant reduction in GHG emissions under Scope 3 since the 2009/10 baseline in part due to the move from waste disposal via landfill, to energy from waste in the County.

Scope	Absolute Emissions t/CO ₂ e					
	2009-10	2018-19	2019-20	2020-21	2021-22	2022-23
1	4,598	2,669	2,467	2,480	2,300	2,008
2	16,672	7,304	6,459	5,273	4,286	3,619
3	55,267	39,256	37,017	38,497	38,405	40,357
Absolute Emissions Total t/CO₂e	76,536	49,228	45,943	46,250	44,992	45,984
Scope	Percentage change from Baseline Year					
	2009-10	2018-19	2019-20	2020-21	2021-22	2022-23
1	0	-42	-46	-46	-50	-56
2	0	-56	-61	-68	-74	-78
3	0	-29	-33	-30	-31	-27
Percentage change from baseline	0	-36	-40	-40	-41	-40

Table 3: Absolute Annual Emissions by Scope Including Percentage Movement from Baseline Year

WCC is working to improve data quality and availability across all scopes, and in particular looking to progress and widen Scope 3 emissions reporting where possible.

In 2022/23 Worcestershire County Council was responsible for absolute emissions of 45,984 tonnes of carbon dioxide equivalent (CO₂e), a full breakdown of scopes and sources can be found on the following page.

² Please note the data includes preliminary calculations on GHG emissions from municipal waste disposal in 2022/23 which are yet to be verified by the Environment Agency. For this reason, these figures may be subject to change. If there is an amendment the GHG report will be updated and re-issued.

2022-23 WCC Breakdown of Absolute GHG Emissions by Source

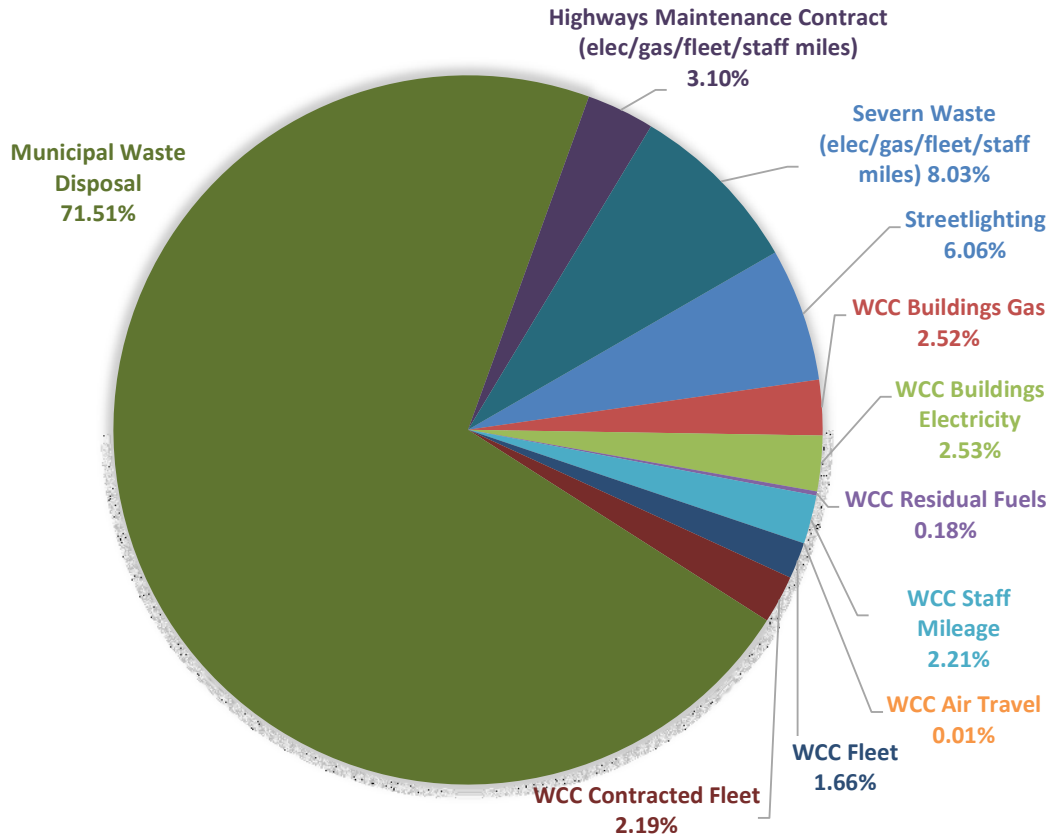


Figure 2: WCC Percentatge Breakdown of Emissions by Source

Net Emissions GHG Data from Baseline to 2022-23

The data table below highlights the GHG emissions data for WCC in tonnes of CO₂^e broken down by year and scope. Figures have been rounded up accordingly.

