

Harborough District Council Carbon Emissions Inventory 2023-2024

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 2023/24. The data presented here has been re-baselined to 2019/20 to reflect changes in the Council's estate.

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, that is gas boilers or vehicles owned by the council. Scope 2 covers indirect emissions from electricity consumption. Scope 3 amalgamates emissions from other sources, including contracted services, such as waste and leisure centres.

The Council has declared a Climate Emergency and has committed to reducing emissions to net zero by 2030, as far as practical. The Council is developing a full programme of work to reduce Scope 1 and 2 emissions to net zero and this is reflected in council corporate priorities. Both Harborough Innovation Centre and Harborough Enterprise Centre have now been included in Scopes 1 and 2 as they have moved to full council control. Previously they were reported in Scope 3, as they were managed externally. The biggest emitters in Scopes 1 and 2 are; the Symington Building, the Market Hall, Harborough Innovation Centre and Harborough Enterprise Centre. Table 1 shows the emissions for each scope from 2019/20 to the current year. Figure 1 shows the reduction in emissions over time graphically.

The pandemic has led to permanent changes in some council operations with a more flexible approach to remote working and online meetings. This inventory does not take account of the emissions due to home working, but as travel to work emissions have not historically been included and these have reduced due to reduced travel to work, hopefully these two changes balance to some extent.

High energy prices due to the war in Ukraine have impacted council energy bills and added impetus to reducing energy usage across the estate. Reductions have been achieved by improvement works, such as LED lighting, and building management improvements. Council emissions have reduced from the baseline year (2019/20) and year on year. The emissions this year are comparable with the emissions during 2020/21 when many buildings were closed for periods of time due to the pandemic lockdowns.

Scope 1 and 2 emissions together show a reduction of 4% on 2022/23 and 39% on 2019/20. Scopes 1, 2 and 3 emissions show a reduction of 3% on 2022/23 and 23% on 2019/20. Figure 1 shows the reduction in emissions since 2019/20.

	2023/24	2022/23	2021/22	2020/21	2019/20
Scope 1	164.66	174.31	230.06	233.1	257.34
Scope 2	166.05	170.68	173.24	209.62	286.64
Scope 3	1483.37	1529.86	1812.66	1438.18	1814.62
Total of Scope 1 and 2	330.71	344.99	403.3	442.72	543.98
Total All Scopes	1814.08	1874.85	2215.96	1880.9	2358.6

