WELWYN HATFIELD

Report name: **2022/23 organisational GHG assessment**

Date prepared: **November 2023**

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1 BACKGROUND

1.1 Context

Welwyn Hatfield Borough Council (hereafter referred to as WHBC) offers a wide variety of public services including housing, waste collection, parks and open spaces, local COVID response, planning, leisure, funding, parking and business engagement to a population of approximately 119,00 (2021). During the reporting period, WHBC employed 355 full time equivalent staff across a number of buildings within the Borough.

It is a two tier authority; being part of Hertfordshire County Council.

In 2016 the UK signed the Paris agreement and committed to be net zero by 2050, as part of a worldwide bid to limit global warming to 2, preferably 1.5 degrees Celsius.

In 2019, WHBC declared a Climate Emergency, and over 75% of local authorities in the UK have also made this declaration.

As part of the Climate Emergency Declaration, WHBC made a number of key commitments;

- Reducing carbon emissions from our own estate and operations to net zero by 2030, or a justification for a later date if the review finds this unachievable.
- Comply with statutory obligations to mitigate and adapt to climate change.
- Support, encourage and engage residents, communities, businesses and other partners to reduce carbon emissions with the aim to be Net Zero as a borough by 2050.
- Embed climate change mitigation and adaptation into our plans, strategies and policies.
- Reduce carbon emissions across the borough by promoting energy efficiency measures, sustainable construction, renewable energy, sustainable transport and behavioural change.

WHBC also have a number of priorities realting to climate change as follow;

- Renew our commitments to be a net zero Council by 2030
- Step up climate change adaptation and mitigation measures
- Lead by Example and encourage others to make positive change
- Increase and promote biodiversity

2 METHODOLOGY

2.1 Context

A carbon footprint (often called a greenhouse gas assessment) quantifies greenhouse gases produced by an organisation's activities. A GHG assessment is an essential step in any path to net zero as it identifies emissions hotspots, allows reduction targets to be set and endorses consistent monitoring.

GHG assessments quantify the main Kyoto Protocol GHGs, where applicable, and are measured in terms of tonnes carbon dioxide equivalence (tCO_2e), where equivalence means having the same warming effect as CO_2 over a period of 100 years.

The GHG's included in assessments are as follows; Carbon dioxide (CO_2); Methane (CH_4); Nitrous oxide (N_2O); Hydro fluorocarbons (HFCs); Sulphur hexafluoride (SF_6) and Perfluorinated carbons (PFCs).

2.2 Approach

WHBC use an external company, TEAM Energy, to monitor all energy use across its portfolio. As part of the contract, Team Energy have been commissioned to complete the annual GHG assessment.

Primary organisational activity data (i.e. kWh's of electricity, gas and litres of fuel) and where necessary secondary data (i.e. expenses incurred for business travel) have been collected and provided to Team Energy.

Team Energy have quantified GHG emissions by applying the most relevant emission factors from the UK Government's published conversion factors for 2022 (Department for Energy Security and Net Zero).

Calculations have been reported in accordance with the "Greenhouse Gas Protocol - Corporate Accounting and Reporting Standard" (GHG Protocol, 2011) developed in partnership with the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI).

3 EMISSION BOUNDARY AND SCOPES

3.1 Reporting period and boundary

The reporting period covers the financial year 1st April 2022 and 31st March 2023 and reports emissions under WHBC's operational control.

3.2 Scope

The GHG Protocol breaks down emission sources into three distinct categories or 'scopes'.

Scope 1: Direct GHG emissions - Direct GHG emissions from activities owned or controlled by the Council. Examples of Scope 1 includes emissions from combustion in council owned or controlled boilers, furnaces, vehicles and F gases.

Scope 2: Indirect GHG emissions – Indirect GHG emissions associated with purchased electricity, heat, steam and cooling. These indirect emissions are a consequence of the Council's electricity use but occur at sources that the Council do not own or control. Examples include grid supplied electricity and heat provided through a heat network.

