

Cambridge City Council Annual Greenhouse Gas Report 2022-23

Contents

Cambridge City Council	1
Annual Greenhouse Gas Report 2022-23	1
1. Introduction	1
2. Summary of Achievements	2
3. Cambridge City Council’s Greenhouse Gas Emissions	2
Table 1: Overall Greenhouse Gas Emissions for 2022/23.....	2
Table 2: Greenhouse Gas Emissions for 2022/23 – by Scope.....	2
4. General Organisation Information	3
5. Reporting Period	3
6. Significant Changes in Emissions	3
Table 3: 3 Year Average Emissions.....	3
7. Approach	5
8. Organisational Boundary	5
9. Operational Scopes	5
Table 4: Rationale for Inclusion and Exclusion of Emissions.....	5
10. Conversion/ Emissions Factors Used	6
11. Geographical Breakdown	7
12. Baseline Year	7
13. Base Year Recalculation Policy	7
14. Target	7
15. Intensity Measurement	8
16. External Assurance Statement	8
17. Carbon Offsets	8
18. Amount of Electricity Purchased for use or consumption in owned or controlled sources	8
19. Purchased Green Tariffs – Reduction in tonnes of CO₂e per year	8
20. Amount of Electricity Generated from Owned or Controlled Sources	9
Table 5: Electricity Generated from Council Owned Solar PV	9
21. Amount of Heat Generated from Owned or Controlled Sources	9

1. Introduction

Local authorities in England were requested by the Department of Energy and Climate Change (DECC), which has now become Department for Energy Security and Net Zero (DESNZ), to measure and publish their greenhouse gas (GHG) report, detailing the total gross greenhouse gas emissions from their own estate and operations, on an annual basis. In this report, we give details of Cambridge City Council's total gross greenhouse gas emissions for the financial year 1st April 2022 to 31st March 2023.

2. Summary of Achievements

The Council's total gross greenhouse gas emissions for the financial year 1st April 2022 to 31st March 2023 was 4,722 tonnes of carbon dioxide equivalent (tCO_{2e}). Emissions were 10% lower in 2022/23 than in 2021/22 (emissions total was 5,248 tCO_{2e}) and 41.3% lower than the 2014/15 baseline (emissions total was 8,041 tCO_{2e}) and so the emissions total is lower over the period by 3,319 tCO_{2e}.

The Council's new Carbon Management Plan 2021-2026 was adopted in March 2021 and set a target to reduce the Council's direct carbon emissions (from our corporate buildings, our vehicles and business travel) to net zero by 2030.

3. Cambridge City Council's Greenhouse Gas Emissions

GHG Emissions (tonnes CO _{2e})									
Scopes	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Scope 1	2,749	2,641	2,819	2,618	2,727	2,819	2,704	2,692	2,522
Scope 2	2,975	2,597	2,080	1,678	1,254	1,256	1,136	1,013	920
Scope 3	2,317	2,346	2,335	2,268	2,030	1,646	638	1,543	1,280
Total Gross Emissions	8,041	7,584	7,234	6,564	6,011	5,721	4,478	5,248	4,722
Intensity Measurement Tonnes of CO _{2e} per head of population ¹	0.0626	0.0579	0.0549	0.0525	0.0478	0.0452	0.0358	0.0360	0.0323
Carbon Offsets	-	-	-	-	-	-	-	-	-
Green Tariff	3,386	2,821	2,588	2,002	1,601	1,432	1,287	1,102	1,113
Total Net Emissions	4,655	4,763	4,646	4,562	4,410	4,289	3,191	4,146	3,609

GHG Emissions (tonnes CO _{2e})									
Scopes	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Scope 1									
Gas Consumption	1,540	1,637	1,544	1,303	1,347	1,478	1,438	1,392	1,288
Owned Transport	1,209	1,004	1,275	1,315	1,379	1,341	1,260	1,300	1,234
Process Emissions	-	-	-	-	-	-	-	-	-
Fugitive Emissions	-	-	-	-	-	-	6	0	0
Total Scope 1	2,749	2,641	2,819	2,618	2,727	2,819	2,704	2,692	2,522
Scope 2									
Purchased Electricity	2,975	2,597	2,080	1,678	1,254	1,256	1,136	1,013	920
Total Scope 2	2,975	2,597	2,080	1,678	1,254	1,256	1,136	1,013	920

¹ 2022 Admin-based population estimate (ABPE) of 146,200 used for 2022/23.

