

CAMBRIDGE CITY COUNCIL ANNUAL GREENHOUSE GAS REPORT 2016-17

1. Introduction

Local authorities in England are requested by the Department of Energy and Climate Change (DECC) 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 2016 to 31st March 2017.

2. Summary of Achievements

The Council's total gross greenhouse gas emissions for the financial year 1st April 2016 to 31st March 2017 was 7,234 tonnes of carbon dioxide equivalent (tCO₂e). This is a reduction in emissions of 807 tCO₂e from the 2014/15 baseline when the emissions total was 8,041 tCO₂e. Our emissions have therefore reduced a further 4.6% in 2016/17 from 2015/16 (emissions total was 7,584) and overall have reduced by 10% 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 2016/17.

| Scopes | GHG Emissions (tonnes CO ₂ e) | | |
|--|--|--------------|--------------|
| | 2014/15 (baseline year) | 2015/16 | 2016/17 |
| Scope 1 | 2,749 | 2,641 | 2,819 |
| Scope 2 | 2,975 | 2,597 | 2,080 |
| Scope 3 | 2,317 | 2,346 | 2,335 |
| Total Gross Emissions | 8,041 | 7,584 | 7,234 |
| Intensity Measurement Tonnes of CO ₂ e per head of population ¹ | 0.0626 | 0.0579 | 0.0549 |
| Carbon Offsets | - | - | - |
| Green Tariff | 3,386 | 2,821 | 2,588 |
| Total Net Emissions | 4,655 | 4,763 | 4,646 |

¹ Mid-year Population Estimate 2016 of 131,799 used for 2016/17.

Table 2: Greenhouse Gas Emissions for 2016/17 – by Scope.

| Scopes | GHG Emissions (tonnes CO ₂ e) | | |
|--|--|--------------|--------------|
| | 2014/15 (baseline year) | 2015/16 | 2016/17 |
| Scope 1 | | | |
| Gas Consumption | 1,540 | 1,637 | 1,544 |
| Owned Transport | 1,209 | 1,004 | 1,275 |
| Process Emissions | - | - | - |
| Fugitive Emissions | - | - | - |
| Total Scope 1 | 2,749 | 2,641 | 2,819 |
| Scope 2 | | | |
| Purchased Electricity | 2,975 | 2,597 | 2,080 |
| Total Scope 2 | 2,975 | 2,597 | 2,080 |
| Scope 3 | | | |
| Business Travel | 52 | 57 | 59 |
| Outsourced Activities | 1,904 | 2,001 | 2,012 |
| Transmission and distribution (T&D) losses | 361 | 288 | 264 |
| Employee Commuting | - | - | - |
| Waste Disposal | - | - | - |
| Total Scope 3 | 2,317 | 2,346 | 2,335 |
| Total Gross Emissions | 8,041 | 7,584 | 7,234 |

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 131,799²; has 42 elected Members; and employs 833 members of staff as at 31 March 2017 (68 waste collections staff have transferred to the Shared Waste Service). 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 2016 – 31 March 2017.

6. Significant changes in Emissions

As detailed in Table 1, the Council's gross emissions for 2016/17 was 7,234 tonnes of carbon dioxide equivalent (tCO₂e) which is a reduction in emissions of 807 tCO₂e from the 2014/15 baseline when the emissions total was 8,041 tCO₂e. Our emissions have therefore reduced by 10% since the baseline year of 2014/15.

² Based on Office for National Statistics 2016 Mid-Year Population Statistics released June 2017.

The average of the last 3 years' emissions totals (2014/15, 2015/16 and 2016/17) is 7,620 tCO₂e:

| Year | tCO ₂ e |
|----------------|--------------------------|
| 2014/15 | 8,041 tCO ₂ e |
| 2015/16 | 7,584 tCO ₂ e |
| 2016/17 | 7,234 tCO ₂ e |
| 3 Year Average | 7,620 tCO ₂ e |

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 2017/18 emissions total is compiled.

Last year's 3 year average figure was 7,866 tCO₂e, which has reduced in 16/17 to 7,620 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.