Scope 3: Other indirect GHG emissions – all other indirect emissions that are a consequence of the Council's actions that occur at sources the Council may not own or control. Examples of Scope 3 emissions include business travel by public transport or employee vehicles, disposing of the Council's own waste, purchased goods in the supply chain, employee commuting, upstream and downstream leased assets, upstream and downstream transport and distribution of mail and processing of sold product (for instance WHBC owned social housing developments).

Please refer to section 5 for details on what emission sources have been included and excluded.

4 GHG EMISSIONS

4.1 GHG emissions summary

Table 1 displays GHG emissions as a result of WHBC's organisational based activities during the financial year, 1st April 2022 – 31st March 2023.

An intensity ratio has been used based on the number of full-time equivalent staff.

Table 1: 2022/23 GHG Emissions Summary for Welwyn Hatfield Borough Council

Activity	GHG emissions (tCO_2e)	Sub-total (tCO_2e)
Scope 1 – Direct emissions		**751**
Mains gas	740.5	
Fleet vehicles	10.6	
Scope 2 – Indirect electricity emissions		**763**
Electricity	762.5	
Scope 3 – Other indirect emissions		**558**
T&D losses	69.7	
Business travel (personal car use, taxi, train, tube)	21.8	
Leisure sites, outsourced services and rented estates	463.2	
Total (location based)		**2,072**

*** Please note figures are rounded to the nearest full number, therefore rounding errors may apply.*

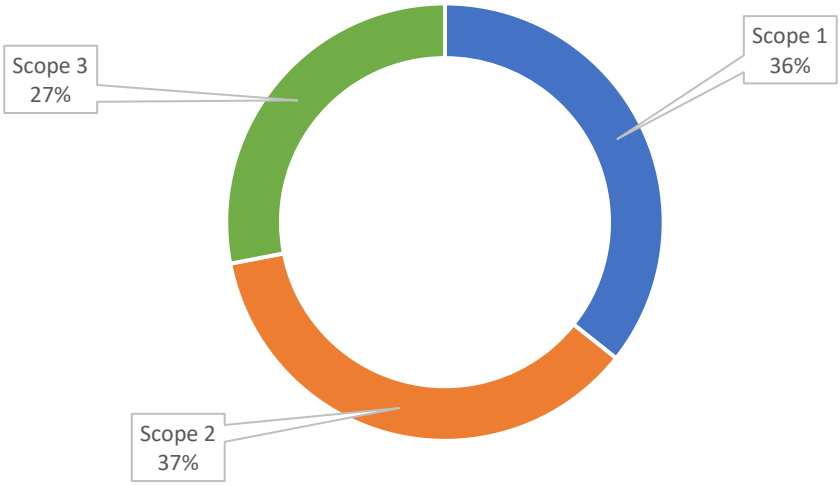
4.2 GHG emissions by scope

Table 2 and Figure 1 displays 2022/23 GHG emissions broken down by scope.

Table 2: 2022/23 GHG emissions by scope

Scope	2022-23 tCO2e	%
Scope 1	751	36
Scope 2	763	37
Scope 3	558	27
Total	**2,072**	**100**

Figure 1. 2022/23 GHG emissions by scope



Scope 2 (indirect) emissions make up the largest proportion of WHBC organisational carbon footprint (37%), followed very closely by scope 1 (direct) emissions (36%). The remaining 27% of the footprint comes from scope 3 (other indirect) emissions.

