Appendix A



Harborough District Council Climate Emergency progress report 2021/22

Introduction

Harborough District Council declared a Climate Emergency in July 2019. This followed on from many years working on action plans devised as part of the Local Government Association initiative; "Climate Local", which Harborough District Council committed to in 2013.

A Climate Emergency Action Plan was adopted in December 2021 and was incorporated into the Corporate Plan in April 2022. Key performance indicators will be reported to cabinet on a quarterly basis from September 2022.

This report reports on the progress in delivering against the Climate Emergency Action Plan on year 2021/22 and summarises the latest greenhouse gas emissions data for the whole of Harborough District based upon various UK Government datasets.

Harborough District

Harborough District is a mainly rural district covering an area of 238 square miles of south and east Leicestershire. It is within the East Midlands Region, bordering Warwickshire to the west, Northamptonshire to the south and Rutland to the east. The district's population from census 2021 data is 97,600 an increase of 14.3% since 2011¹. The population is split between the two market towns of Market Harborough and Lutterworth, large villages of Broughton Astley, Great Glen, Kibworth and Fleckney, and Bushby, Thurnby and Scraptoft which part of Leicester's Principal Urban Area. The remaining population live in the smaller rural settlements, many of which have a population of less than 500.

The district is generally affluent and people are generally healthier than the England average². The district has an aging population, with the number of people aged 65 and over increasing by 38.5% since 2011 (this is one of the highest increases in England). This trend is expected to grow over the next few years to 2030. Housing in the district is made up of a higher proportion of detached homes than the England average. Homes also tend to be larger, and many properties were built before 1900.

¹ How the population changed in Harborough, Census 2021 - ONS

² <u>https://www.localhealth.org.uk/#bbox=434253,314436,66088,41119&c=indicator&view=map7</u>

Most companies in the district are small and medium enterprises (SMEs) and have smaller numbers of employees. The exception to this is the logistics hub around Magna Park close to Lutterworth. Many residents in the district commute to nearby larger cities and towns for employment.

Harborough is relatively poor in biodiversity and geodiversity terms. 1.21% of the district's area is covered by Sites of Special Scientific Interest (SSSI) while a further 0.42% is covered by Local Wildlife Site (LWS) designations. There are several SSSIs in the east of the district protecting the remains of ancient woodland which are of high nature conservation, landscape and historical importance. The district has one geological SSSI, the Tilton Railway Cutting. The total area of woodland is 2497ha or 4.21% of the district compared to 10% in England.³

Greenhouse Gas Emissions in Harborough District

There are a number of gases that act as greenhouse gases. Carbon Dioxide (CO₂) is the most abundant and as it is part of a complex carbon cycle it can remain in the atmosphere for may hundreds of years. In recent years the concentration in the atmosphere has risen from around 300 parts per million(ppm) in the 1950s to over 400ppm now.

Methane (CH₄) is an important naturally occurring greenhouse gas, produced by waste decomposition. It is present in the atmosphere at much lower concentrations than CO₂, currently around 1800 parts per billion (ppb), an increase from around 700ppb in pre-industrial times. Methane is, however, a more potent greenhouse gas and is around 25 time stronger than CO₂. Methane remains in the atmosphere for a shorter time, with a lifespan of around 12 years.

Nitrous Oxide (N₂0) is a by-product of combustion and is also an important greenhouse gas. It remains in the atmosphere for 100s of years and is about 300 times as potent as CO₂. Atmospheric concentrations, however, are low at around 324ppb and are increasing more slowly than CO₂ or methane.

³ Harborough Local Plan 2011 -2031 <u>Adopted Local Plan | Harborough Local Plan 2011-2031 |</u> <u>Harborough District Council</u>

Fluorinated gases are man-made gases for industrial processes. They exist in the atmosphere in very low concentrations but have high greenhouse gas potential and remain in the atmosphere for 1000s of years. Local data for sources and concentrations is not available for fluorinated gases.

Carbon Dioxide Emissions

Total Territorial Emissions

The emissions data released by Government represent the territorial emissions from the whole of Harborough District and 2020 is the most recent data available⁴. In 2020, 506.8kTonnes of carbon dioxide was emitted, a reduction from 576.9kTonnes in 2019. The impact of the pandemic lead to a significant reduction in transport and industrial emissions, due to the lockdowns.



