

Waverley Carbon and Greenhouse Gas Emissions Annual Report – 2013/14



Introduction

This report presents the latest greenhouse gas (GHG) emissions resulting from Waverley Borough Councils operations for the year 2013-2014 and efforts to reduce these emissions as requested by the Department for Energy and Climate Change (DECC).

The Government has required Local Authorities to report on their carbon dioxide (CO₂) emissions associated with their operations since 2008. In 2011 this requirement extended to report on other GHG's and now includes methane (CH₄) and nitrous oxide (N₂O). This basket of GHG emissions are reported as carbon dioxide equivalents (CO₂e).

Company Information

Waverley Borough Council served a population of 122,426¹ in 2013 -14 up from 118,500² in 2008-09. Residents are provided with a range of services including: waste and recycling collections, social housing provision with over 5000 properties available to residents in need of housing, leisure provision through 5 leisure centres with 4 swimming pools all owned by Waverley BC, and serves as the local planning authority.

These services are provided by 377 Full Time Equivalents (FTE's) employees in 2013 -14, compared with 444 FTE's in 2008-09, who work out of sites across the borough and contractors employed by Waverley Borough Council to provide specified services on its behalf.

Baseline year and reporting period

The baseline year used for the mandatory GHG report is the financial year 2008-2009; these data were originally collected for reporting under the Governments National Indicator N185. The baseline year will remain unchanged unless deemed necessary under the Baseline Recalculation Policy³.

The reporting period coincides with the financial year from 1st April to 31st March each year. This report includes the periods of 1st April 2008 to 31st March 2014. GHG emissions will be monitored against the baseline year on an annual basis and published.

Approach and operational scopes

Waverley has followed the Government's 'Guidance on how to measure and report greenhouse gases' as requested by DECC. This format follows the internationally recognised Greenhouse Gas protocol as recommended by Government for adoption by all local authorities and the private sector⁴.

¹ Office for National Statistics, Population Estimates for UK, 2013

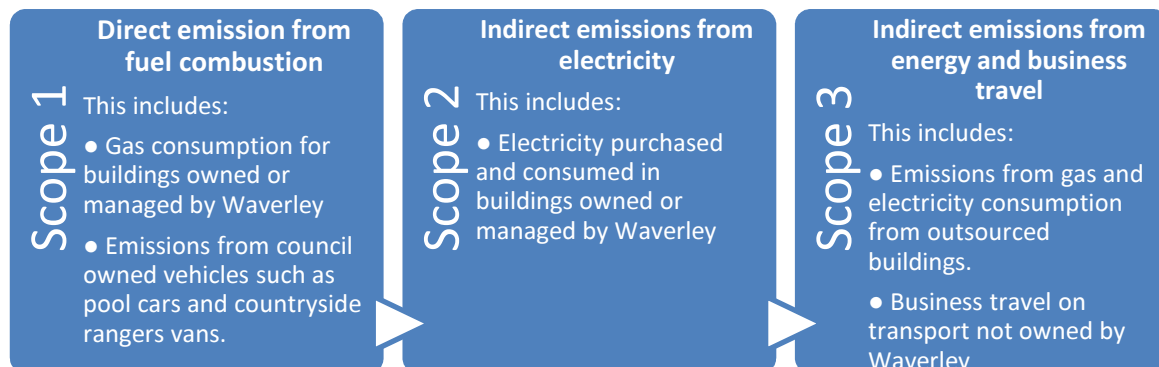
² Office for National Statistics, Population Estimates for UK, 2008

³ To request a copy of the Baseline Recalculation Policy please email sustainability@waverley.gov.uk

⁴ This approach is a different methodology to that used to monitor carbon emissions under the Carbon Management Plan.

An operational control approach has been adopted to determine the organisational boundaries and reportable sources of GHG emissions. This includes emissions due to energy use from non-domestic properties and transport.

Figure 1: Outline of scopes and included activities



Waverley has measured its direct and indirect emissions under Scope 1 and 2. Significant emissions arising from Scope 3 emissions sources have also been included. Figure 1 outlines the included scopes and reported activities.

An 'Outside of scopes' section has been included in this years report as advised by DEFRA's GHG conversion factors guidance notes. The outside of scopes section is used to account for direct emissions resulting from the burning of biomass and biofuels whilst maintaining a net emissions figure of '0' for emissions from these sources within the organisations 'Total net GHG emissions'.