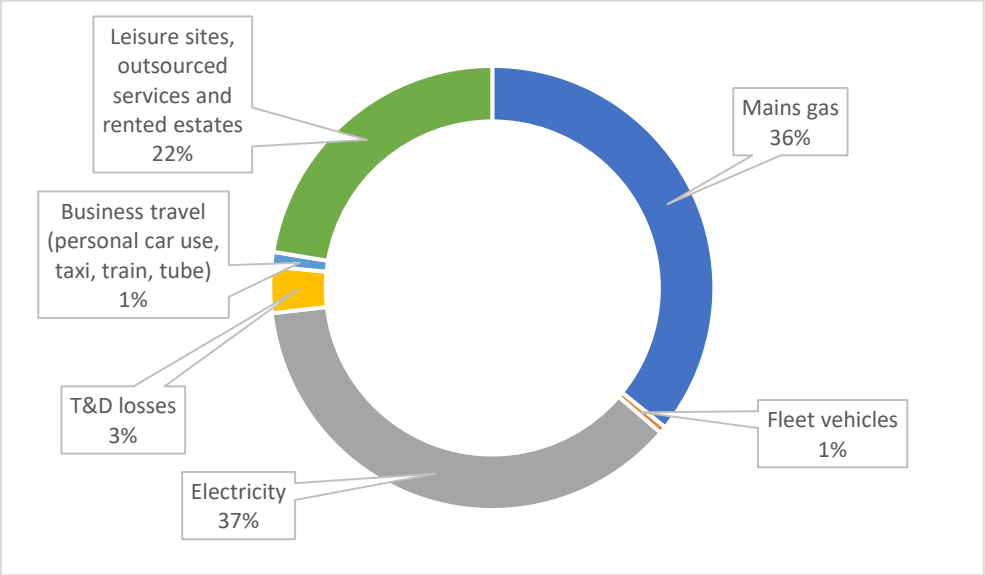
4.3 GHG emissions by source

Table 3 and Figure 2 present 2022/23 GHG GHG emissions by source.

Table 3: 2022/23 GHG emissions by source category

Emission source	GHG emissions (tCO_2e)	Sub-total (tCO_2e)
Built assets		
Mains gas	740.5	**1,573**
Electricity	762.5	
T&D losses	69.7	
Fleet vehicles		
5 owned and operated vehicles	10.6	**11**
Business Travel		
Personal car (grey fleet)	21.7	**22**
Taxi	0.06	
Tube	0.02	
Train	0.05	
Sites not directly managed by WHBC (Leisure sites, outsourced service, rented estates)		
Mains gas	70.3	**463**
Electricity	322.1	
Estates rented	15.1	
Outsourced activities	55.8	
Purchased paper		
Paper	3.3	**3**
Total		**2,072**

Figure 2. 2022/23 GHG emissions by source



Electricity is WHBC's largest emissions source (36%), followed by mains gas (36%), sites we do not directly manage (leisure sites/outsourced services and rented estates) (22%), transmission and distribution losses (3%) and business travel (1%) Purchased paper and company vehicles together account for 1% of of the carbon footprint.

4.5 Year on year comparison; 2019/20, 2020/21, 2021/22 and 2022/23

Table 4 and figures 3 and 4 demonstrate the year-on-year change from 2019/20, 2020/21, 2021/22 and 2022/23.

Table 4: Emissions year-on-year change.

Scope	2019-20	2020-21	2021-22	2022-23	% change from baseline	% change from previous year
Scope 1	698	792	610	751	+8	+23
Scope 2	829	651	322	763	-8	+137
Scope 3	980	557	473	558	-43	+18
Total	**2,507**	**2,000**	**1,405**	**2,072**	**-17**	**+48**
Emissions per household (tCo2e/house)	0.06	0.05	0.03	0.04	-33	+33
Emissions per turnover (tCO2e/£m)	17.9	14.3	10.2	13.6	-24	+33
Emissions per FTE (tCO2e/FTE)	7.3	5.8	4.0	5.8	-21	+18

Figure 3. Total emissions year-on-year change from 2019/20, 2020/21, 2021/22 and 2022/23