Carbon Management Plan Projects

As part of the Council's previous Carbon Management Plan 2011-2016, a further 12 projects were delivered in 2015/16, some of which were implemented towards the end of the 2015/16 financial year. The emission reductions from these projects will therefore be reflected in this year's 2016/17 emissions total:

- Solar photovoltaic (PV) panels were installed at Buchan Street Neighbourhood Centre to capture the sun's energy using photovoltaic cells, which convert the sunlight into electricity, which is used to run electrical appliances and lighting.
- At the Meadows and Ross Street Community Centres, the remaining boilers were replaced.
- The lighting at the Crematorium was replaced with LED lighting.
- Lighting sensors were installed at Whitefriars Sheltered Housing.
- Lighting sensors were installed, and communal lighting replaced with LED lighting at School Court Sheltered Housing.
- At Stanton House Sheltered Housing, communal lighting was replaced with LED lighting.
- Hallway lighting was replaced with LED lighting and the total number of lamps reduced in the entrance area at Orwell House Enterprise Centre.
- Alternative hot water provision was also provided at Orwell House.
- The air conditioning system at Mandela was upgraded to a more efficient system.
- The boiler was replaced at Abbey Pools.
- Cherry Hinton Village Centre's boiler was replaced.
- 20 fleet vehicles were replaced with vehicles with stop-start technology.

As part of the Council's new Carbon Management Plan 2016-2021, 3 projects were delivered in 2016/17:

- The lighting at the Grand Arcade and Grafton East car parks was replaced with low-energy LED lighting. Motion and light sensors were also installed to turn off the lighting when there is sufficient daylight or no recent movement

detected. These measures will result in an estimated 41% reduction in electricity consumption at Grand Arcade and 45% reduction at Grafton East. The 2 projects contribute 78% of the estimated carbon savings from the projects identified in the Carbon Management Plan for 2016/17.

- Loft insulation was installed at the Crematorium.
- The boilers were replaced at City Homes North with new energy efficient boilers.

A number of significant carbon reduction projects are in development for 2 of the Council's main office buildings, Mandela House and the Guildhall, to be installed in 2017/18.

Office Accommodation Strategy

During 2016-17 a number of Council buildings were vacated as part of the Council's Accommodation Strategy resulting in significant reductions in gas and electricity consumption for those buildings, and in some cases, an increase in energy consumption at buildings that staff were moved into:

- Mandela House's upper floors were vacated during 2016-17 ahead of major refurbishment works and staff moved to Hobson House and Mill Road Depot which has resulted in a significant reduction in gas and electricity consumption at the building and therefore carbon emissions.
- Mill Road Depot's garage service and refuse services were moved to Waterbeach resulting in a significant reduction in gas and electricity consumption following the closure of the garage. The energy consumption for Waterbeach increased as a result as Mill Road Depot staff and operations moved in.
- City Homes South offices were vacated resulting in a reduction in carbon emissions for this building during 2016-17. Staff were moved to City Homes North offices which recorded a small increase in gas consumption to City Homes North.

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:

| 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). |
| 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. |

| Source of Emissions | Emissions included in our reporting? | Explanation for specific emissions excluded from our reporting |
|---|--------------------------------------|---|
| 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 report this Greenhouse Gas report are those provided by Defra (Department for Environment Food & Rural Affairs) and are available at: www.ukconversionfactorscarbonsmart.co.uk.

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 2016, because the Council exists to deliver services for the people of Cambridge City.

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, which has included an assessment of the process by a member of the Council's Internal Audit team in July 2017.

17. Carbon Offsets

We have not purchased any carbon credits.

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

5,047 MWh

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

The Council purchased 100% green electricity (from renewable energy or good quality CHP) from Opus for all of the Council's larger sites along with one of the Council's Leisure sites, Parkside Pool, from April 2016 to September 2016. From October 2016, the council changed its electricity supplier to Total Gas and Power, and

signed up to their Pure Green energy tariff. This tariff has been applied to all of the council's electricity meters (except outsourced sites – other than Parkside Pool, Corn Exchange and Parsons Court). The energy under the Pure Green Energy tariff comes from 100% renewable sources, which includes solar, wind and hydro/wave energy.

The amount of CO₂ saved as a result of the council's green tariff has reduced from 2,821 tonnes CO₂ in 2015/16 to 2,588 tonnes CO₂ in 2016/17 because the amount of electricity used has reduced due to increased energy efficiency and lowered consumption.

DECC only collate 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 by DECC.

20. Amount of electricity generated from owned or controlled sources.

The Council owns 5 solar photovoltaic (PV) systems which are 'on-site' at council owned buildings where it provides services:

| Site | Generated in 2016/17 (kWh) | Exported 50% deemed (kWh) |
|---------------------------------------|----------------------------|---------------------------|
| 1. Buchan Street Neighbourhood Centre | 8,817 | 4,409 |
| 2. Brandon Court | 23,677 | 11,839 |
| 3. New Street Hostel | 24,617 | 12,309 |
| 4. Mill Road Store Yard | 3,858 | 1,929 |
| 5. Cherry Hinton Village Centre | 6,105 | 3,053 |
| TOTAL: | 45,511 | 22,756 |

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 2016/17, two solar thermal systems installed at Abbey Pool generated 47,105 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.