Table 1: Summary of Emissions (tonnes equivalent) 2019/20 to 2023/24

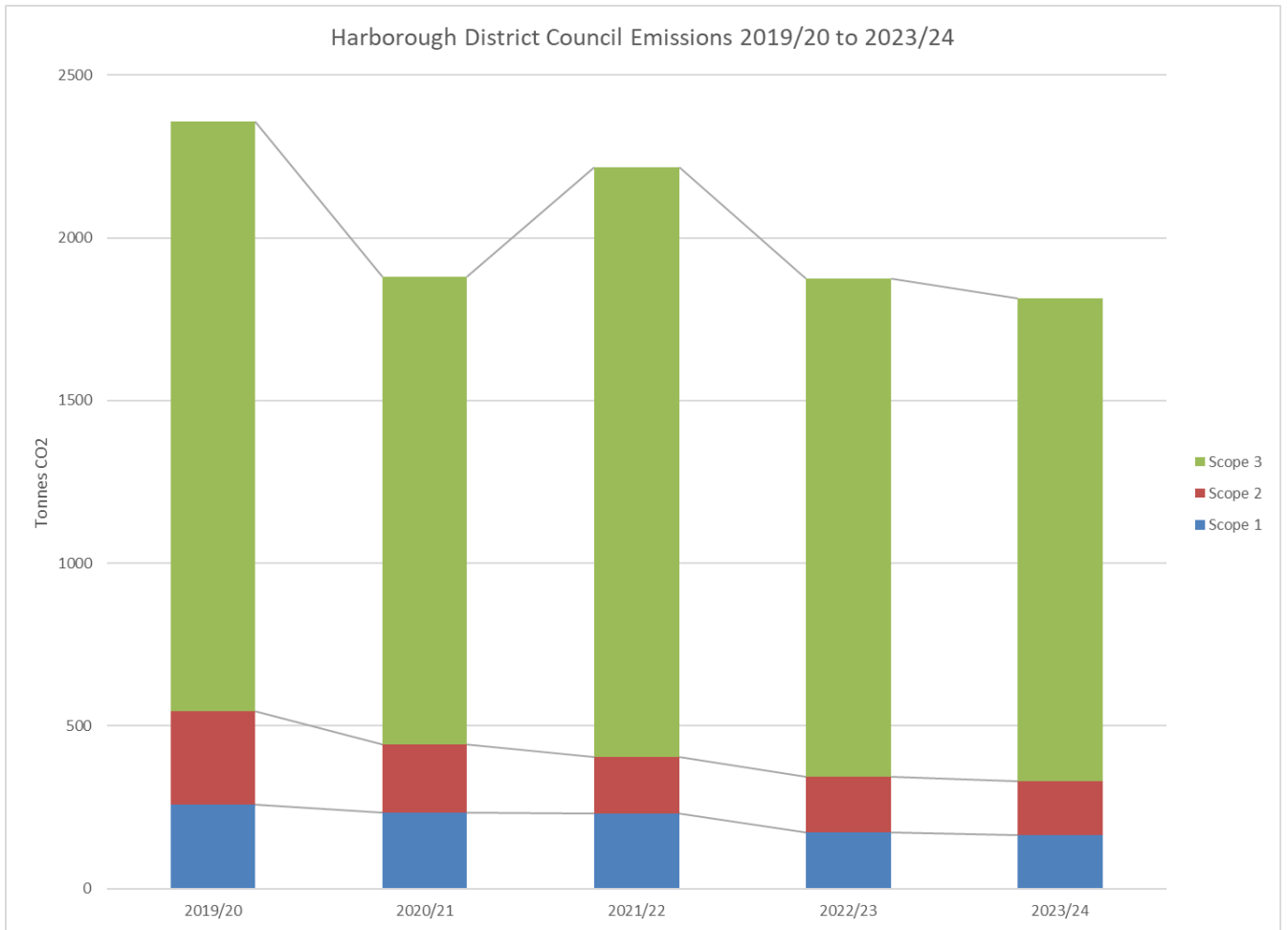


Figure 1 Emissions reduction, all scopes, 2019/20 to 2023/24

Introduction

Harborough District Council's estate consists of:

- Grade 2 listed mill building that is used as the council's main offices, but includes retail units and partner office space
- The Market Hall, in use 6 days a week
- Harborough Innovation Centre – a space for start-up companies
- Harborough Enterprise Centre – a space for companies that have outgrown the start up space
- a variety of sports changing facilities; and public toilet blocks.

The sports and leisure services are contracted out under a competitive tender arrangement. Waste services are also contracted out.

Harborough District Council's action on emissions

Harborough District Council has declared a Climate Emergency and has committed, as far as practical, to reaching net zero carbon in its own services by 2030. An important part of monitoring 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.

An inventory has been completed annually since 2014 with a baseline dataset for 2008. This inventory marks a new baseline following some changes in the council's estate. The new baseline is based on emissions from 2019/20 when both business centres came under direct control of the council.

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. Since 2018, new monitoring software has been used 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.

A full programme of works is being developed in order to ensure that the council can reach net zero in scopes 1 and 2. This involves additional studies to build business cases for each of the buildings with the highest emissions (the Symington Building, Market Hall, Harborough Innovation Centre and Harborough Enterprise Centre). In addition, the council is investigating opportunities to increase renewable generation in order to net off any electricity (scope 2 emissions).

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 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/publications/greenhouse-gas-reporting-conversion-factors-2023>. Conversion factors for 2023 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, biomass, 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. The emissions inventory has been rebaselined and trends will be measured against the baseline of 2019/20.

