

Cambridge City Council Annual Greenhouse Gas Report 2018-19

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1. Introduction

Local authorities in England were requested by the Department of Energy and Climate Change (DECC), which has now become part of Department for Business, Energy & Industrial Strategy, 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 2018 to 31st March 2019.

2. Summary of Achievements

The Council's total gross greenhouse gas emissions for the financial year 1st April 2018 to 31st March 2019 was 6,011 tonnes of carbon dioxide equivalent (tCO₂e). This is a reduction in emissions of 2,030 tCO₂e from the 2014/15 baseline when the emissions total was 8,041 tCO₂e. Our emissions have therefore reduced a further 8.4% in 2018/19 from 2017/18 (emissions total was 6,564) and overall have reduced by 25.2% from the 2014/15 baseline.

The Council's Carbon Management Plan 2016-2021 was adopted in January 2016 and sets a target of reducing carbon emissions from the Council's estate and operations by 15% from 2014/15 levels by the end of 2020/21, with an aspiration to reduce emissions by 20% over this period. We will measure reductions in our energy usage and greenhouse gas emissions as a result of the activities detailed in the Carbon Management Plan against the 2014/15 baseline year emissions.

3. Cambridge City Council's Greenhouse Gas Emissions

Table 1: Overall Greenhouse Gas Emissions for 2018/19.

Scopes	GHG Emissions (tonnes CO ₂ e)				
	2014/15 (baseline year)	2015/16	2016/17	2017/18	2018/19
Scope 1	2,749	2,641	2,819	2,618	2,727
Scope 2	2,975	2,597	2,080	1,678	1,254
Scope 3	2,317	2,346	2,335	2,268	2,030
Total Gross Emissions	8,041	7,584	7,234	6,564	6,011
Intensity Measurement Tonnes of CO ₂ e per head of population ¹	0.0626	0.0579	0.0549	0.0525	0.0478
Carbon Offsets	-	-	-		
Green Tariff	3,386	2,821	2,588	2,002	1,601
Total Net Emissions	4,655	4,763	4,646	4,562	4,410

¹ Mid-year Population Estimate 2018 of 125,758 used for 2018/19.

Table 2: Greenhouse Gas Emissions for 2018/19 – by Scope.

Scopes	GHG Emissions (tonnes CO ₂ e)				
	2014/15 (baseline year)	2015/16	2016/17	2017/18	2018/19
Scope 1					
Gas Consumption	1,540	1,637	1,544	1,303	1,347
Owned Transport	1,209	1,004	1,275	1,315	1,379
Process Emissions	-	-	-	-	
Fugitive Emissions	-	-	-	-	
Total Scope 1	2,749	2,641	2,819	2,618	2,727
Scope 2					
Purchased Electricity	2,975	2,597	2,080	1,678	1,254
Total Scope 2	2,975	2,597	2,080	1,678	1,254
Scope 3					
Business Travel	52	57	59	62	61
Outsourced Activities Gas & Electricity	1,904	2,001	2,012	1,985	1,819
Transmission and distribution (T&D) losses	361	288	264	221	150
Employee Commuting	-	-	-	-	
Waste Disposal	-	-	-	-	
Total Scope 3	2,317	2,346	2,335	2,268	2,030
Total Gross Emissions	8,041	7,584	7,234	6,564	6,011

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 125,758²; has 42 elected Members; and employed 785 members of staff as at 31 March 2019. Further information on the Council can be found on the

² Based on Office for National Statistics 2018 Mid-Year Population Estimates released June 2019: www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/dataset/populationestimatesforukenglandandwalesscotlandandnorthernireland.

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 2018 – 31 March 2019.

6. Significant Changes in Emissions

As detailed in Table 1, the Council's gross emissions for 2018/19 was 6,011 tonnes of carbon dioxide equivalent (tCO₂e) which is a reduction in emissions of 2,030 tCO₂e from the 2014/15 baseline when the emissions total was 8,041 tCO₂e. Our emissions have therefore reduced by 25.2% since the baseline year of 2014/15, 2 years ahead of the council's aspiration to reduce emissions by 20% by 2020/21.

The average of the last 3 years' emissions totals (2016/17, 2017/18 and 2018/19) is 6,603 tCO₂e:

Table 3: 3 Year Average Emissions

Year	tCO ₂ e
2016/17	7,234
2017/18	6,564
2018/19	6,011
3 Year Average	6,603

Last year's 3 year average figure was 7,127 tCO₂e, which has reduced in 2018/19 to 6,603 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 2019/20 emissions total is compiled.

