Harborough District Council Carbon Emissions Inventory

2014-2015

Summary

This report collates the equivalent carbon emissions due to Harborough District Council's use of energy for both its own services and those services commissioned by the council. The results are for the financial year 2014/2015.

The results are separated into three scopes. Scope 1 covers emissions due to the direct use of fossil fuels in the District's own buildings and operations, i.e. gas boilers or vehicles owned by the council. Scope 2 covers indirect emissions, i.e. electricity consumption. Scope 3 amalgamates emissions from other sources, including contracted services, such as waste and leisure centres.

The Council is committed to reducing energy costs and emissions and is engaged in an ongoing project to improve its own buildings. The Symington Building and the Market Hall in Market Harborough have both undergone refurbishment, which is expected to deliver significant savings. Contracted services such as waste and leisure also work hard to keep energy usage low. Waste Services have done regular driver monitoring and training and the leisure centres in Lutterworth and Market Harborough have both been fitted with energy saving equipment.

The emissions from each of the scopes is summarised in the table below. Fuller details of the emissions are covered in the following sections.

Scope of emissions	Tonnes Equivalent of CO_2 2014/2015	Tonnes Equivalent of CO_2 2013/2014	Baseline 2008
Scope 1 – Direct Emissions	128.63	206.3	227.86
Scope 2 – Indirect Emissions	263.96	195.2	419.17
Scope 3 – Other Indirect Emissions	2434.90	Missing data	Not comparable
Total Emissions	**2395.03**	**Missing data**	**Not Comparable**
Total Emissions excluding services contracted out	**392.59**	**483.4**	**647.03**

Table 1 Summary of Emissions

Scope 1 emissions are some 43.5% less than the equivalent emissions in 2008. Scope 2 emissions are 37% lower than in 2008.

Introduction

Harborough District Council covers an area of 238 square miles to the south and east of Leicester City. It is a largely rural area, with Market Harborough as the largest settlement. The population is around 85,000 (Census 2011), with around 27,000 concentrated in Market Harborough. Other major settlements include Lutterworth and Broughton Astley.

Harborough District Council's action on emissions

Harborough District Council is a signatory of Climate Local[1] and has adopted a Climate Local Action Plan (full council 28th July 2015) http://www.harborough.gov.uk/directory_record/1163/climate_change_action_plan. . An important part of this is an inventory of District controlled emissions: that is information on emissions from property and services run or owned by the council.

Harborough District Council are committed to having an effectively and efficiently run service. Controlling energy costs is a significant part of this. Following on from the refurbishment of the Council Offices and the Market Hall, opportunities to improve the efficiency of buildings are being pursued. The Council have approved the installation of photovoltaic cells on the south facing roof of the Market Hall, which will supply the electricity for the building and also provide an income, as well as reducing the emissions.

Compiling an Inventory

The UK government has encouraged Local Authorities to continue to report on their greenhouse gas emissions, despite of the removal of the NI185 indicator that previously called for this. The Government provide guidance on the format and methodology that should be used https://www.gov.uk/sharing-information-on-greenhouse-gas-emissions-from-local-authority-own-estate-and-operations-previously-ni-185. In addition they provide information to enable conversion of energy in kWh or fuel in litres to be converted. The information presented here has used these protocols and the conversion data available at, http://www.ukconversionfactorscarbonsmart.co.uk/

The Data is collected in three sections or scopes;

- Scope 1 relates to emissions due to the direct use of fuel, i.e. gas boilers, vehicle fuel use for council business.
- Scope 2 relates to electricity usage in buildings
- Scope 3 relates to all other emissions, including from contracted out services, business travel, electricity transmission.

[1] Climate Local is a framework for local authority action on climate change under the auspices of the Local Government Association.

Harborough District Council has collated emissions information in earlier years, with 2008 as the earliest year. However, the methodology has changed and the estate has also changed. 2008 is used as a base year for Scope 1 and 2 reporting. Scope 3 is not comparable. Full data for all 3 scopes is available for 2013/2014.

Direct Emissions from Council Services (Scope 1)

Direct emissions from the council estate, in the financial year 2014/15, amount to around 128.63 Tonnes equivalent of CO_2. These emissions arise from gas boilers in seven buildings and also a small contribution from travel around the district by parking attendants (this figure is estimated).