Baseline GHG emissions

Figure 2 below gives an indication of Waverley's most significant emissions sources. The largest contributions come from outsourced services such as, the leisure centres (50%) and transport emission arising from contractors (23%), all are classified under Scope 3 emissions.

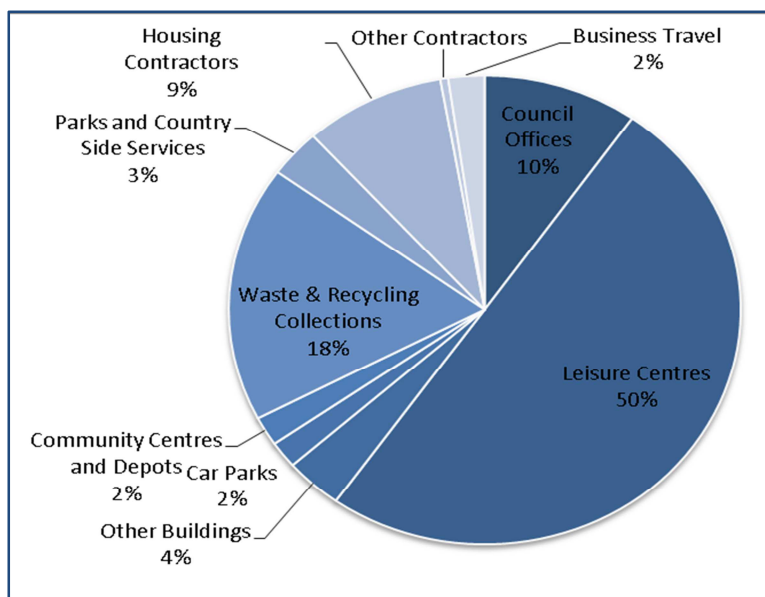


Figure 2: Baseline emissions by emissions source

Table 1 below shows a summary of the GHG emissions under each of the Scopes in terms of GHG emissions presented in tonnes of carbon dioxide equivalents (tCO₂e). Data are shown for the year 2009-10 to 2013-14 compared with the baseline year of 2008-09.

Annual GHG emissions

Results for 2013-14

The results for the year 2013-14 represent a 12.9% reduction in GHG emissions compared to the baseline year. Several factors have contributed to this reduction:

- Heating demand is generally considered proportional to weather conditions over the same time period. The UK weather has been mild over this reporting period; consequently the heating demand across Waverley's assets has reduced.
 - This is confirmed by a reduction in the degree day⁵ figures for 2013-14 with 3.9% fewer degree days compared to 2008-09 levels.
- Electricity demand has reduced from council owned and managed property. This has been caused in part by changes in operational control of properties resulting in a small number of properties no longer being reportable; but also energy efficiency improvements such as the installation of LED lighting.
- Additionally, improvements have been made in the collection of energy data across the corporate property portfolio to improve the accuracy of reporting. This will have affected the reported emissions due to electricity and heating demand across Scopes 1 and 2.

GHG emissions
During 2013-14 Waverley has reduced its greenhouse gas emissions by 12.9% since 2008.

Longitudinal progress

External factors such as the UK's weather patterns have affected the organisations energy consumption contributing to the 2% increase in emissions last year and the 12.9% reduction this year. However progress is being made towards reducing the organisations energy demand and associated GHG emissions.

Since the base line year in 2008-09 Waverley Borough Council has achieved:

- An average 6.7% reduction in annual GHG emissions compared to the baseline year.
- A reduction in GHG emissions intensity per FTE. This has fallen from 2.1 tCO₂e in 2008-09 to 1.9 tCO₂e in 2013-14.

⁵ Degree Days are a unit for estimating the energy demand for heating or cooling in relation to the outside temperature. The degree day figures were 2341 and 1763 respectively for 2012-13 and 2012-14.

Presenting Waverley's progress as an average percentage reduction better illustrates progress towards targets over time and accounts for fluctuations in energy consumption caused by variations in annual weather conditions.

