

Harborough District Council Carbon Emissions Inventory 2017-2018

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 2017/2018.

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 have delivered significant savings. In particular the Photovoltaic cells continue to show real benefits in the second full year of operation.

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. Waste services have delivered year on year savings, despite having an increasing number of properties to service, as housing numbers in the district increase.

The emissions from each of the scopes is summarised in the table below. Fuller details of the emissions are covered in the following sections. These savings represent a 47.8% reduction in emissions from scope 1 and 2 together, compared to the 2008 baseline.

Scope of emissions	Tonnes Equivalent of CO₂ 2017/2018	Tonnes Equivalent of CO₂ 2016/2017	Tonnes Equivalent of CO₂ 2015/2016	Tonnes Equivalent of CO₂ 2014/2015	Tonnes Equivalent of CO₂ 2013/2014¹	Baseline 2008
Scope 1 Direct Emissions	218.07	202.47	218.52	201.30	206.30	227.86
Scope 2 Indirect Emissions	218.80	276.06	324.97	340.23	195.20	419.17
Scope 3 Other Indirect Emissions	2,161.18	2,245.09	2,326.22	2434.90	Missing data	Not comparable
Total Emissions	2,598.05	2723.62	2,869.71	2,976.43	Missing data	Not Comparable
Total Emissions excluding services contracted out (Scope 1 & 2 only)	436.87	478.53	543.49	541.53	401.50	647.03

Table 1: Summary of Emissions

¹ In 2013/14 the Symington Building was empty, undergoing refurbishment, so emissions are unusually low.

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 Local² 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 Harborough District Council controlled emissions: that is information on emissions from property and services run or commissioned 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 installed photovoltaic cells on the south facing roof of the Market Hall in summer 2015. The PV array supplies electricity to the building, providing an income, as well as reducing the emissions. In addition there has been an upgrade of the lighting to LED lights in autumn 2015.

Since 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, <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting#conversion-factors-2017>.

The Data is collected in three sections or scopes;

² Climate Local is a framework for local authority action on climate change under the auspices of the Local Government Association.

- 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 from 2014/2015.

Direct Emissions from Council Services (Scope 1)

Direct emissions from the council estate, in the financial year 2017/2018, amount to 218.08 tonnes equivalent of CO₂. These emissions arise from gas boilers in four buildings and also a small contribution from travel around the district by parking attendants (this figure is estimated as no direct monitoring is available).

The number of buildings included in Scope 1 has reduced, following the disposal of one building. The Market Hall and the Symington Building are by far the largest contributors to Scope 1 emissions. The total Scope 1 emissions from all buildings are 206.03 tonnes_e of CO₂. This is a slight increase from 2016/17, due mainly to the very cold late winter and early spring.

The Symington Building is fully occupied and well used through out the day and into the evening. There are also three retail units, two of which have been open all year. However, there is no metered gas supply to those units. 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 Harborough District Council only uses around half of the building directly.

The Market Hall continues to be more heavily used with an increase in the number of traders on the six trading days. Some improvements to the heating system have made an improvement, but there are more opportunities for reductions as the heating system is inefficient.

The Settling Rooms has been sold during the financial year, but still contributes to the emissions during 2017/18. St Mary's Place has become part of the council estate, which has also contributed to the overall increase in emissions for this financial year.

Parking attendants transport contribution is approximately 12.04 Tonnes equivalent of CO₂. This means that the total CO₂ contributions from direct emissions are 218.07 Tonnes_e. This is a small increase since 2016/17, back to values seen in 2015/16. This is due to the additional building and a cold winter in 2017/18.

Harborough District Council Site	Gas Consumption (kWh)	Emissions (Tonnes equivalent CO ₂) 2017/2018	Emissions (Tonnes equivalent CO ₂) 2016/2017	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	667,551.87	122.94	100.17	106.31	123.49	78.9
Market Hall	421,090.95	77.55	84.95	86.86	56.67	84.6
Settling ³ rooms	4,893.00	0.90	3.23	4.91	4.18	4.6
26, Hill Court, Bushby	0 ⁴	0	1.67	3.65	2.36	N/A
St Mary's Place	25,199.19	4.64	–	–	–	–
Total		206.03	190.02	206.7	198.2	180.5

Table 2: Scope 1 Emissions for Council Buildings

³ Sale of Settling rooms completed during this financial year, data for part year only.

⁴ Bushby resource Centre is no longer in HDC portfolio

Indirect Emissions from Council Services (Scope 2)

Contributions to indirect emissions come from the use of electricity across the council estate. Electricity consumption figures come from eleven active sites. The total emissions equate to 218.80 tonnes CO_{2e}. The Symington Building and the Market Hall are once again the biggest contributors to overall emissions.