Direct Emissions from Council Services (Scope 1)

Direct emissions from the council estate, in the financial year 2023/2024, amount to 163.1 tonnes equivalent of CO₂¹. These emissions arise from gas boilers in four buildings and also a small contribution from travel around the district by parking attendants.

The emissions from gas boilers in the four buildings is detailed in Table 2. The emissions are similar to 2022/23 (161.8Tonnes).

The Symington Building is usually well used throughout the day and into the evening. There are three retail units, the library, museum, and partner office space, as well as the HDC office, council chamber and meeting spaces. However, there is no separately metered gas supply to the different parts of the building. All of the emissions from gas use are included within the figures for the Symington Building, although Harborough District Council only uses around half of the building directly. There have been changes to the heating controls, which has led to a small decrease in emissions.

The Market Hall is well used 6 days per week. Parts of the heating system are aging, and investigations are ongoing for replacement. The heating in the Food Hall has been replaced with a heat pump, towards the end of the year and additional insulation has been installed.

Harborough Innovation Centre (HIC) is a BREEAM excellent building, that was built in 2010. The gas boiler is a back up to the biomass boiler, but has been used more as the biomass boiler has aged. Harborough Enterprise Centre (HEC) is a new building, completed in 2019. It also is designed to BREEAM excellent standards. The emissions from the gas boiler have increased as the building has been used more.

The contribution from the HIC biomass boiler, which is fuelled by wood pellets, is 0.45 Tonnes.

Parking attendants transport contribution is 1.1Tonnes equivalent of CO₂. The parking attendants' mileage is now monitored via log sheets, with 3,715 miles completed. Data for previous years was estimated.

The total CO₂ contribution from direct emissions is 164.66 Tonnes_e. This is a decrease on the previous year from 174.31 Tonnes_e.

¹ Tonnes equivalent of CO₂ presents all greenhouse gases as a CO₂ equivalent taking account of the strength an amount of the greenhouse gases emitted.

Harborough District Council Site	2023/24	2022/23	2021/22	2020/21	2019/20
Council Offices, Adam & Eve Street	74.49	81.31	101.30	111.91	115.24
Market Hall	42.38	45.55	62.94	73.81	80.92
Harborough Innovation Centre	15.14	15.38	35.66	3.45	10.12
Harborough Enterprise Centre	31.09	19.56	18.06	31.82	39.33
Total	163.11	161.80	217.96	220.99	245.61

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 nine active sites. The total emissions equate to 123.8 tonnes CO_{2e}, which represents a slight increase on 2021/22, but a 70.5% reduction since 2008. The Symington Building and the Market Hall are the biggest contributors to overall emissions. Table 3 summarises the emissions since 2019/20.

The Symington Building, which houses the Council offices, was refurbished in 2013. In addition to Harborough District Council, the building houses some departments from Leicestershire County council, including the library and museum. It also houses a range of services run by partners such as Citizen's Advice Bureau and three commercial units. The three commercial units have separate electricity meters, so this usage, which is recharged, is not included in the Symington building figures. Measures to improve energy efficiency have been ongoing, with controls to switch off some appliances such as the water heaters leading to an improvement in emissions from electricity.

Harborough District Council installed a heat pump in the food hall and improved LED lighting. The photovoltaic array on the Market Hall installed in August 2015, continues to provide electricity savings. The PV panel generated 19,997 kWh and saved £5,595 and 8 tonnes of carbon. The data indicates that during 2023/24 the Market Hall used more electricity than the previous generating some 47.47 tonnes_e of CO₂. This is due to the reduced electricity generated by the PV panels this year. Generation is down by almost half. This was due to some faulty electrical switches, which have now been repaired and the panels are working properly again. Table 4 illustrated the benefits of the PV panels.

The Harborough Innovation Centre has been through a series of upgrades. The lighting has been replaced with LEDs and the EV chargers have also been upgraded. A solar PV array is due to be added next spring (24/25). Harborough Enterprise Centre is now in full use and is a very efficient building, designed to BREEAM "Excellent".