Table 1: Annual GHG emissions

| | 2008-09 Base year | 2009-10 (tCO ₂ e) | 2010-11 (tCO ₂ e) | 2011-12 (tCO ₂ e) | 2012-13 (tCO ₂ e) | 2013-14 (tCO ₂ e) |
|--|----------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Scope 1 (direct emissions): Emissions from fuel usage in Council's owned, managed buildings and emissions from Council's owned vehicles | 257 | 249 | 267 | 216 | 249 | 214 |
| Scope 2 (energy indirect): Emissions resulting from electricity usage in Council's owned and managed buildings | 585 | 544 | 547 | 440 | 502 | 414 |
| Scope 3 (other indirect): Emissions resulting from energy consumption (<i>both electricity and fuel use</i>) in Council's outsourced properties and emissions resulting from business travel | 4,251 | 3,787 | 4,176 | 3,883 | 4,462 | 3,808 |
| Total annual gross emissions | 5,093 | 4,579 | 4,989 | 4,539 | 5,214 | 4,436 |
| Total annual net emissions | 5,093 | 4,579 | 4,989 | 4,539 | 5,214 | 4,436 |
| Total outside scopes: Emissions from use of biogenic materials e.g. Biofuels | - | - | - | - | 85,312 | 146,699 |

Council owned and managed sites – Scope 1 & 2 emissions

Across Council owned and operated sites 377 FTE staff provide the councils core functions and services, with the majority of staff based at The Burys, the main council offices. This site has seen consistent improvements in its energy performance, reaching an average GHG emissions reduction of 18% compared to the baseline year.

The introduction of energy efficiency technologies to the premises such as voltage optimisation and LED lighting have contributed to the reductions achieved. Additionally changes to staff working practices have been promoted through efficiency projects such as the Foresight and Office Maximisation projects. Examples of the changes made are the replacement of PC's with iGel thin client devices, the removal of appliances from the work place such as desk lamps and fans, and the introduction of teleconferencing facilities. Business mileage has also reduced.

25% reduction in GHG emissions from Council owned and managed sites.

Council Service Provision – Scope 3 emissions

The bulk of Waverley's emissions are due to the provision of services to local residents particularly waste collection and leisure services.

Waste & Recycling Collections: Emissions from the provision of waste and recycling collection services continue to contribute significantly to Waverley's GHG emissions, responsible for 22% of total emissions in 2013-14. This service has expanded significantly in recent years with the introduction of co-mingled recycling and now the addition of curb-side collections for green waste, with 1,764 tonnes of green waste collected this year and 8,000 households currently registered to the scheme.

10% reduction in GHG emissions from the Council's outsourced services.

These services are now provided to more people as the population of Waverley has increased since 2008-09 by 3,926¹. Despite the increase in service provision the GHG emissions intensity for the waste collection service has only seen a small increase. It rose to 8.1 kgCO₂e per capita in 2013-14 from 8.0 kgCO₂e in 2008-09.

Efforts are being made to reduce the GHG emissions arising from this service. Operational routes have been optimised to ensure the maximum quantity of waste is collected by each vehicle per trip. Drivers have also received a 'Driving efficiently and safely' programme to encourage safe, efficient driving practices. Two collection vehicles have trialled the use of biodiesel. The vehicles in this trial consumed 18,354 litres of biodiesel, emitting 24,673 kgCO₂e. This is 50% less emissions than an equivalent vehicle operating on diesel fuel.

Leisure Centres: These accounted for approximately half of Waverley's total GHG emissions in the baseline year. In 2013-14 the emissions associated with the energy demand of these centres totalled 2,146 tCO₂e, a reduction of 376 tCO₂e in absolute terms compared to the baseline year. This is equivalent to 15% reduction over 4 years.

15% reduction in GHG emissions from our leisure centres over 4 years.

Across each of the leisure centres there is a general trend towards reduced levels of GHG emissions, punctuated by increases during

2010-11 and 2012-13. These rises were caused by increased energy demand, possibly due to: the prevailing annual weather conditions, increases in building size and increased footfall.

These services are provided for use by local residents. As such the GHG emissions associated with these operations have been reported as GHG emissions per visitor. The greatest reductions in emissions per visitor (kgCO₂e/visitor) have been achieved at the Cranleigh Leisure Centre with a 45% reduction. Both the Edge and Haslemere have returned to emissions levels similar to pre 2012-13.