Scope 3									
Business Travel	52	57	59	62	61	64	34	41	52
Outsourced Activities Gas & Electricity	1,904	2,001	2,012	1,985	1,819	1,449	495	1,399	1,120
Transmission and distribution (T&D) losses	361	288	264	221	150	132	109	103	109
Employee Commuting	-	-	-	-	-	-	-	-	-
Waste Disposal	-	-	-	-	-	-	-	-	-
Total Scope 3	2,317	2,346	2,335	2,268	2,030	1,646	638	1,543	1,281
Total Gross Emissions	8,041	7,584	7,234	6,564	6,011	5,721	4,478	5,248	4,723

4. General Organisation Information

Cambridge City Council is a district authority and is responsible for providing a wide range of services to people who live within the City of Cambridge, to people who visit the City, and to businesses and other organisations based in Cambridge including housing, refuse and recycling collections, licensing, planning and building control, Council Tax collection, and environmental health services. It currently serves a population of 146,200²; has 42 elected Members; and employed 850 members of staff as of 31 March 2023. Further information on the Council can be found on the Council's [website](#) and within its [constitution](#), which sets out the responsibilities of the Council, its Members and its employees.

5. Reporting Period

1 April 2022 – 31 March 2023.

6. Significant Changes in Emissions

As detailed in Table 1, the Council's gross emissions for 2022/23 was 4,722 tonnes of carbon dioxide equivalent (tCO_{2e}) which is a reduction in emissions of 3,319 tCO_{2e} from the 2014/15 baseline when the emissions total was 8,041 tCO_{2e}. Our emissions have therefore reduced by 41.3% since the baseline year of 2014/15.

The average of the last 3 years' emissions totals (2020/21, 2021/22 and 2022/23) is 4,816 tCO_{2e}:

Table 3: 3 Year Average Emissions

Year	tCO _{2e}
2020/21	4,478
2021/22	5,248
2022/23	4,722
3 Year Average	4,816

² Based on the 'Admin-based population estimates (ABPE)' for 2022: www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/populationandmigrationstatisticstransformationcambridgecasestudy/2023

Last year's 3-year average figure was 5,403 tCO₂e, which has reduced in 2022/23 to 4,816 tCO₂e. This comparison of the average figure will reduce the impact of fluctuations in energy consumption due to factors such as a warm winter requiring less energy for heating and allow us to assess if the Council's emissions are reducing overall, over a longer time period.

This three-year average figure will be used to compare with next year's 3-year average figure which will be calculated when next year's 2023/24 emissions total is compiled.

During 2022/23 the Council completed the following carbon reduction projects as part of the Council's Carbon Management Plan 2021-2026, which will have contributed, in part, to the reduction in this year's emissions total, including:

- Parkside and Abbey Pools: Completion of £1.7m PSDS (Public Sector Decarbonisation Scheme) funded project to install air source heat pumps (ASHPs) and energy efficiency upgrades. The installation of ASHPs has resulted in increased electricity consumption at the outsourced leisure sites, and a reduction in gas.
- New Street Hostel: Installation of external wall insulation and replacement of communal lighting with LED lighting.
- Streetlighting: Replacement of remaining streetlamp columns and lanterns with LED units on Council housing land has been continuing.
- Communal lighting in blocks of flats: Replacement of communal lights within blocks of flats on Council housing estates with LED lamps and appropriate controls has been completed at 11 housing sites during 2022/23 and a further 3 sites will be completed in 2023/24.
- Greater Cambridge Shared Waste, (GCSW) a partnership between South Cambridgeshire District and Cambridge City Councils, is progressively replacing Refuse Collection Vehicles (RCV) with electric vehicles or low carbon alternatives at the point when they are due for replacement. There are currently 3 eRCVs in operation and a 4th eRCV is on order and is expected to be delivered towards the end of 2023/24.
- GCSW ran a trial in July and August 2022 to power 8 RCVs using hydrotreated vegetable oil (HVO) instead of diesel. The trial showed no detrimental effect on operational performance and resulted in at least a 90% reduction in carbon emissions when compared to running the same vehicles on diesel. Following the successful trial, the GCSW have been using HVO as a direct replacement for mineral diesel fuel in 10 of the fleet and further vehicles could be purchased which could be powered by HVO.