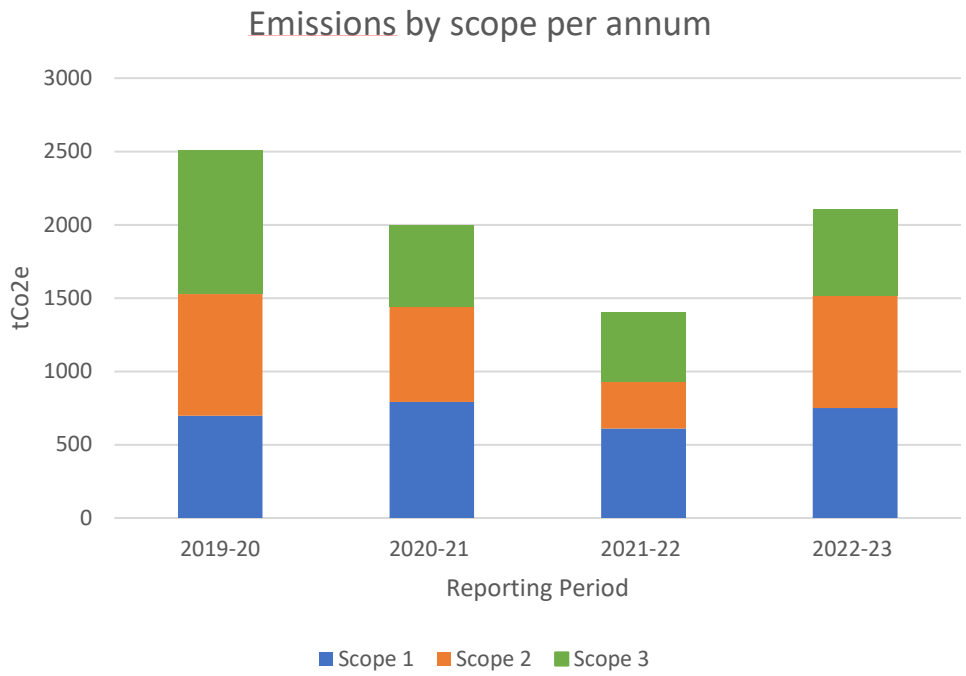
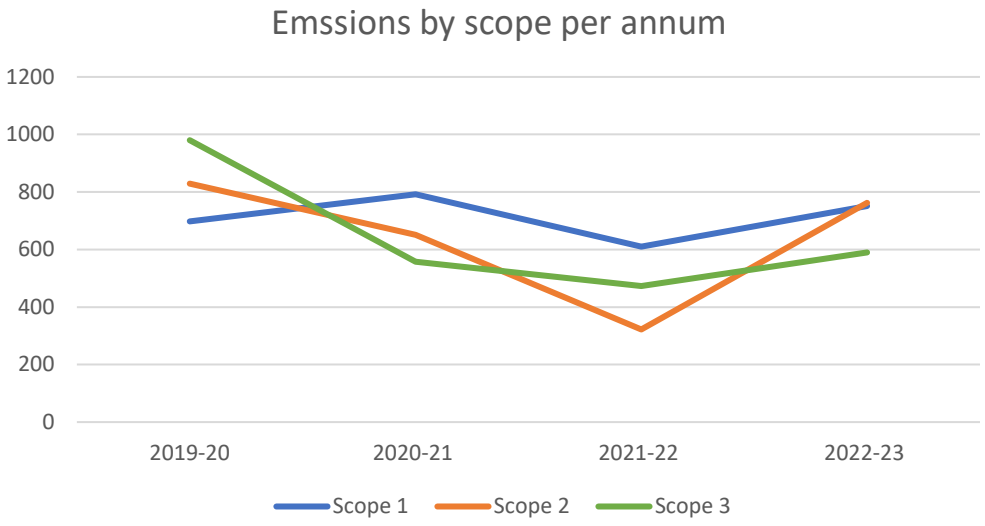


Figure 4. Emissions by scope per annum



4.6 Analysis of change from previous year (2021/22 to 2022/23)

Overall there has been a 50% increase in organisational emissions from 2021/22 to 2022/23.

There has been a 23% increase in scope 1 emissions, 137% increase in scope 2 emissions and an 18% increase in scope 3 emissions.

This is largely due to the impacts of COVID-19 which resulted in a number of buildings being closed or operating with heavily reduced staff in 2021/22.