Figure 1 illustrates the distribution of emissions from different sectors.

Figure 1: Harborough District Emissions by Sector 2020⁵

⁴UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2020 - GOV.UK (www.gov.uk)published June 2022.

⁵ LULUCF means Land Use, Land-Use Change and Forestry

Road transport remains the largest source of emissions, accounting for 54% of the overall emissions from the district. Transport emissions have not reduced significantly over the whole monitored period and the reduction from 325.2kTonnes in 2019 to 275.7 kTonnes in 2020 is the largest reduction seen in the data. The industry, commerce and public sectors showed a noticeable drop, again impacted by the pandemic. Domestic emissions also dropped from 147.7 to 146.2 kTonnes, in spite of more people working from home. The emissions from land use, land use change and forestry (LULUCF) have become negative, i.e., more carbon is stored than emitted (-8kT). Overall emissions have decreased from 794.0 kT in 2005 to 506.8kT in 2020.

The Government data also gives carbon emissions that are considered to be from the local area, so emissions from large industrial businesses and motorway and train transport are not included. Total emissions are then 380.4kTonnes.



Figure 2: Harborough District Local Emissions by Sector 2020

Harborough's local emissions per sector are unchanged except for transport, which is now 145.2kTonnes, as Harborough has no major industrial emissions. This is a significant reduction from 175.1kTonnes in 2019, due to the impact of the pandemic. Transport and domestic emissions are the major sectors for emissions.

Per Capita Emissions

To compare emissions, the total emissions are often shared across the population to identify a figure for emissions per head of population or per capita. Harborough's per capita emissions are now 5.3 tonnes, which has decreased by 46% since 2005. This is a greater percentage drop than Leicestershire or the East Midlands but less than UK. Harborough's per capita emissions are higher than Leicestershire (5.1), England (4.3) and UK (4.6). Harborough has the second highest emissions of all the districts in Leicestershire. The table below shows the emissions per capita from 2005 to 2020.

Date	Harborough per capita emissions (tonnes)	Leicestershire	East Midlands	England	National
2005	9.9	9.3	9.5	8.6	8.9
2006	9.9	9.2	9.4	8.5	8.8
2007	9.4	8.9	9.1	8.3	8.6
2008	9.2	8.6	8.7	8	8.3
2009	8.6	7.8	7.9	7.2	7.4
2010	8.8	8.2	8.2	7.3	7.7
2011	7.9	7.3	7.5	6.7	6.9
2012	8.1	7.6	7.7	7.0	7.2
2013	8.0	7.5	7.6	6.8	7.0
2014	7.6	7.0	7.0	6.1	6.4
2015	7.2	6.7	6.8	5.9	6.1
2016	7.1	6.5	6.5	5.5	5.7
2017	6.7	6.2	6.3	5.2	5.5
2018	6.5	6.1	6.2	5.1	5.4
2019	6.1	5.8	5.9	4.9	5.1
2020	5.3	5.1	5.3	4.3	4.6

 Table 1: Harborough District CO2 emission per capita by sector 2005 to 2020

 (SOURCE: https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics)



Figure 3: Harborough District Per Capita total emissions 2005 to 2020

(Source<u>https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics</u>)

Methane Emissions

Methane emissions in Harborough District 132.5 kTonnes of CO₂ equivalent and come mainly from waste (29.9kTonnes CO₂ equivalent) and agriculture (95.8 kTonnes CO₂ equivalent). The emissions are mainly from livestock and landfill. The level of emissions has decreased slightly over the last 3 years. The impact of methane has just begun to be reported and is available for 2018 to 2020⁶.

⁶ <u>UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2020 -</u> <u>GOV.UK (www.gov.uk)</u>



Figure 5: Methane emissions (all sources) across Harborough District (source NAEI <u>https://naei.beis.gov.uk/emissionsapp/</u>)

Nitrous Oxide Emissions

Nitrous oxide (N₂O) is mainly associated with combustion processes and agriculture. in Harborough District the total emissions are 55.4 kTonnes CO₂ equivalent. 48.3 kTonnes CO₂ equivalent are from agriculture, with about equal amounts from livestock and soils. 2.9 kTonnes CO₂ equivalent are from transport. Agriculture emissions are spread fairly evenly across the district, but higher concentrations are associated with the M1 motorway and the M1/M6 interchange. There are also emissions associated with the Cotesbach landfill gas generation, with 0.013 and 0.020 Tonnes per year measured.