Harborough District Council Site	2023/2024	2022/2023	2021/2022	2020/2021	2019/2020
Public Conveniences, Common Car Park	15.02	7.37	5.56	3.84	4.18
Council Offices, Adam & Eve St ²	44.64	62.25	65.02	77.26	91.03
Market Hall	47.47	47.22	45.22	42.71	66.34
Harborough Innovation Centre	31.13	31.31	35.66	29.10	53.88
Harborough Enterprise Centre	22.01	15.56	16.03	50.43	63.80
Welland Park Rest Room	0.66	0.72	0.59	0.79	1.11
Public Conveniences, Recreation Ground	1.09	1.02	1.23	0.82	1.26
Cemetery Chapel	1.07	1.38	2.26	2.76	2.58
Symington Sports Pavilion	1.40	1.45	1.29	1.39	1.73
Welland Park Bowl Pavilion	0.03	0.91	0.20	0.11	0.14
Manor Farm, Thurnby	1.54	1.50	0.18	0.41	0.59
Total	166.05	170.68	173.24	209.62	286.64

Table 3: Scope 2 Emissions from Council Buildings

² Excludes electricity for retail units (separately metered)
December 2024

Year	Savings (£)	Carbon (Tonnes)	Generation (kWh)
2016/17	£6,783	13	31,952
2017/18	£7,029	13	31,851
2018/19	£8,601	15	37,477
2019/20	£9,630	16	40,340
2020/21	£9,783	16	39,390
2021/22	£10,156	16	39,293
2022/23	£10,571	16	39,293
2023/24	£5,595	8	19,997

Table 4: Carbon savings from Market Hall PV panels

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.

Emissions from Waste Services and Other Vehicles

Contracted services for waste collection are the main contribution to emissions from vehicles. The emissions also include grounds maintenance, street cleaning and environmental crime vehicle. The amount of fuel used has increased by around 2,000 litres this year. This is due to a continuing increase in the number of households served by the waste services.

In total, waste and grounds services contribute some 875 Tonnes_e of CO₂. The contractor monitors vehicle use and provides regular driver training. Routes are regularly reviewed to increase efficiencies. The vehicles were replaced in 2016 and meet the Euro VI standard.

Contractor Service area	Fuel (Litres)	Emissions (Tonnes equivalent CO ₂)
Waste collection, grounds maintenance and street cleaning.	348,751.96	875.37

Table 5: Scope 3 Emissions from Environmental Services Vehicle Operations

In addition to the waste services, there are some smaller uses for vehicles, including pest control and dog warden. The mileage for these services is estimated. These services contribute to the overall carbon emissions through the use of diesel fuel, contributing some 3.78 Tonnes_e of CO₂.

Total emissions from all contractors' transport fuel use are 880.15 Tonnes CO_{2e}. This is a slight increase on last year.

Harborough District Council business mileage is only available via the expenses system. This provides simplified data, with limited 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 14.76 Tonnes equivalent of CO₂. This is a decrease from last year of almost 6 tonnes. The use of video meetings helps maintain a lower business mileage.

Emissions from leisure services

There are two leisure centres, both with pools, in the district. One is in Market Harborough and the other in Lutterworth. The leisure centres are a major source of emissions. However, the significant increase in energy costs has prompted a closer look at operations and the total emissions from both gas and electricity consumption have continued to be reduced and are now 570.79 tonnes equivalent of CO₂. This is a 6% reduction on 2022/23 (607.45 tonnes).

The reduction is due mainly to the boiler at Lutterworth Leisure Centre being replaced in October 2022 and is now more efficient. But, the increased cost of energy has led to the operator making energy savings, including, reducing pool temperature by 1 degree, improvements in building management system, reduction external lighting and additional lagging of the plant room.