WCC has realised a 45% reduction in net GHG emissions since 2009/10

Since 2020 WCC has purchased REGO³ accredited green electricity for all corporate sites and street lighting. All scope 2 emissions associated with the generation of REGO accredited electricity can be classed as a net benefit, or carbon offset, for reportable purposes.

Scope	Net Emissions t/CO ₂ e					
	2009-10	2018-19	2019-20	2020-21	2021-22	2022-23
1	4,598	2,669	2,467	2,480	2,300	2,008
2	16,672	7,304	6,459	-	-	
3	55,267	39,256	37,017	38,497	38,405	40,357
Net Emissions Total t/CO₂e	76,536	49,228	45,943	40,977	40,705	42,365
Scope	Percentage change from Baseline Year					
1	0	-42	-46	-46	-50	-56
2	0	-56	-61	-100	-100	-100
3	0	-29	-33	-30	-31	-27
Percentage change from baseline	0	-36	-40	-46	-47	-45

Table 4: Net Annual Emissions by Scope Including Percentage Movement from Baseline Year

When accounting for scopes 1 and 2 alone, the Council has achieved a net emissions reduction of 91% since 2009/10.

Scope	Net GHG Emissions (tonnes/CO ₂ e)	Reduction (tonnes/CO ₂ e)	Reduction (tonnes/CO ₂ e)	Percentage Change (non- Degree Day corrected)
	2009/10	2022/23		
1	4,598	2,008	2,590	56%
2	16,672	0.00	16,672	100%
TOTAL	21,270	2,008	19,262	91%

Table 5: Movement from Baseline in Scope 1 & 2 emission for 2022-23

³ Renewable Energy of Guarantees of Origin

Full 2009/10 WCC GHG Emissions Data by Source and Scope

Category	Greenhouse Gas Emissions (Tonnes CO2e) 2022/23 - Absolute				% Change from baseline
	Scope 1 (Direct)	Scope 2 (Electricity Indirect)	Scope 3 (other indirect)	Total Absolute (Tonnes CO2e)	
CORPORATE BUILDINGS & UTILITIES					
WCC buildings - electricity		5,972	473	6,444	0%
WCC buildings - gas	2,935			2,935	0%
WCC buildings - residual fuels (e.g. oil, LPG, biomass)	327			327	0%
Street lighting		10,700	847	11,547	0%
TRANSPORT					
WCC Fleet Transport	1,335			1,335	0%
WCC Staff Mileage			2,885	2,885	0%
WCC Air Travel			1	1	0%
Fleet Contractors (transport)			2,459	2,459	0%
WASTE					
Municipal Waste Disposal			43,566	43,566	0%
Waste Contractors (transport, buildings)			2,296	2,296	0%
HIGHWAYS					
Highways Contractors (transport, buildings)			2,740	2,740	0%
TOTAL (ABSOLUTE) CO2e EMISSIONS:	4,598	16,672	55,267	76,536	-

Table 6: WCC Absolute and Net Emissions by Category 2009-10

Full 2022/23 WCC GHG Emissions Data by Source and Scope

Category	Greenhouse Gas Emissions (Tonnes CO2e) 2022/23 - Absolute					Greenhouse Gas Emissions (Tonnes CO2e) 2022/23 - Net				
	Scope 1 (Direct)	Scope 2 (Electricity Indirect)	Scope 3 (other indirect)	Total Absolute (Tonnes CO2e)	% Change from baseline	Scope 1 (Direct)	Scope 2 (Electricity Indirect)	Scope 3 (other indirect)	Total Net (Tonnes CO2e)	% Change from baseline
CORPORATE BUILDINGS & UTILITIES										
WCC buildings - electricity		1,064	97	1,161	-82%	-		97	97	-98%
WCC buildings - gas	1,161			1,161	-60%	1,161	-	-	1,161	-60%
WCC buildings - residual fuels (e.g. oil, LPG, biom)	85			85	-74%	85	-	-	85	-74%
Street lighting		2,555	234	2,789	-76%			234	234	-98%
TRANSPORT										
WCC Fleet Transport	762			762	-43%	762	-	-	762	-43%
WCC Staff Mileage			1,017	1,017	-65%	-	-	1,017	1,017	-65%
WCC Air Travel			5	5	320%	-	-	5	5	320%
Fleet Contractors (transport)			1,005	1,005	-59%	-	-	1,005	1,005	-59%
WASTE										
Municipal Waste Disposal			32,884	32,884	-25%	-	-	32,884	32,884	-25%
Waste Contractors (transport, buildings)			3,692	3,692	61%	-	-	3,692	3,692	61%
HIGHWAYS										
Highways Contractors (transport, buildings)			1,423	1,423	-48%	-	-	1,423	1,423	-48%
TOTAL CO2e EMISSIONS:	2,008	3,619	40,357	45,984	-40%	2,008	-	40,357	42,365	-45%

Table 7: WCC Absolute and Net Emissions by Category 2022-23