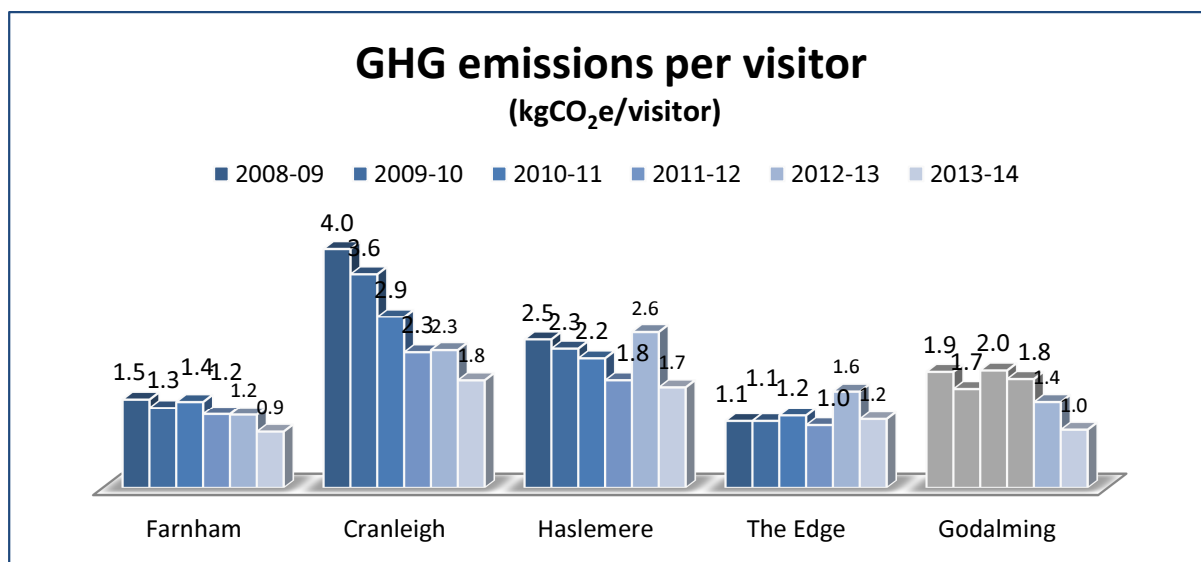


Figure 3: GHG emissions per visitor at Waverley leisure centres⁶

Data for the old and new Godalming leisure centre buildings are shown in Figure 3 above. The new building came online half way through the 2012-13 financial year and shows improved performance for GHG emissions per visitor.

Increasing visitor numbers contribute to the positive picture illustrated in Figure 3 above. However, the introduction of more detailed energy monitoring across each site has promoted a reduction in energy use and the new Godalming leisure centre has shown improved performance this year, contributing to the reduction in reported levels of GHG emissions. The improved performance at Godalming came from an overall more efficient building as well as increased output from the biomass boiler installed at the site.

Energy generation from renewable sources

Energy generated from renewable sources has been recorded. Two photovoltaic solar (P.V.) arrays and a biomass boiler are in operation, generating 4.5% of Waverley's total electricity and heating demand. Additional renewable installations are planned as part of the Haslemere leisure centre refurbishments in the coming year.

⁶ The Godalming leisure centre moved to new premises in 2012-13. The historical GHG emissions for the old premises are shown in grey, with the GHG emissions from the new site shown in blue in Figure 3.

Table 2: Total energy generation from renewables

| Renewables generation | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
|------------------------------|---------|---------|---------|---------|---------|---------|
| Biomass (kWh heat) | - | - | - | - | 244,447 | 451,459 |
| Solar P.V. (kWh electricity) | - | - | - | 883 | 7,541 | 18,295 |

Further opportunities for energy use and carbon reduction

This year has seen the roll out of the LED lighting programme throughout the main council offices (nearing completion) and to the council run car parks (now complete).

Under phase 2 of this project LED lighting has been installed in nine of the council's car parks. Each light has been equipped with a dimming device which reduces light output during early morning hours, further reducing energy demand but maintaining sufficient lighting for security purposes. The reductions in energy use and associated carbon emissions with these two projects will be seen in future reports.

Looking forward to 2014 -15, additional generational capacity is planned with the installation of a Combined Heat and Power unit and two additional solar P.V. arrays as part of the council's development plans. Waverley's Carbon Management Plan will be updated to cover the period 2015-2020 and will outline future energy use, GHG emission reduction targets, and potential projects to meet these targets. To prepare for this and ensure continued compliance within our GHG report, the potential need to recalculate the baseline year is being assessed.

For further information about the Council's sustainability programme please visit our web pages or contact us on 01483 523448, or by email at sustainability@waverley.gov.uk