Harborough District Council Site	Electricity Consumption (kWh)	Emissions (Tonnes equivalent CO ₂) 2017/2018	Emissions (Tonnes equivalent CO ₂) 2016/2017	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	9,449.10	3.32	3.28	5.51	6.92	5.1
Settling Office	0.00	0.00	1.22	3.75	4.18	6.3
Council Offices, Adam & Eve Street ⁵	454,498.00	119.99	148.17	160.85	166.01	51.3 ⁶
26 Hill Court, Bushby ⁷	0.0	0.00	0.22	0.75	1.00	2.0
Pumping Station, Northampton Road ⁸	0.0	0.00	1.11	4.20	6.57	6.8
Welland Park Rest Room	1,300.10	0.46	4.28	1.91	2.33	2.3
Public Conveniences, Recreation Ground	3,777.50	1.33	2.41	2.18	2.40	2.8
Cemetery Chapel	18,244.90	6.41	4.76	4.20	2.48	4.6
Symington Sports Pavilion	2,616.90	0.92	1.90	1.84	2.35	3.9
Welland Park	577.20	0.20	0.29	0.28	0.65	0.1

⁵ Excludes electricity for retail units (separately metered)

⁶ Building empty for refurbishment in 2013/14

⁷ Transferred to Thurnby and Bushby Parish Council

⁸ Transferred to Anglian Water

Bowl Pavilion,						
Manor Farm Thurnby	2,361.60	0.83	0.47	Not part of HDC estate prior to 2016/17		
Market Hall	242,745.60	85.34	107.97	132.68	135.11	99.6 ⁹
Total		218.80	276.06	324.97	340.23	194.5

Table 3: Scope 2 Emissions from Council Buildings

Harborough District Council installed photovoltaic on the Market Hall, with generation commencing in August 2015. Data indicates that during the summer of 2017 the consumption was around 20,000kWh per month. The summer of 2017 was less sunny than average (the sunshine anomaly line is under 100%; see Figure 1), so consumption is higher than 2016. Electricity consumption increases during the winter months to around 25,000kWh per month, when there is less sunlight. However, a bright winter with greater than average sunshine amounts, led to lower electricity consumption per month than during the winter of 2016/17.

The total annual consumption of electricity in the Market Hall is some 91,273kWh less than 2014/15 prior to the PV installation and LED upgrade. Some improvements to the heating system have also reduced energy consumption by almost 20,000kWh overall from 2016/17. Carbon emissions have reduced from 108 tonnes_e in 2016/17 to 85 tonnes_e in 2017/18, a reduction of 21%. The PV installation has generated 23,888kWh, with savings of over £2,600 and 13 tonnes of carbon. In addition the installation has generated almost £4,000 of revenue from the Feed in Tariff (FiT).