Figure 6: Nitrous Oxide emissions (all sources) across Harborough District (source NAEI <u>https://naei.beis.gov.uk/emissionsapp/</u>)

Harborough District Council Climate Emergency Action Plan 2022 to 2030

Harborough District Council declared a climate emergency in July 2019, recognising that there is a need for urgent action to reduce emissions and to ensure that communities are prepared and resilient to the effects of climate change. The Council has committed to reducing its own emission to net zero, as far as practically possible, by 2030.

The Council has identified six key commitments where the Council can act:

- 1. The Council commits to demonstrate political and corporate leadership in acting on climate change
- 2. The Council commits to managing its own assets and services, with the aim of reducing carbon emission to net zero by 2030, as far as practical
- 3. The Council commits to working with residents and communities to support their actions in reducing emissions and help them increase their resilience to the impacts of climate change
- 4. The Council commits to working with businesses to support their actions in reducing emissions and help them increase their resilience to the impacts of climate change
- 5. The Council commits to ensuring that new development is designed to mitigate emissions and be resilient to the impacts of climate change
- 6. The Council commits to working in partnership to promote resilient natural systems that will help to reduce the impacts of climate change.

Commitment 1: The Council commits to demonstrate political and corporate leadership in acting on climate change

Specific Areas of Action

- Climate Change will be the specific responsibility of one lead cabinet member, but will be part of the corporate responsibility of all teams
- Communication plan will include communicating the progress of reducing carbon emission and becoming resilient to the impacts of climate change.
- The progress on reducing emissions will be monitored and reported annually
- Leading by example
- Harborough District Council (HDC) as a statutory authority will lobby National Government to encourage it to tangibly adopt a low carbon agenda

Progress to date

Climate Emergency Action Plan adopted by Council. One Cabinet member is the portfolio holder for Environment and receives a monthly update. The whole cabinet receive quarterly updated and a green dashboard is being created.

Climate emergency action plan embedded in Corporate Strategy. There are specific key performance indicators reported on quarterly, including energy consumption in HDC own buildings. All teams now report on action towards the climate emergency action plan delivery. The inventory of emissions is produced annually.

Carbon Literacy training undergone by initial cohort of staff. This provides detailed knowledge of climate change and carbon emissions and staff once trained can support in-house training.

Neil O'Brien was invited as a key note speaker to the Harborough Green Business event in March 22.

Targeted communication campaigns have been completed for a range of topics, including energy efficiency and fuel projects, community energy switching, Earth Day, Clean Air day, food waste reduction, and sustainable travel and electric vehicles. In particular, there was a campaign to promote Great Big Green Week with information on the council's activity and promotion of community events. In total 18,489 accounts were engaged with across social media platforms.

Campaign reached total: 18,489 accounts



Check out the exciting events taking place this week 18 - 26 September 2021 in celebration of Great Big Green Week!
 Join in with this celebration of sustainability in <u>#Harborough</u> District.
 Visit: <u>www.sustainableharboroughcommunity.co.uk/biggreenweek</u>
 <u>#GreatBigGreenWeek</u> <u>#ClimateActionHarborough</u>
 Facebook: 268 reach. 2 engagements

Instagram: 199 reach. 5 likes Twitter: 1654 reach. 35 engagements. 7 likes. 6 reshares. 1 comment. Total Reach: 2,121 Harborough District Climate Emergency Report 2021/22

- Detailed communications campaigns will be used across the year corresponding with specific national or international events as well as with local news or projects.
- Continued reporting on emissions and projects.
- Further training on carbon literacy and other sustainability issues.

Commitment 2: Manage assets and services to reduce carbon emission to net zero by 2030, as far as practical.

