

# **Harborough District Council Carbon Emissions Inventory 2018-2019**

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## 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 2018/2019.

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 third full year of operation. Emissions from both scope 1 and 2 have reduced from 2017/18.

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. Overall scope 3 emissions have continued to reduce.

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 41.5% reduction in emissions from scope 1 and 2 together, compared to the 2008 baseline.

	2018/19	2017/18	2016/17	2015/16	2014/15	2013/14	2008
<b>Scope 1</b>	194.5	218.1	202.5	218.5	201.3	206.3	227.9
<b>Scope 2</b>	183.9	218.8	276.1	325.0	340.2	195.2	419.2
<b>Scope 3</b>	1990.1	2161.2	2245.1	2326.2	2434.9	Missing data	Not comparable
<b>Total Scopes 1 and 2</b>	378.4	436.9	478.5	543.5	541.5	401.5	647.0
<b>Total all scopes</b>	2368.5	2598.1	2723.6	2869.7	2976.4	Missing data	Not comparable

**Table 1: Summary of Emissions (tonnes equivalent)**

## 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 estate consists of; a Grade 2 listed mill building that is used as the council's main offices; a market hall, in use 6 days a week; a variety of sports changing facilities; and public toilet blocks. The sports and leisure services are contracted out under a competitive tender arrangement. There is also a start up business incubator project, based in a council owned eco building.

## Harborough District Council's action on emissions

Harborough District Council is a signatory of Climate Local<sup>1</sup> and has adopted a Climate Local Action Plan (full council 28<sup>th</sup> July 2015)

[http://www.harborough.gov.uk/directory\\_record/1163/climate\\_change\\_action\\_plan](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. In 2018 new monitoring software has been trialled in the Symington building to better understand half hourly electricity usage. The council's assets team are actively looking for further savings in all of the council's operations.

## Compiling an Inventory

The UK government has encouraged Local Authorities to continue to voluntarily report on their greenhouse gas emissions, even if the authority is too small to be

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<sup>1</sup> Climate Local is a framework for local authority action on climate change under the auspices of the Local Government Association.

required to report through the formal reporting framework for larger authorities. 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> . Conversion factors for 2018 have been used in this report.

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 from 2014/2015.

## **Direct Emissions from Council Services (Scope 1)**

Direct emissions from the council estate, in the financial year 2018/2019, amount to 194.5 tonnes equivalent of CO<sub>2</sub>. These emissions arise from gas boilers in three buildings and also a small contribution from travel around the district by parking attendants (this figure is estimated as no direct monitoring is available). One building was sold during 2017/18.

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 182.6 tonnes<sub>e</sub> of CO<sub>2</sub>. This is a reduction from 2017/18 and is the lowest level in all of the years monitored. The majority of the emissions are from the Symington Building, the Council's offices, and the Market Hall.

The Symington Building is fully occupied and well used through out the day and into the evening. There are also three retail units. 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.

Parking attendants transport contribution is approximately 11.9 Tonnes equivalent of CO<sub>2</sub>. Parking attendants' mileage is not specifically monitored, so the figure is an estimate.

The total CO<sub>2</sub> contributions from direct emissions are 194.5 Tonnes<sub>e</sub>. This is a reduction on the previous year, and the lowest level of emissions from scope 1 since monitoring began in 2008, representing a 14.6% reduction since 2008 in scope 1 emissions.

Harborough District Council Site	Gas Consumption (kWh)	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2018/2019	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2017/2018	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2016/2017	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2015/2016	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2014/2015	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2013/2014
Council Offices, Adam & Eve Street	585,366.13	107.68	122.94	100.17	106.31	123.49	78.9
Market Hall	380,264.73	69.95	77.55	84.95	86.86	56.67	84.6
26, Hill Court, Bushby	0	0	0	1.67	3.65	2.36	N/A
St Mary's Place	27,042.97	4.97	4.64	–	–	–	–
<b>Total</b>		182.61	206.03	190.02	206.7	198.2	180.5

**Table 2: Scope 1 Emissions for Council Buildings**

## 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 ten active sites. The total emissions equate to 183.9 tonnes CO<sub>2e</sub>, which represents a reduction of over 30 tonnes since 2017/18, a 56.1% reduction since 2008. The Symington Building and the Market Hall are the biggest contributors to overall emissions.

The Symington Building, which houses the Council offices, was refurbished in 2013. Since reopening the occupancy of the building has increased; it is now at full occupancy. In addition to Harborough District Council, the building houses some departments from Leicestershire County council, including the town library and museum. It also houses a range of services run by partners such as Citizen's Advice Bureau and three commercial units. The electricity usage has increased as the building became fully occupied. The three commercial units have separate electricity meters, so this usage, which is recharged, is not included in the Symington building figures. The building achieved a DECC rating of D, slightly better than a similar 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 almost 20 tonnes.