4.7 Analysis of change from baseline year (2019/20 to 2022/23)

Overall, there has been a 17% decrease in emissions in 2022/23 from the baseline year of 2019/20.

Scope 1 increased by 8%, however scope 2 emissions decreased by 8% and scope 3 decreased by 43%. This is due to the continued decarbonisation of the national grid, and as a result of our decarbonisation work on the Hatfield swim centre.

5 EMISSION SOURCES – INCLUSIONS AND EXCLUSIONS

5.1 Inclusions

Only emission sources with full and accurate data have been included in this GHG assessment, and are as follows;

- Natural gas (in all buildings that WHBC pay the gas bill)
- Electricity (in all buildings that WHBC pay the electricity bill)
- Fleet Vehicles - all fuel purchased to run organisational vehicles
- Business travel, in personal cars, taxi, train and tube
- Purchased paper
- Transmission and Distribution losses from all purchased electricity (Managed sites)

5.2 Exclusions

Excluded emissions sources are as follows;

- Refrigerant gas losses as WHBC currently do not have robust data for this across all sites. WHBC are working on strengthening the data collection process and aim to include in future years.
- Well-To-Tank emissions.
- Purchased goods (aside from paper) as WHBC currently do not have robust data for this. WHBC are researching best practice methodologies to report emission associated with the supply chain.
- Operational waste, home working and staff commuting as we currently do not have robust data for this. WHBC are working on strengthening the data collection process and aim to include in future years.
- Social housing, WHBC owns over 10,000 social housing premises. Energy use in residential dwellings are out of the council's direct control and therefore these emissions are classed as scope 3. WHBC are endeavouring to create a comprehensive data collection process for this.
- Emissions associated with the waste collection vehicles. This service is outsourced to Urbaser and WHBC will look to include this data in future years.
- Schools within WHBC as they fall under the remit of Hertfordshire County Council.

Table 6 summarises the included and excluded emissions sources for the WHBC 2022/23 GHG assessment.

Table 6. Inclusions and exclusions of emission sources

Scope	Assets or activities included	Assets or activities excluded
1 - Direct emissions	Company owned vehicles	Refrigerant gases
	Mains gas (Community centres Corporate properties Hostels, Landlord supply social housing, Sheltered housing)	Fuel for backup generators
2 - Indirect emissions	Electricity	Electricity – streetlights
3 - Other indirect emissions	T and D losses (managed sites)	Staff commuting
	Mains gas and electricity (Leisure centres, outsourced services, rented estates)	Waste
		Home working
	Business travel (grey fleet, train, taxi, tube)	Well - to -tank
		Schools (as they are under HCC remit)
	Paper	Water supply and treatment
		Supply chain

5.3 Future emissions sources

Only emission sources with full and accurate data available have been taken into consideration. WHBC understands that the data collection process must be strengthened in order to include more emissions sources in the future.

WHBC are developing a methodology to allow the reporting of a number of additional scope 3 sources that WHBC hope to include in future assessments in order to reflect a more granular and robust assessment.

5.4 Assumptions

In line with the GHG Protocol, primary data has been used where available and the following assumptions have been applied;

- Expenditure taxi services was assumed at a rate of £12 per mile, (which is the average rate per mile or a taxi in London).
- Expenditure for rail travel was estimated based on the distance of a trip, the average ticket price and the miles the train travelled during the journey. The price per mile was then applied to the expenditure amount.

- Regarding underground tube travel, if the expenditure stated specific stations, the distance between the stations was used, if it wasn't clear then the same conversion method for over ground travel was used.
- Where electricity meter readings have not been manually recorded, service provider estimations have been used.

5.5 External assurance

The calculations were made by Team Energy, following the GHG protocol, and has been rewritten and formatted into this report.

5.6 Policy on data

WHBC reserve the right to re baseline if/when data collection processes are strengthened and more robust data becomes available.

6 BIBLIOGRAPHY

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