Harborough District Council
Carbon Emissions Inventory
2015-2016

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 2015/2016.

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 2015/2016	Tonnes Equivalent of CO_2 2014/2015	Tonnes Equivalent of CO_2 2013/2014	Baseline 2008
Scope 1 – Direct Emissions	218.52	201.30	206.3	227.86
Scope 2 – Indirect Emissions	234.97	340.23	195.2	419.17
Scope 3 – Other Indirect Emissions	2326.22	2434.90	Missing data	Not comparable
Total Emissions	**2869.71**	**2976.43**	**Missing data**	**Not Comparable**
Total Emissions excluding services contracted out	**543.49**	**541.53**	**483.4**	**647.03**

Table 1: Summary of Emissions

Scope 1 emissions are some 4.1% less than the equivalent emissions in 2008. Scope 2 emissions are 22.5% 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. The Council has installed 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. In addition there has been an upgrade of the lighting to LED lights. Further work on the heating system is also required.

During the 2015/16 financial year, the electricity and gas usage of the council estate has been monitored quarterly. The aim is to provide a baseline from which reductions in consumption can be measured.

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/

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

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.

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 2014/2015.

Direct Emissions from Council Services (Scope 1)

Direct emissions from the council estate, in the financial year 2015/2016, amount to 218.52 Tonnes equivalent of CO_2. These emissions arise from gas boilers in six buildings and also a small contribution from travel around the district by parking attendants (this figure is estimated).

The Symington Building has continued to become more heavily used as the year has gone on. There are also three retail units, but there is no metered gas supply to those units. In 2014/15 figures, the gas use for the retail units was assumed to be recharged and incorrectly subtracted from the Symington Building figure; the corrected figures for 2014/15 scope 1 emissions are shown in Table 2 below. 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 figures for the Symington Building, although they are not fully in remit of Harborough District Council.

The Market Hall continues to be more heavily used with an increase in the number of traders on the 6 trading days. The emissions have increased due to the fact that some of the heating boilers have been brought back into use. The heating in the Market Hall is old and due for replacement soon.

Doddridge Road resource centre has now been disposed of and is no longer included. During the year the Café at Welland Park was also rented to a private enterprise and so did not contribute to the emissions from September 2015.

Harborough District Council Site	Gas Consumption (kWh)	Emissions (Tonnes equivalent CO_2) 2015/2016	Emissions (Tonnes equivalent CO_2) 2014/2015	Emissions (Tonnes equivalent CO_2) 2013/2014
Council Offices, Adam & Eve Street	576,347.00	106.31	123.49	78.9
Market Hall	470,915.00	86.86	56.67	84.6
Doddridge Rd [2]Resource Centre	0	0	7.44	8.1
Settling rooms	26,602.00	4.91	4.18	4.6
Park Nursery (café)[3]	16,818.00	3.1	4.07	4.3
26, Hill Court, Bushby	19,766.00	3.65	2.36	N/A
Total		206.7	198.2	180.5

Table 2: Scope 1 Emissions for Council Buildings

Parking attendants transport contribution is 11.82 Tonnes equivalent of CO_2. This means that the total CO_2 contributions from direct emissions are 218.52 $Tonnes_e$. This is a reduction of 4.1% on the 2008 baseline data, but is a small increase since 2014/15.

[2] Doddridge Rd was disposed of in 2015
[3] Transferred at end of August 2015

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. Electricity consumption figures come from 12 sites. The total emissions equate to 327.46 Tonnes CO_{2e}.

Harborough District Council installed photovoltaic on the Market Hall, with generation commencing in August 2015. Data indicates that there has been some savings already, however, the autumn was very cloudy, and the installation was late in the summer, so the full benefits will not be seen till next year. LED lights were also installed in the autumn, so again these savings should be apparent next year.