Specific Areas of Action

- Ensure Council owned or managed buildings and services are continually monitored for energy and water usage and improvements are undertaken appropriately
- Encourage Staff and members use resources efficiently
- Environmental implications are embedded in all Council actions and activities
- Procurement processes will incorporate specific requirements to ensure that any service or product will minimise emissions and environmental impacts

Progress to date

Inventory of emissions for HDC compiled for 2021/22. In total the council is responsible for 297.09 tonnes of carbon from Scope 1 and 2 emissions (electricity and gas and other fuel use). There has been a reduction in Scope 1 and Scope 2 emissions of 54% since 2008. Scope 3 emissions from waste and leisure services plus the Harborough Innovation Centre and Grown on Centre are 1931.92. There has been less decrease in Scope 3 emissions and the 2021/22 scope 3 figures show an increase on 2020/21, as those figures were much lower due to the closure of certain services.

In 2019 an audit of single use plastics was undertaken and almost all have been now eliminated.

Agile working policies for staff to support staff and deliver carbon savings...

Environmental impact of any actions must be included in any reports going to council.

The new Harborough Grow-on Centre was developed to the highest environmental standards, including meeting BREEAM Excellent rating. It incorporates EV charging infrastructure, high energy efficiency and photovoltaics

The Harborough Innovation Centre, also a BREEAM Excellent building, has been upgraded to include LED lighting throughout.

PV solar panel scheme at Harborough Indoor Market, which was installed in 2016, has now achieved full payback of the original capital outlay.

- Investigating low carbon solutions for leisure centre upgrade
- Investigating options for emission reductions from the 4 buildings with the highest emissions
- Low carbon solutions investigated for emergency accommodation
- Update of procurement and commissioning policies to be completed 2022/23
- Upgrading and increasing the number and power of the Electric Vehicle Charging facilities at Harborough Innovation Centre.
- Developing a business case to invest in PV solar panels for Harborough Innovation Centre.

Commitment 3: work with residents and communities to help them reduce their emissions and improve their resilience to climate change

Specific Areas of Action

- Encourage the uptake of all schemes promoting energy efficiency to residents
- Support vulnerable people in fuel poverty.
- Encourage all residents to reduce their carbon footprint
- Promote of lower carbon transport options for personal/business journeys
- Investigate the opportunities for community owned low carbon electricity and heating to be retrofitted in off gas village locations
- Encourage the uptake of flood warden positions and promote the Red Cross community reserve volunteer scheme

Progress so far

In partnership with Platform HG, LAD2 funding has been secured. This funding was to deliver energy efficiency and low carbon measures in homes with poor energy efficiency during 2021/22. The project has been extended to complete in October 2022. Good progress has been made and all 76 properties will be upgraded with measures to ensure that the efficiency of the properties improve to at least an EPC of C. In total 70 photovoltaic systems and 54 air source heat pumps have been installed on 69 properties so far. This will save households money on bills and reduce emissions.

Working with Harborough Energy, 104 homes have received loft and/or cavity wall insulation through ECO3 funding during 2021/22. In total 128 measures have been installed saving 3,470 Tonnes of carbon over the lifetime of the measures. Harborough District Council published a Statement of Intent on Flexibility to ensure that this offer was available to a wider range of residents. In total since 2018 Harborough Energy have helped over 1200 residents with energy efficiency under the various ECO schemes.

Working in partnership with the Leicestershire district and borough authorities, under the Green Living Banner, HDC ran a "Solar Together" project. This solar PV collective purchasing scheme offers residents a chance to get a solar PV and/or battery installation at a competitive price and with the assurance of an excellent installer, with support throughout the process. In total, there were over 1500 registrants in Harborough. The installer has been selected and residents are currently receiving their offers. Installations will take place in late 2022.

HDC applied for funding under the ORCs scheme to ensure that residents without access to offstreet parking (who are unable to install their own charger) can access charge points in our car parks. This has enabled the provision of an additional 10 EV charge points in Market Harborough located in Angel Street, Dodderidge Rd and St Mary's car parks, which are close to many homes with only onstreet parking.

Supported the Harborough Big Green Week in 2021 and 2022, as a means of promoting good practice and carbon reduction to both businesses and local residents.

Next steps

• Working with Leicestershire districts and the county council, HDC has accessed funding through the Sustainable warmth Competition, which will fund energy efficiency

improvements to around 60 properties in Harborough district. The scheme will be delivered as Green Living Leicestershire. The partnership approach will help access future funding as it becomes available.