The figures for the Symington Building are the first following the refurbishment. The building has become more heavily used as the year has gone on. There are also three retail units, but the emission from these are recharged, so not included. Leicestershire County Council and other partners, including the library and the museum do not have their electricity and gas directly monitored, so these emissions are included within the inventory. Emissions have decreased from 2013/14 following the replacement of the boiler.

The Market Hall also reopened and is now in use six days a week, rather than three, but emissions have decreased. This is in part due to the fact that some of the heating boilers are not fully functioning. They are due for replacement soon.

The office in Lutterworth has been sold and so is no longer included.

Harborough District Council Site	**Gas Consumption (kWh)**	**Emissions (Tonnes equivalent CO_2) 2014/2015**	**Emissions (Tonnes equivalent CO_2) 2013/2014**
Council Offices, Adam & Eve Street	274,575	50.79	78.9
Market Hall	306,359	56.67	84.6
Resource Centre, Doddridge Rd	40,245	7.44	8.1
Settling rooms	22,599	4.18	4.6
Park Nursery	22,002	4.07	4.3
26, Hill Court, Bushby	12,732	2.36	N/A
Total		125.51	180.5

Table 2 Scope 1 Emissions for Council Buildings

Parking attendants transport contribution is 3.12 Tonnes equivalent of CO_2.

Emissions due to gas usage in Harborough District Council's buildings continue to drop, as more efficient boilers are fitted. The reduction in emission from the baseline year of 2008 is 43.5%. Both the Council Offices and the Market Hall have seen reductions following the refurbishment, in spite of higher usage of the buildings.

Indirect Emissions from Council Services (Scope 2)

Contributions to indirect emissions come from the use of electricity across the council estate. Harborough District Council purchases a 100% renewable energy product, via ESPO. However, this tariff is not recognised as zero CO_2 for the purposes of this inventory.

Harborough District Council has agreed that photovoltaic cells will be installed on the Market Hall. The installation will take place in summer 2015. This will significantly reduce the electricity use in the Market Hall and provide an income stream. Electricity consumption figures come from 12 sites. The total emissions equate to 263.96 Tonnes CO_{2e}.

The emissions due to the electricity usage in buildings have shown an increase particularly in the figures for the Council Offices and the Market Hall. The Market Hall is now in use 6 days a week and has a much higher occupancy following the refurbishment. This has led to an increase in electricity for refrigeration and lighting. The Market Hall achieved a DECC rating of F. This is significantly below the typical ratings for similar buildings. Photovoltaic panels to generate electricity are due to be installed in summer 2015, which will reduce electricity costs and emissions. Other energy efficiency works are also in planning.

The Council office was unoccupied for most of 2013/14, so the increase in electricity usage is easy to understand. The building is now fully occupied, with banks of computers, lighting and some air-conditioned areas. The building achieved a DECC rating of D for the first year of operation, which is slightly better than a typical building. Opportunities for staff awareness campaigns are being considered to maintain an energy efficient building.

Emissions have reduced by 37% from the 2008 baseline.

Harborough District Council Site	Electricity Consumption (kWh)	Emissions (Tonnes equivalent CO_2) 2014/2015	Emissions (Tonnes equivalent CO_2) 2013/2014
Public Conveniences, Common Car Park	14123.00	6.92	5.1
Settling Office	8529.00	4.18	6.3
Council Offices, Adam & Eve Street,	183053.26	89.74	51.3
26 Hill Court, Bushby	2038.00	1.00	2
Pumping Station, Northampton Road	13402.00	6.57	6.8
Welland Park Rest Room	4750.00	2.33	2.3
Public Conveniences, Recreation Ground	4902.00	2.40	2.8
Cemetery Chapel	5067.00	2.48	4.6
Welland Park Café	20851.00	10.22	9.7
Symington Sports Pavilion	4803.00	2.35	3.9
Welland Park Bowl Pavilion,	1326.00	0.65	0.1
Market Hall	275599.90	135.11	99.6
Total		263.63	194.5

Table 3 Scope 2 Emissions from Council Buildings

Emissions from Contracted Council Services (Scope 3)

Harborough District Council, in common with many Local Authorities, has contracted out waste and leisure services. These services generally have their own standards for reducing emissions, for example; the waste contractor has a fuel monitoring system and drivers undergo fuel efficiency training. The leisure centres are big users of energy, with swimming pools and large halls to heat, but the contractor has introduced variable drives to reduce consumption. Harborough Innovation Centre operates as an incubator for new small businesses; it was designed as a low energy building, including a biomass boiler.