Harborough District Council installed photovoltaic on the Market Hall, with generation commencing in August 2015. Data indicates that during the summer of 2018 the consumption in, the very sunny, June was the lowest recorded at 13,713.5 kWh (Figure 1). The summer of 2018 was generally sunnier than average and the consumption recorded is generally lower than that recorded in previous years, around 16,000kWh. Electricity consumption increases during the winter months to between 20,000 and 25,000kWh per month, when there is less sunlight.

The total annual consumption of electricity in the Market Hall is almost 80,000kWh less than 2014/15 prior to the PV installation and LED upgrade. Carbon emissions have reduced from 108 tonnes<sub>e</sub> in 2016/17 to 72 tonnes<sub>e</sub> in 2018/19, a reduction of 24% compared to pre PV installation. The PV installation has generated over 31,000kWh, with savings of over £7000 including almost £4,500 of revenue from the Feed in Tariff (FiT).

Harborough District Council Site	Electricity Consumption (kWh)	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2018/2019	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2017/2018	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2016/2017	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2015/2016	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2014/2015	Emissions (Tonnes equivalent CO <sub>2</sub> ) 2013/2014
Public Conveniences, Common Car Park	16,772.70	4.75	3.32	3.28	5.51	6.92	5.1
Council Offices, Adam & Eve Street <sup>2</sup>	349,795.60	99.02	119.99	148.17	160.85	166.01	51.3 <sup>3</sup>
26 Hill Court, Bushby <sup>4</sup>	0.00	0.00	0.00	0.22	0.75	1.00	2.0
Pumping Station, Northampton Road <sup>5</sup>	0.00	0.00	0.00	1.11	4.20	6.57	6.8
Welland Park Rest Room	5,780.20	1.64	0.46	4.28	1.91	2.33	2.3
Public Conveniences, Recreation Ground	4,403.40	1.25	1.33	2.41	2.18	2.40	2.8

<sup>2</sup> Excludes electricity for retail units (separately metered)