- HDC will look to deliver energy improvements under ECO4 which commenced in July 2022, with an offer to those on eligible benefits. When guidance is released HDC will publish a statement of flexible eligibility to ensure that more residents are able to access the funding.
- HDC is working with district partners to deliver additional EV charging infrastructure, including in rural areas. Funding has been accessed and additional funding bids are in place. If funding is achieved, this will deliver charging hubs in each of the main towns in each district, with PV canopies and battery storage.

Commitment 4: Work with business to reduce their carbon emissions and become more resilient to climate change

Specific Areas of Action

- Encourage Local Business to reduce its impact
- Promote Local Food economy
- Lead by example in good practice in workspaces
- Work with Businesses to ensure they are able to deal with the issues raised by climate change

Progress so far

The District Council actively encourages local businesses to think about reducing their impact on the environment and to reduce their carbon emissions. Through its regular Business Bulletins, the District Council has encouraged businesses to sign up to be part of the Harborough Green Business Directory. We organised a Go Green Business Convention at Harborough Grow-on Centre in March 2022, which was attended by over 30 businesses, and where businesses committed to key carbon reduction priorities.

The Council established Go Green Business Grants as part of supporting local businesses in their recovery from the Covid pandemic. These supported 38 businesses to implement a range of projects, from switch over to LED lighting to supporting an emissions-free courier service to purchase a new electric delivery van. We sponsored 40 local companies with free memberships of the Zellar online platform to help businesses to measure and reduce their carbon footprint through a step-by-step guidance and support on how work towards Zero Carbon

The Council encouraged and financially supported the development of the new Cycle Hub at Market Harborough Railway Station, with East Midlands Railways and Network Rail, as a means of encouraging active travel. HDC finalised and approved new Town Centre Masterplans for Lutterworth and Market Harborough, both of which prioritise walking and cycling, and promote strong ambitions for the sustainability of both town centres.

We supported the establishment and growth of a new dedicated zero-waste/ refill business at Harborough Indoor Market.

- Develop a pilot scheme to support rural tourism businesses to install Electric Vehicle Charging points across the District, with will hopefully be extended using UK Shared Prosperity and Rural England Prosperity funding.
- Introduce a pilot electric cargo bike delivery scheme from Harborough Indoor Market.
- Undertake a comprehensive review of waste at Harborough Indoor Market, in order to reduce the amount of waste going to landfill and encourage Market businesses to use less packaging and non-recyclable waste.
- Start delivering key elements of the Town Centre Masterplans, including improved facilities for walking and cycling as part of the active travel actions.
- Organised another Business Convention in 2023, building on the success of the Go Green Business Convention in 2022.

Commitment 5: Ensure development is designed to be low carbon and resilient to climate change.

Specific Areas of Action

- Monitor the effectiveness of the local plan to deliver carbon emission reductions and resilience
- Investigate whether some inducement can be offered to developers who deliver higher standards to reduce emissions, through Section 106 or similar process
- Review of the Local Plan will investigate opportunities to improve the expected performance of buildings
- Investigate opportunities for Council and partners to deliver low carbon projects
- Work with partners to ensure that the Strategic Growth plan has low carbon resilient design at its heart
- Review flood risk to built-up areas and investigate resilience measures for homes businesses and communities

Progress so far

The Local Plan was adopted in 2019. It includes policies on reducing carbon emissions and promoting resilience and adaptability in the district (Policies CC1, CC2, CC3 and CC4). A Development Management Supplementary Planning document was adopted in 2021, section 8 gives information on how applicants should address climate change. The use of SUDs is also explained.

In response to the Local Plan policy, many commercial and industrial applications now routinely include information on reaching BREEAM excellent. Domestic developments are also including evidence on improving the energy efficiency of the buildings above Building Regulations. EV charge points and sustainable travel options are included as well. Where there is no evidence of consideration of climate change, the applicants are challenged to provide evidence.

Neighbourhood Plans are encouraged in Harborough District, and many include policies on climate change. These policies are followed for that neighbourhood area.

S106 agreements are used to ensure natural and seminatural space is included in developments and that these spaces are managed. SUDs schemes are also covered in both conditions and S106.