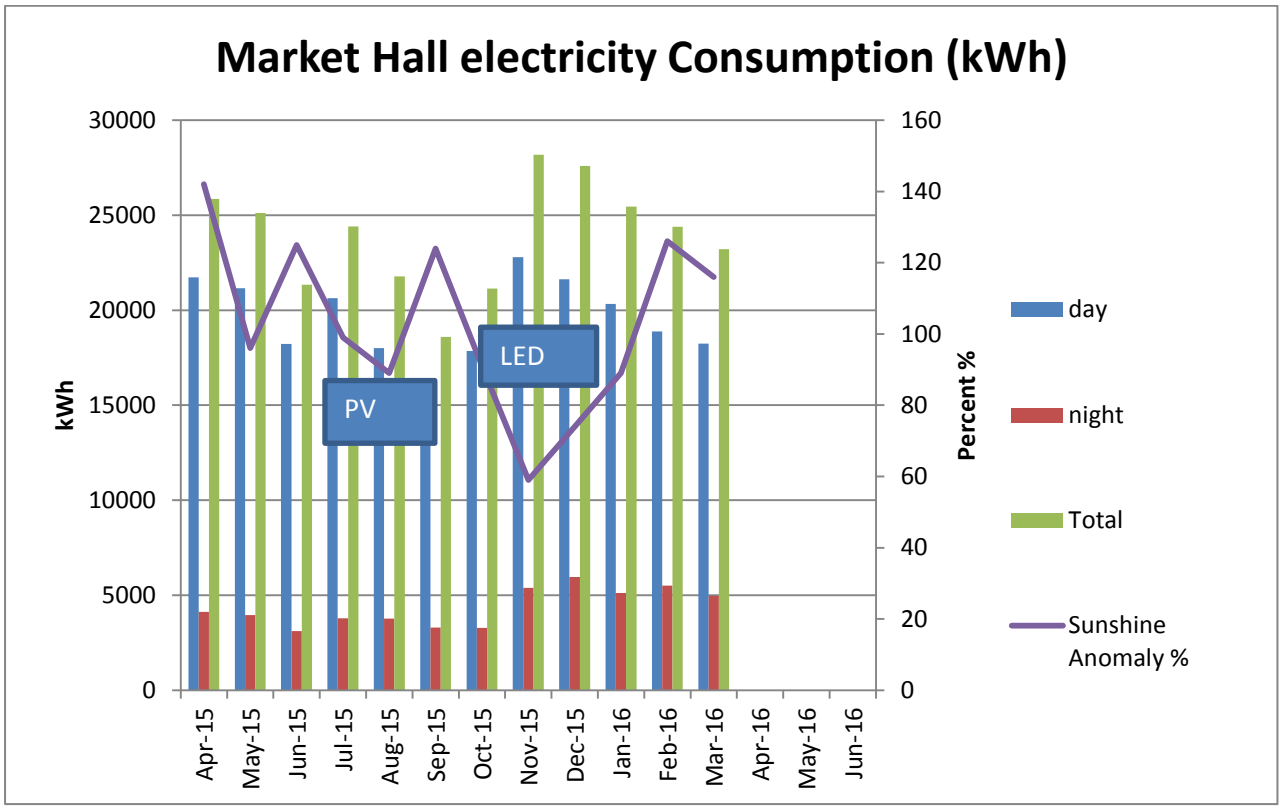

Figure 1: Market Hall Electricity consumption 2015/16

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 G. This is significantly below the typical ratings for similar buildings. The photovoltaic panels installed in summer 2015 have made some contribution, but as can be seen in figure 1, by the sunshine anomaly line, the late summer and autumn were very dull, reducing the contribution from the PV. To a large extent the savings from the PV and LEDs were offset by the additional electricity use for pumps following the repair of the heating system, which

was not fully operational in the previous winter. Reductions in electricity costs and emissions are expected next year. Other energy efficiency works are also in planning.

Since the refurbishment of the Council offices, completed in January 2014 the occupancy of the building has increased; it is now at full occupancy. This has led to an increase in electricity usage, due to banks of computers, lighting and some air-conditioned areas. The three retail units were fully occupied and had separate electricity meters, so this contribution, which is recharged, is not included in the Symington building figures. The building achieved a DECC rating of D, which is slightly better than a typical building. The Building Management System is being investigated to identify if further savings could be achieved and there are opportunities for staff awareness campaigns to maintain an energy efficient building.