	Electricity Consumption (kWh)	Emissions (Tonnes equivalent CO ₂)	Gas Consumption (kWh)	Emissions (Tonnes equivalent CO ₂)
Harborough Leisure Centre	590775.00	122.33	741057.00	133.39
Lutterworth Leisure Centre	487881.00	101.03	1189123.00	214.04

Table 6: Scope 3 Emissions from Leisure Centres

Emissions from Other Buildings

The Welland Park Café is now also being contracted out, so is reported under scope 3. There were 4.89 Tonnes_e of CO₂ from electricity use and 3.37 Tonnes_e of CO₂ from gas usage. This is 8.26 Tonnes_e of CO₂ in total. This is lower than last year.

Other Buildings	Electricity Consumption (kWh)	Emissions (Tonnes equivalent CO ₂)	Gas Consumption (kWh)	Emissions (Tonnes equivalent CO ₂)	Total Emissions (Tonnes equivalent CO ₂)
Welland Park Café	23,609.60	4.89	18,744.00	3.37	8.26

Table 7: Scope 3 Emissions from other buildings

Emissions due to electricity transmission

Finally, the transmission of electricity has an impact on emissions, so this included using the factors suggested in government guidance. Given a total electricity

consumption of 801,894.00 kWh from all scope 2 consumption there is a contribution of approximately 14.19 Tonnes of CO₂ equivalent.

Total Scope 3 Emissions

The total of emissions covered by Scope 3 is thus 1,488.15 Tonnes equivalent of CO₂. This is a reduction on 2022/23 from 1529.86 Tonnes, a reduction of 41.7 Tonnes.

Scope 3 is accounts for the highest emissions for the Harborough inventory. 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.

Conclusions and Future Action

Harborough District Council continues to work hard to reduce emissions current emissions³ show a reduction, compared to 2019/20 levels. Scope 1 and 2 emissions together show a reduction of 39% on 2019/20. Scopes 1 ,2 and 3 emissions show a reduction 23% on 2019/20. Total emissions are now back down to the level seen during 2020/21, when many buildings were closed due to the pandemic. In particular, Scope 3 emissions have returned to pandemic levels.

It is clear, that there is still a significant challenge if the Council is to meet its commitment of net carbon neutral for scopes 1 and 2 by 2030. HDC has begun to assess the opportunities building by building, with initial assessments completed for The Symington Building and the Market Hall. Detailed plans for decarbonising each of the main buildings, i.e. Symington Building, Market Hall, Harborough Innovation Centre and Harborough Enterprise Centre will be drawn up over the next financial year, with a focus on the Symington Building. The plan will be to prepare for Public Sector Decarbonisation Fund bids. Netting off Scope 2 emissions will also be considered, including looking at stand alone solar projects.

Scope 3 emissions also present a challenge. A Leicestershire wide project looking at Leisure centres under the Green Living Leicestershire Partnership, will report in summer 25. The procurement of the leisure services contract includes energy efficiency savings and the Harborough Leisure Centre will have roof mounted solar PV included on the building in 2025. Decarbonising options for the waste fleet are being investigated in time to be included in the new tender procedure due in 2027. This information will give pathway to reducing emissions and should be completed before the next emissions inventory in 24/25.

Capital funding has been allocated for some projects in 2024/25 plans, including:

- Refurbishment of the Leisure Centres has been agreed – the plans are being drawn up and opportunities for energy saving and renewable energy are being included, with a solar array at the Harborough Leisure centre to be installed during 2024/25.
- An assets management plan in preparation for the four main buildings, including a business case to ensure funding can be sought through Public Sector Decarbonisations funds
- Solar PV array at the HIC to be installed 2024/25
- Including energy efficiency in any new contract for contracted-out services

Other areas being considered in the longer term include:

³ Scope 1 and 2 emissions

- Electric vehicle replacement when contracts are up for renewal subject to suitable technology being available.
- Alternative fuels are being investigated for waste vehicles (electric/Biodiesel/waste vegetable oil) and the vehicles will also form part of the waste contract which will be renegotiated by 2027.