Carbon Management Plan Projects

4 energy reduction projects were delivered during 2017/18 as part of the Council's Carbon Management Plan 2016-2021, some of which were implemented part way through or towards the end of the 2017/18 financial year. The emission reductions from these projects will therefore be reflected in this year's 2018/19 emissions total:

- Abbey Leisure Complex: Solar thermal upgrade and upgrade of the hot water calorifiers has enabled more of the heat produced by the system to be utilised in the domestic hot water system in the centre, besides the heating of the swimming pool water – completed in July 2017.
- Abbey Leisure Complex: Upgrade and replacement of air handling unit with a new air plant circulation system and heat recovery technology will have significantly reduced gas and electricity consumption at the centre – completed in July 2017.

- School Court: The individual flat boilers were replaced by a communal boiler system which is much more energy efficient – completed in December 2017.
- Ditton Court: New heating and hot water boilers were fitted in each of the 27 flats. The communal areas are now heated by new, energy efficient domestic boilers – completed in July 2017.

The following carbon reduction projects were installed during 2018/19 and so will have contributed, in part, to the reduction in this year's emissions total:

- Mandela House: As part of a refurbishment of the building, the lighting was replaced with low energy LED light fittings and combined motion/ light sensors which turn the lights off when not required due to the light levels or occupancy.
- Mandela House: The building's boiler was upgraded to an energy efficient condensing boiler and pipework and valves were also insulated to reduce heat loss.
- Guildhall:
 - The lighting was replaced with low energy LED and motion sensors.
 - Replacement of roofing and additional insulation
 - Warm air heating system improvements (mechanical works to improve the efficiency of the heating and hot water system)
 - Building automation measures to increase the level of control over the heating systems, including installing a new Building Energy Management System (BEMS);
 - Insulation of pipework and valves in plant rooms to reduce heat loss;
 - Secondary glazing in those rooms which do not already have it.
- Abbey Leisure Complex: The astroturf floodlights were replaced with energy efficient LED lighting, new control gear and timers to further increase the savings.

As a result of the Council's Office Accommodation Strategy, a number of sites have been removed from the council's ownership and therefore the council's GHG emissions during 2017/18, including the closure of an admin building, a housing office and a large depot site with multiple, old buildings which has been re-located to a new, smaller site.

As the city's housing areas and population grows, new community centres have also been built and added to the council's GHG emissions calculations in 2017/18.

7. Approach

We have followed the [Government's guidance](#), published by Defra, on how to measure and report greenhouse gas emissions.

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 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, car parks, sheltered and temporary housing, Mill Road Depot and crematorium (our leisure centres, Corn Exchange and Parsons Court 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.
Gas consumption: in buildings we lease in from others	Yes	
Other fuel consumption (in owned transport)	Yes	
Process emissions	No	Not relevant
Fugitive emissions (from air conditioning units)	No	Excluded due to the time it would take to collect data.
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, Mill Road Depot and crematorium (our leisure centres, Corn Exchange and Parsons Court are included as Scope 3 emissions because they are Outsourced Activities).

Source of Emissions	Emissions included in our reporting?	Explanation for specific emissions excluded from our reporting
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	Yes	
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 ; Corn Exchange and Parsons Court – as managed by Cambridge Live.

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 BEIS (Department for Business, Energy & Industrial Strategy) and 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-2019

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

In the Council's Carbon Management Plan 2016-21 we have set a target of reducing carbon emissions from the Council's estate and operations by 15% from 2014/15 levels by the end of 2020/21 with an aspiration to reduce emissions by 20% over this period.

15. Intensity Measurement

We have included an intensity ratio of 'tonnes of CO₂e per resident of Cambridge City', which is based on mid-year population statistics, produced in June 2019, because the Council exists to deliver services for the people of Cambridge City. Full dataset:

www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalescotlandandnorthernireland.

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.

We have carried out our own internal checks 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 by a member of Greater Cambridge Shared Internal Audit team in July 2019.

17. Carbon Offsets

We have not purchased any carbon credits.

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

6,228 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 of the council's electricity meters (except outsourced sites – other than Parkside Pool, Corn Exchange and Parsons Court - which are included because they are on the council's energy contract).

The amount of CO₂ saved in 2018/19 as a result of the council's green tariff is 1,601 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 2018/19 the Council owned 5 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 2018/19 (kWh)	Exported 50% deemed (kWh)
1. Buchan Street Neighbourhood Centre	9,326	4,305
2. Brandon Court	23,202	11,321
3. New Street Hostel	765	393
4. Cherry Hinton Village Centre	10,850	5,425
TOTAL:	44,811	22,405

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 2018/19, two solar thermal systems installed at Abbey Pool generated 14,808 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.