The Crematorium used less gas during 2022/23 than previous years as it carried out fewer cremations following an increase during Covid in 20/21 and since 2 new crematoriums opened up locally.

The Council is now able to include in its business mileage, the carbon emissions from train journeys, flights and hotel stays, as a result of a new booking system which records this data.

7. Approach

We have followed the [Government's guidance](#), published by Defra, on how to measure and report greenhouse gas emissions and the guidance in the [Greenhouse Gas Accounting Tool](#) developed for councils by Local Partnerships, working with the LGA.

8. Organisational Boundary

We have defined our organisational boundary following the Financial Control approach. Further detail on which operations or activities have been included within our organisational boundary for the purposes of compiling this greenhouse gas report is provided under 'Operational Scope' below.

9. Operational Scopes

We have measured our Scope 1 and Scope 2 emissions for all properties and vehicles that we fully own and control. Our reported Scope 1 and 2 emissions also include emissions from properties that we lease in from others, where the Council is delivering a service.

We have reported some of our Scope 3 emissions, depending on the availability of comprehensive and reliable data; and the extent to which Cambridge City Council has control over the operation/ activity in question. See the table below for details:

Table 4: Rationale for Inclusion and Exclusion of Emissions.

Source of Emissions	Emissions included in our reporting?	Explanation for specific emissions included or excluded from our reporting
Scope 1 (Direct)		
Gas consumption: in buildings we fully own, occupy and control	Yes	This includes our office buildings, community centres, sheltered and temporary housing and crematorium (our leisure centres, are included as Scope 3 emissions because they are Outsourced Activities).
Gas consumption: in buildings we own and lease out to others	Partially	We have only included emissions arising from energy used in the communal areas of some of the buildings that we lease out (energy used in communal areas is provided and paid for by the Council). We do not have access to data on energy used by our tenants.

Source of Emissions	Emissions included in our reporting?	Explanation for specific emissions included or excluded from our reporting
Gas consumption: in buildings we lease in from others	Yes	
Other fuel consumption (in owned transport) i.e. own fleet	Yes	Includes the Waste fleet vehicles managed by Greater Cambridge Shared Waste which operate predominantly in Cambridge.
Process emissions	No	Not relevant
Fugitive emissions (from air conditioning units)	Yes	Included for the first time in 2020/21.
Scope 2 (Energy Indirect)		
Purchased electricity: in buildings we fully own, occupy and control	Yes	This includes our office buildings, community centres, car parks, sheltered and temporary housing and crematorium (our leisure centres are included as Scope 3 emissions because they are Outsourced Activities).
Purchased electricity: in buildings we own and lease out to others	Partially	We have only included emissions arising from energy used in the communal areas of some of the buildings that we lease out (energy used in communal areas is provided and paid for by the Council). We do not have access to data on energy used by our tenants.
Purchased electricity: in buildings we lease in from others	Yes	
Scope 3 (Other Indirect)		
Purchased materials and fuels	No	Excluded due to time/ cost of data collection.
Business travel (business mileage, car club use, rail journeys and flights)	Yes	Rail journeys and flights Included for the first time in 2022/23.
Hotel stays	Yes	Included for the first time in 2022/23.
Commuter travel	No	Excluded due to time/ cost of data collection.
Waste disposal	No	Excluded due to time/ cost of data collection.
Water usage	No	Excluded due to time/ cost of data collection.
Outsourced activities	Partially	Included: Management of leisure sites & swimming pools ¹ ;

¹ We share management & maintenance responsibility for our leisure sites & swimming pools with the appointed contractor.

10. Conversion/ Emissions Factors Used

The emissions factors used to calculate the emissions in this Greenhouse Gas Report are those provided by Defra (Department for Environment Food & Rural Affairs) titled: 'UK Government GHG Conversion Factors for Company Reporting'

which is available at: www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021.

11. Geographical Breakdown

All of our operations and activities are carried out in the UK.

12. Baseline Year

Our baseline year is 1st April 2014 to 31st March 2015.

13. Base Year Recalculation Policy

In establishing our base year recalculation policy, we have closely followed advice given in the [Government's guidance](#) on how to measure and report greenhouse gas emissions.

Should the Council **in-source or acquire** a facility or emission source from another party, then we will recalculate our base year emissions provided that:

- The facility or emission source in question was operational during our base year (2014/15); *and*
- We had not accounted for the emissions from this facility or emission source when we first established our base year emissions; *and*
- The emissions from the in-sourced or acquired emission source equate to more than 1% of our original base year emissions.