⁹ Market Hall closed during part of 2013/14 for refurbishment

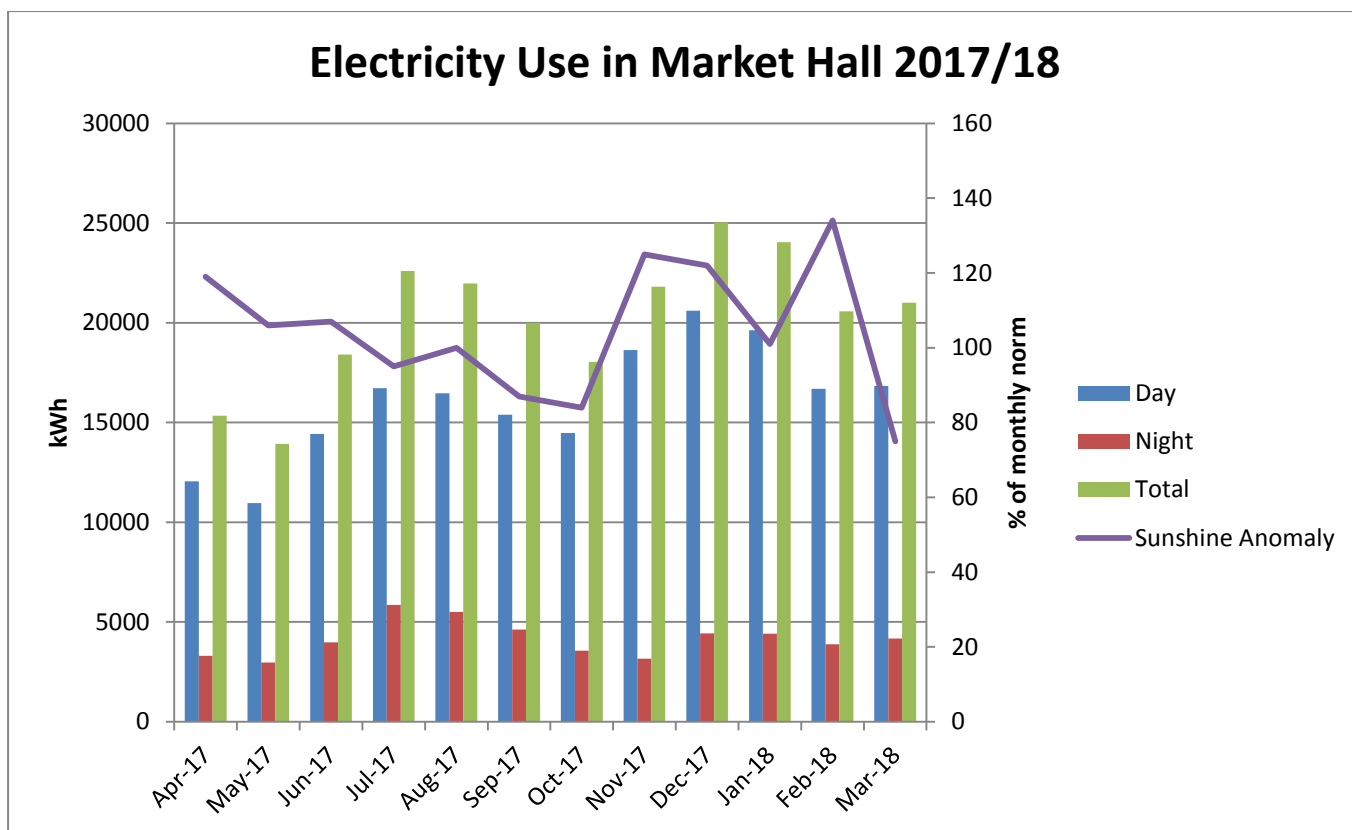


Figure 1: Market Hall Electricity consumption 2015/16

Since the refurbishment of the Symington Building, which houses 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 two of the three retail units were occupied, but 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 lifts have been refitted and the Building Management System (BEMS) has been optimised to improve energy efficiency, which has contributed to a reduction in emissions of 19%.

Emissions from Contracted Council Services (Scope 3)

Harborough District Council, in common with many Local Authorities, has contracted out various services. These results are collated in Scope 3.

The contracted services that use vehicles are summarised below. In addition to the named services, there are some smaller uses for vehicles, which are put together as general. These services contribute to the overall carbon emissions through the use of diesel fuel. The largest of these is waste collection. Total emissions from contractors' transport fuel use are 854.65 Tonnes CO_{2e}. This is a small increase from last year's value of 846.49Tonnes CO_{2e}. This reflects the increasing number of properties that need refuse collections and the uptake of the new garden waste collection. The contractor monitors vehicle use and includes regular driver training, as well as regularly reviewing routes to increase efficiencies. The vehicles were replaced in 2016 and meet the Euro IV standard.

Contractor Service area	Fuel (Litres)	Emissions (Tonnes equivalent CO₂)
Waste collection, Grounds Maintenance and street cleaning	311,193	809.15
Dog Warden	12,000	31.20
Pest Control	5,500	14.30

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 1078.23 Tonnes equivalent of CO₂. This is around 8% lower than last year, with electricity consumption showing as reduction, but gas consumption showing a small increase due to the cold winter. 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	764,684.00	268.83	1,636,924.00	301.46
Lutterworth	631,198.00	221.90	1,553,200.00	286.04

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 from the biomass boiler are not included, only those from the back-up gas boiler. Gas emissions from the Innovation Centre account for 19.3 Tonnes_e of CO₂ and electricity use accounts for 75.6 Tonnes_e of CO₂; 94.9 Tonnes_e in total. This is lower than previous year, with a reduction of 28.6%.

The Welland Park Café is now also being managed by an independent company, so is now reported under scope 3. It accounts for 6.02 Tonnes_e of CO₂ from electricity use and 3.26 Tonnes_e of CO₂ from gas usage. This is 9.28 Tonnes_e of CO₂ in total, very similar to last year.

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 50.3 Tonnes equivalent of CO₂. This has increase significantly and is over twice last year's amount. It is not possible to obtain information about business journeys taken by public transport, so this is not included.

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 kWh from all scope 2 and 3 consumption there is a contribution of approximately 74 Tonnes of CO₂ equivalent.

The total of emissions covered by Scope 3 is thus 2,161.18 Tonnes equivalent of CO₂. 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 further disposal of assets, but there are also opportunities to reduce energy consumption. Further refurbishment to heating in the Market Hall is being evaluated and some of the smaller buildings are being assessed. Opportunities for additional solar installations are being considered.

The operation of the Council Offices in the Symington Building will continue to be monitored through the quarterly reports on fuel usage. Opportunities for staff engagement in energy saving will be investigated.

The reviewed green travel plan has been completed and actions to reduce emissions from staff travel, including to and from work have been identified. These will be carried out during 2018/19. Advice on reducing business miles will also be included. 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 renewed their vehicle to Euro IV standard in 2016. The new vehicles have much higher efficiencies and have led to the reduction of emissions seen recently. 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 contractors do regularly consider optimisation of collections.

The contract for the management of the Leisure centres is also due in the near future. Efficiency has been identified as an important element of the tendering procedure. 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. There has been a significant improvement this year, as the benefits of the PV on the Market Hall feed into the data. Current emissions¹⁰ show a reduction, compared to 2008 levels, of 32.5%. Scope 1 emissions have reduced by 4.3% and Scope 2 by 47.8%. Scope 3 emissions cannot be compared to the 2008 baseline data, so it is not possible to accurately measure changes compared to 2008. However, scope 3 emissions do show a further reduction of over 125 tonnes since the last financial year.

It is clear that, whilst progress has been made, there is more that can be done. The quarterly monitoring of electricity and gas usage for council buildings has helped to identify some areas where further assessment would be worthwhile. 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
- 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

¹⁰ Scope 1 and 2 emissions