The Lead Local Flood Authority is working with HDC, catchment partnerships and local groups to identify works that will lead to improvements in the risk of surface water run-off and river flooding in Market Harborough, which is prone to flooding especially in heavy rain fall.

- The review of the Local Plan has been agreed and a timetable published. Climate Change will be a key issue in the new policy development.
- The Sustainability Appraisal will be integral to identifying improvements
- Investigate opportunities in S106 agreements

Commitment 6: Develop resilient natural system that ensure that the impacts of climate change are minimised

Specific Areas of Action

- Promote the use of natural river processes to reduce flooding
- Promote greater tree planting
- Ensure sustainable drainage is well designed and delivers multiple benefits on new development sites and protects sites upstream,
- Ensure local green space and urban trees offer multiple benefits of cooling, biodiversity enhancement and storage for large rainfall events

Progress so far

Harborough District Council is an active partner in the Welland Catchment Partnership and the Soar Catchment Partnership. Projects are underway on the upper Welland to slow the flow of water, and thus reduce the risk of flooding in Market Harborough.

Harborough District Council has planted 70 larger trees for the green canopy/platinum jubilee. Also any trees that had to be felled have been replaced. Sites have been identified that are suitable for wildflower planting, with 3 wildflower areas planted in Market Harborough, one at the commons along the river, one along St Mary's Place and one at the train station with some more trees. HDC also planted a fourth wildflower area at Lutterworth Country Park. In Welland Park, one large border was changed from annual plants to perennials and shrubs, to create more habitat and used open flowers which insects prefer. This bed was commended in the "In Bloom" judging.

Open Spaces Strategy requires 8.5ha of natural and semi natural greenspace (including watercourses and urban woodland) per 1000 population to be provided as part of new development. Off-site contributions continue to be required for natural and semi natural greenspace from developments of under 50 dwellings.

Harborough District Council is working with Trent River Trust to support Great Glen Green Space to access funding from WWF/Botanica funding to create a wildflower area close to the river Sence. This work provides a green corridor link to their Green Space at the confluence of the Sence and the Burton Brook.

- Further areas for wildflower and tree planting are being identified
- We are working with parishes and LCC supporting the wildflower verge project
- Active collaboration with the catchment partnerships and other local groups will continue.

Appendix A: Industry, Commercial and Public sector Emissions

Emissions from industrial sector include CO₂, methane and nitrous oxide. The combined emissions are included in CO₂ kTonne equivalent and are detailed in the table below.

Year	Industry Electricity	Industry Gas	Large Industrial Installatio ns	Industry 'Other'	Industry Total	Commerci al Electricity	Commerci al Gas	Commerci al 'Other'	Commerci al Total	Public Sector Electricity	Public Sector Gas	Public Sector 'Other'	Public Sector Total
2005	33.9	14.7	0	25	73.6	74.5	13.9	0.5	88.9	9.5	8.4	0.7	18.6
2006	35	12.3	0	24	71.3	77	11.7	0.5	89.1	9.9	7	0.6	17.5
2007	33.1	10.6	0	24.1	67.9	72.8	10	0.4	83.2	9.3	6	0.6	16
2008	33.9	13.4	0	22.1	69.3	74.4	12.6	0.4	87.5	9.5	7.6	0.6	17.7
2009	29.1	12.3	0	20.3	61.6	63.9	11.6	0.7	76.2	8.2	7	0.6	15.8
2010	29.8	13.9	0	22.5	66.3	65.6	13.2	0.3	79.1	8.4	7.9	0.6	16.9
2011	26.4	11.3	0	19.7	57.5	58.1	10.7	0.4	69.2	7.4	6.4	0.7	14.5
2012	28.8	12.5	0	20.6	61.8	63.3	11.8	0.3	75.4	8.1	7.1	0.6	15.8
2013	27.2	13.3	0	19.6	60.2	59.9	12.6	0.3	72.8	7.7	7.6	0.6	15.8
2014	25	11	0	22	58.1	54.9	10.4	0.4	65.7	7	6.3	0.6	13.9
2015	20	11.2	0	22.2	53.4	43.9	10.6	0.4	54.9	5.6	6.4	0.1	12.1
2016	15.2	9.6	0	21.2	45.9	35.2	10	0.4	45.6	4.4	6.7	0.1	11.3
2017	13.4	9.4	0	21.3	44.1	29.3	9.7	0.4	39.5	4.2	6.3	0.1	10.6
2018	12.5	9.7	0	21.7	43.9	25.8	11.3	0.4	37.5	3.9	6.2	0.1	10.3
2019	10.8	9.2	0	18.8	38.7	23.2	10.6	0.4	34.2	3.4	6.1	0.1	9.6
2020	8.3	4.7	0	18.4	31.5	19.3	9.8	0.3	29.4	2.7	6.2	0.1	8.9