Should the Council **outsource** a facility or emission source to another party, we will *not* recalculate our base year emissions but we will instead report the emissions arising from the outsourced facility or activity as part of our Scope 3 emissions, provided that:

- We are able to source comprehensive and accurate data on emissions arising from the facility/ activity from the party to which the facility/ activity has been outsourced; *and*
- The emissions from the outsourced facility or activity equate to more than 1% of our original base year emissions.

Should we discover errors in the energy and fuel consumption data that we used to calculate our base year emissions, we will recalculate our base year emissions using revised/ amended data in order to correct the errors.

In all other circumstances, we will not recalculate our base year emissions, unless this is specifically required or advised in relevant guidance.

14. Target

The Council's new Carbon Management Plan 2021-2026 was adopted in March 2021 and set a target to reduce the Council's direct carbon emissions (from our corporate buildings, our vehicles and business travel) to net zero by 2030.

15. Intensity Measurement

We have included an intensity ratio of 'tonnes of CO₂e per resident of Cambridge City', which for 2022/23 is based on the 'Admin-based population estimates (ABPE)' for 2022, because the Council exists to deliver services for the people of Cambridge City:

www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/populationandmigrationstatisticstransformationcambridgecasesudy/2023. The statistics that are usually used are from 'Population estimates for England and Wales: mid-2022' but had not been published at the time of this report: www.ons.gov.uk/releases/populationestimatesforenglandandwalesmid2022.

16. External Assurance Statement

In August 2015 the Building Energy Manager from the University of Cambridge assessed the approach and methodology we have followed when compiling this Greenhouse Gas Report and confirmed that our approach is robust and fit for purpose.

The Greater Cambridge Shared Internal Audit team have audited the process every year since, to ensure that the data used to compile this report is accurate in the form of an assessment of the data collection process and the carbon emissions calculations.

17. Carbon Offsets

We have not purchased any carbon credits.

18. Amount of Electricity Purchased for use or consumption in owned or controlled sources

6,265 MWh

19. Purchased Green Tariffs – Reduction in tonnes of CO₂e per year

From October 2016, the council signed up to Total Gas and Power's Pure Green energy tariff. The energy under the Pure Green Energy tariff comes from 100% renewable sources, which includes solar, wind and hydro/wave energy. This tariff is applied to all the council's electricity meters (except outsourced sites – other than Parkside Pool - which is included because its meters are on the council's energy contract).

The amount of CO₂ saved in 2022/23 as a result of the council's green tariff is 1,113 tonnes CO₂.

The GHG report only collates gross emissions (totals for Scope 1, Scope 2 and Scope 3) and so although we can report the amount of electricity we have used on a green tariff, the net emissions are not used.

20. Amount of Electricity Generated from Owned or Controlled Sources

In 2022/23 the Council owned or part-owned 13 solar photovoltaic (PV) systems which are 'on-site' at council owned buildings where it provides services:

Table 5: Electricity Generated from Council Owned Solar PV

Site	Generated in 2022/23 (kWh)	Exported 50% deemed (kWh)
1. Buchan Street Neighbourhood Centre	5,369	2,685
2. Brandon Court	20,179	10,540
3. New Street Hostel	0 (no data available)	0 (no data available)
4. Cherry Hinton Village Centre	19,499	9,750
5. Parkside Pool	59,729	29,865
6. Kings Hedges	10,078	5,039
7. Abbey Pool	24,399	12,200
8. Clay Farm	20,748	10,374
9. Crematorium	33,358	16,679
10. Whitefriars	14,943	7,471
11. Mandela House	25,831	12,916
12. The Guildhall	25,940	12,970
13. Waterbeach (50% owned by South Cambridgeshire District Council so figures are 50% of the total)	13,674	6,837
TOTAL:	273,747	137,326

Since none of the systems have export meters installed, it is not possible for us to include the amount of own generated renewable electricity exported to the grid in this GHG Report.

21. Amount of Heat Generated from Owned or Controlled Sources

During 2022/23 two solar thermal systems installed at Abbey Pool generated 2 kWhth (kilowatt hours of heat).

For further information about this report, please contact the Climate Change Officer on (01223) 457176 or email: sustainablecity@cambridge.gov.uk.