Harborough District Council business mileage is only available via the expenses system. This provides simplified data, with no information on car size or fuel type. All figures here have been derived using an average petrol car. The total mileage claimed for business use accounts for 33.11 Tonnes equivalent of CO_2. This has reduced significantly because the majority of staff have now relocated back to the Council Offices. It is not possible to obtain information about business journeys taken by public transport, so this is not included.

There are a range of services that contribute to the overall carbon emissions through vehicles. The largest of these is the waste contractor. However, there are also other services including dog and pest warden and the rapid response team. Total emissions from contractors transport fuel use are 975.53 Tonnes CO_{2e}

Contractor Service area	Fuel (Litres)	Emissions (Tonnes equivalent CO_2)
Waste collection	356000.9	926.4567422
Rapid response team	3780	9.837072
Dog warden	2040	5.308896
Pest control	2040	5.308896
Grounds maintenance	N/A	N/A

Table 4 Scope 3 Emissions from Vehicle Operations

There are two leisure centres, both with pools, in the district. One is in Market Harborough and the other in Lutterworth. The total emissions from both gas and electricity consumption are 902.44 Tonnes equivalent of CO_2. The electricity consumption of Harborough Leisure Centre is close to the good practice benchmark identified by the Carbon Trust (it has a DEC rating of C) http://www.carbontrust.com/media/39352/ctv006_sports_and_leisure_sector_overview.pdf.

Lutterworth Leisure Centre figures are closer to typical, with a DEC rating of E.

Leisure Centre Site	Electricity Consumptiion (kWh)	Emissions (Tonnes equivalent CO_2)	Gas Consumption (kWh)	Emissions (Tonnes equivalent CO_2)
Harborough	960390	470.81	1465121	271.01
Lutterworth	691860	229.17	1372657	253.90

Table 5 Scope 3 Emissions from Leisure Centres

Harborough District Council also has an Innovation Centre, which acts as an incubator for new business. This is managed by an external company on behalf of the council. The building was designed to be energy efficient and incorporates a biomass boiler. Emissions form the biomass boiler are not included, only those from the back-up gas boiler. Gas emissions from the Innovation Centre account for 16.52 $Tonnes_e$ of CO_2 and electricity use accounts for 98.58 $Tonnes_e$ of CO_2; 115.1 $Tonnes_e$ in total.

Finally the transmission of electricity has an impact on emissions, so this included using the factors suggested in government guidance. Given an electricity consumption of 113969.00 kWh there is a contribution of approximately 4.89Tonnes of CO_2 equivalent.

The total of emissions covered by Scope 3 is thus 2002.44 Tonnes equivalent of CO_2. This scope is responsible for the highest emissions. Leisure centres are very high users of energy and waste services have to cover a very large rural collection area, which leads to high emissions. Both of these services are working hard to minimise emissions.

Future activity to reduce emissions

Harborough District Council will continue to review its estate and look for ways to reduce emissions. Some of this is expected to come from disposal of assets, but there are also further opportunities to reduce energy consumption. The installation of PV on the Market Hall should show a significant reduction in emissions next year. Further refurbishment to lighting and heating in the Market Hall may also have an impact.

The operation of the Council Offices will also be investigated over the year via the Building Energy Management System. It is possible that this may highlight the opportunities for staff engagement in energy saving projects. The council has also adopted a Green Travel Plan, which encourages low carbon transport choices. This will be further promoted now that the Council Offices are fully occupied.

There is an interest in using the green travel plan to reduce emission from staff travel. This will be pursued. However, the current monitoring system for staff expenses is not able to provide detailed information on staff travel, so this may need to be investigated further to ensure that changes in behaviour can be monitored.

Conclusion

Harborough District Council continues to work hard to reduce emissions. The data shows that significant reductions in emissions have been achieved when compared to the like for like data from 2008. Scope 1 emissions have reduced by 43.5% and Scope 2 by 37%. Scope 3 emissions are somewhat different from the 2008 baseline data, so it is not possible to accurately measure changes. It is clear that, whilst good progress has been made, there is still much that can be done.

There are a number of areas, where the data for the monitoring is not available, which has led to approximations. This makes it difficult for delivering future progress. A number of areas for improvement have been identified; namely:

- Identifying further opportunities for renewable energy
- Progressing the green travel plan
- Further savings from rationalising stock and improving energy efficiency in the ongoing maintenance.

The year on year impact on emissions will be reported and new opportunities identified as we move forward.