<sup>3</sup> Building empty for refurbishment in 2013/14

<sup>4</sup> Transferred to Thurnby and Bushby Parish Council

<sup>5</sup> Transferred to Anglian Water

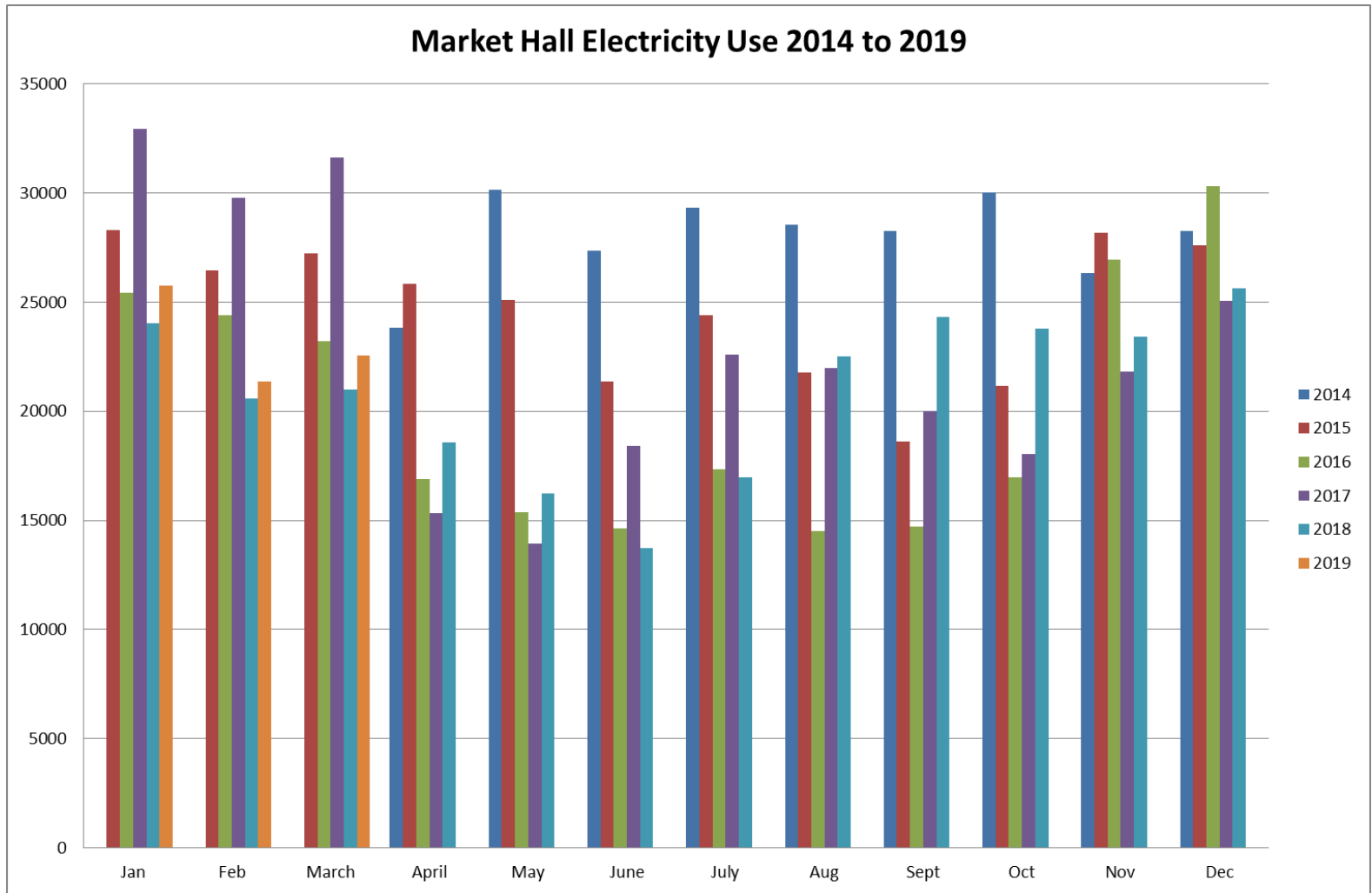


Cemetery Chapel	8,875.60	2.51	6.41	4.76	4.20	2.48	4.6
Symington Sports Pavilion	6,438.70	1.82	0.92	1.90	1.84	2.35	3.9
Welland Park Bowl Pavilion,	304.50	0.09	0.20	0.29	0.28	0.65	0.1
Manor Farm Thurnby	2,314.90	0.66	0.83	0.47	Not part of HDC estate prior to 2016/17		
Market Hall	254,895.50	72.15	85.34	107.97	132.68	135.11	99.6 <sup>6</sup>
<b>Total</b>		183.88	218.80	276.06	324.97	340.23	194.5

**Table 3: Scope 2 Emissions from Council Buildings**

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<sup>6</sup> Market Hall closed during part of 2013/14 for refurbishment



**Figure 1: Market Hall Electricity consumption 2018/19**



### 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 882.29Tonnes CO<sub>2e</sub>. This is a small increase from last year. 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.

<b>Contractor Service area</b>	<b>Fuel ( Litres)</b>	<b>Emissions (Tonnes equivalent CO<sub>2</sub>)</b>
Waste collection, Grounds Maintenance and street cleaning	318,363.58	836.32
Dog Warden <sup>7</sup>	12,000	31.52
Pest Control <sup>8</sup>	5,500	14.45

**Table 4: Scope 3 Emissions from Vehicle Operations**

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<sup>7</sup> Estimated value as not separately monitored

<sup>8</sup> Estimated value as not separately monitored

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 896.07 Tonnes equivalent of CO<sub>2</sub>. This is around 12% lower than last year. 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](http://www.carbontrust.com/media/39352/ctv006_sports_and_leisure_sector_overview.pdf)

Leisure Centre Site	Electricity Consumption (kWh)	Emissions (Tonnes equivalent CO <sub>2</sub> )	Gas Consumption (kWh)	Emissions (Tonnes equivalent CO <sub>2</sub> )
Harborough	727,623.00	205.97	129,459.00	267.33
Lutterworth	590,719.00	167.21	123758.00	255.56

**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<sub>e</sub> of CO<sub>2</sub> and electricity use accounts for 65.77 Tonnes<sub>e</sub> of CO<sub>2</sub>; 85.05 Tonnes<sub>e</sub> in total. This is lower than previous year, with a reduction of approximately 10%.

The Welland Park Café is now also being managed by an independent company, so is now reported under scope 3. It accounts for 4.96 Tonnes<sub>e</sub> of CO<sub>2</sub> from electricity use and 4.71 Tonnes<sub>e</sub> of CO<sub>2</sub> from gas usage. This is 9.67 Tonnes<sub>e</sub> of CO<sub>2</sub> 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 assuming half of the vehicles are average petrol cars and the other half are average diesel. The total mileage claimed for business use accounts for 44.12 Tonnes equivalent of CO<sub>2</sub>. This is a decrease on last year of around 12%. 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 72.9 Tonnes of CO<sub>2</sub> equivalent.

The total of emissions covered by Scope 3 is thus 1,990.1 Tonnes equivalent of CO<sub>2</sub>. This represents a reduction of around 8%. Scope 3 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. The operation of the Council Offices in the Symington Building will continue to be monitored through the quarterly reports on fuel usage. More detailed monitoring of some areas, using half hourly data has begun. This is expected to highlight further savings. 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 emissions are increasing a little. The contractors do regularly consider optimisation of collections.

The contract for the management of the Leisure centres has been recently put out to tender and awarded to new management. Energy efficiency has been identified as an important element. There may also be opportunities for the further deployment of renewable energy.

## 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 emissions<sup>9</sup> show a reduction, compared to 2008 levels, of 41.5%. Scope 1 emissions have reduced by 14.6% and Scope 2 by 56.1%. 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 170 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 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

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<sup>9</sup> Scope 1 and 2 emissions