Harborough District Council Site	**Electricity Consumption (kWh)**	**Emissions (Tonnes equivalent CO_2) 2015/2016**	**Emissions (Tonnes equivalent CO_2) 2014/2015**	**Emissions (Tonnes equivalent CO_2) 2013/2014**
Public Conveniences, Common Car Park	11,925.00	5.51	6.92	5.1
Settling Office	8,113.00	3.75	4.18	6.3
Council Offices, Adam & Eve Street,	348007.32	160.85	166.01	51.3
26 Hill Court, Bushby	1,625.00	0.75	1.00	2.0
Pumping Station, Northampton Road	9,082.00	4.20	6.57	6.8
Welland Park Rest Room	4,124.00	1.91	2.33	2.3
Public Conveniences, Recreation Ground	4,719.00	2.18	2.40	2.8
Cemetery Chapel	4,668.00	4.20	2.48	4.6

Welland Park Café	14,781.00	6.83	10.22	9.7
Symington Sports Pavilion	3,980.00	1.84	2.35	3.9
Welland Park Bowl Pavilion,	606.00	0.28	0.65	0.1
Market Hall	28,7070.10	132.68	135.11	99.6
Total		324.97	340.23	194.5

Table 3: Scope 2 Emissions from Council Buildings

The electricity consumption of other buildings has remained stable. Emissions across the estate have reduced by 22.5% from the 2008 baseline and a small reduction on 2014/15 figures.

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 27.0 Tonnes equivalent of CO_2. This has reduced once again as staff are encouraged to be efficient about journeys. 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, which are counted together as general. Total emissions from contractors transport fuel use are 922.4 Tonnes $CO_{2e.}$

Contractor Service area	Fuel (Litres)	Emissions (Tonnes equivalent CO_2)
Waste collection	340762.81	880.4970248
Grounds Maintenance	15075.69	38.95407539
General	1147.38	2.964715182

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 1220.14 Tonnes equivalent of CO_2. This is slightly up on last year, but this may be accounted for by variations in weather. 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) Lutterworth Leisure Centre figures are closer to typical, with a DEC rating of E.

http://www.carbontrust.com/media/39352/ctv006_sports_and_leisure_sector_overview.pdf.

Leisure Centre Site	Electricity Consumption (kWh)	Emissions (Tonnes equivalent CO_2)	Gas Consumption (kWh)	Emissions (Tonnes equivalent CO_2)
Harborough	821280	379.59	1388238	256.0604991
Lutterworth	692791	320.2	1432881	264.2949005

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 15.20Tonnes$_e$ of CO_2 and electricity use accounts for 100.65 Tonnes$_e$ of CO_2; 115.76 Tonnes$_e$ in total. This is broadly similar to thee previous year.

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 1070153.00 kWh there is a contribution of approximately 40.84Tonnes of CO_2 equivalent.

The total of emissions covered by Scope 3 is thus 2326.22Tonnes 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. There has been a reduction of 108.7 Tonnes$_e$ of CO_2 since last financial year.

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. There has been agreement for the disposal of the Settling Chambers and 26, Hill Court, Bushby. 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 will also have an impact.

The operation of the Council Offices in the Symington Building 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.

There is an interest in refreshing the green travel plan to help reduce emissions from staff travel. 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.

The waste contractors are planning to renew vehicles in the near future. New vehicles have much higher efficiencies and should lead to a further reduction of emissions, however, the number of houses in the district is growing significantly, which increases the rounds for the vehicles, so all of the savings may not be realised.

The contract for the management of the Leisure centres is also due in the near future. There is an opportunity to request further energy efficiency works, particularly at the Lutterworth Centre, which performs less well. There may also be opportunities for the further deployment of renewable energy. Heating systems in particular may still be cost effective to transfer to renewable heat.

Conclusion

Harborough District Council continues to work hard to reduce emissions. However, the data shows that the trend of reductions in emissions has reversed. Current emissions still show a reduction compared to 2008 levels. Scope 1 emissions have reduced by 4.1% and Scope 2 by 22.5%, although scope 1 emissions are slightly higher than in 2014/15. Scope 3 emissions are somewhat different from the 2008 baseline data, so it is not possible to accurately measure changes from 2008. Scope 3 emissions do show a reduction of over 100 tonnes since the last financial year.

It is clear that, whilst progress has been made, there is still much that can be done. The benefits of the efficiency works (including the PV) during 2015 should show fruit in 2016/17. Electricity and gas usage for council buildings is now monitored quarterly and the performance of the Market Hall, monthly. 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.
- Encouraging the occupants of the buildings to save energy by switching off lights and computers when not in use.
- Including energy efficiency in any new contract for contracted out services