Table A1: Emissions form all green house gases expressed as CO2 equivalent in kTonnes.

The emissions from industry and commercial are roughly equal at 31.5kT and 29.45kT respectively. Public sector emissions are much lower at 8.9kTonnes. Harborough District has significant employment in transport and storage, including the large logistics development at Magna Park, near Lutterworth. Other significant employment types are wholesale and retail, chemical manufacture, administration, and mining and quarrying. The majority of businesses are small and medium sized enterprises.

Renewable Energy

There are a number of renewable energy installations across Harborough District. There are two commercial wind farms, Low Spinney 8MW and Swinford at 22MW. In addition, there are a number of smaller on farm turbines that contribute to a total of 32.4MW of installed capacity. There are 1,558 solar photovoltaic installations; including a number of large (>1MW) field-based solar installations, giving a total capacity of 16.2MW⁷. There is one anaerobic digestion (499 kW) and two landfill gas sites with capacity of 5.6MW. There is 14.9MW installed capacity of plant biomass. Harborough has no hydropower capacity due to a lack of resource.

	Installed cap	pacity MW			
	PV	Wind	AD	Landfill Gas	Biomass
2014	5.6	31.9	0.5	5.6	
2015	7.4	32.2	0.5	5.6	
2016	10	32.2	0.5	5.6	
2017	14.4	32.2	0.5	5.6	4.5
2018	17.1	32.4	0.5	5.6	14.9
2019	16.2	32.4	0.5	5.6	14.9
2020	16.9	32.4	0.5	5.6	14.9

Table A2: Installed Capacity of Renewable Energy

⁷ <u>https://www.gov.uk/government/statistics/regional-renewable-statistics</u> Renewable electricity by local authority updated September 2021

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Up to 2021 there were 51 accredited non-domestic Renewable Heat Incentive (RHI) projects installed. This has delivered an increased capacity to 9MW. Harborough has the third highest installed capacity in Leicestershire, behind Melton and Hinckley and Bosworth. Harborough has 329 accredited domestic RHI installations⁸ an increase of 44 and the second highest number in Leicestershire behind Northwest Leicestershire. RHI has now ceased. It is replaced by the Boiler Upgrade Scheme for domestic boilers.

⁸ <u>https://www.gov.uk/government/statistics/rhi-monthly-deployment-data-october-2018</u> data for RHI deployment updated December 2021

Appendix B : Domestic Emissions

Domestic emissions have fallen steadily, in part due to the decarbonising of electricity but also due to improved energy efficiency.

Year	Domestic Electricity	Domestic Gas	Domestic 'Other Fuels'	Domestic Total
2005	92.2	109.1	20.9	222.1
2006	96.2	105.4	21.1	222.7
2007	97.8	101.2	19.5	218.4
2008	93.4	105.1	21	219.5
2009	83.7	96.7	19.9	200.4
2010	86.9	107.7	22.3	216.8
2011	82.8	88.8	18.5	190.0
2012	88.5	97.9	18.4	204.8
2013	80.6	101.3	19.2	201.1
2014	68.0	86.4	17.1	171.5
2015	58.7	92.1	17.2	168.1
2016	48.0	96.2	17.2	161.4
2017	42.1	93.9	16.8	152.9
2018	38.2	94.7	17.4	150.3
2019	34.5	96.8	16.4	147.7
2020	33.6	95.5	17.1	146.2

Table B1 Domestic Carbon emissions 2020 in kTonnes

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Figure B1: Distribution of housing types across Harborough District compared to UK 2011 (Source Census 2011).

There are a large number of rural detached properties in Harborough District. There is a much higher proportion of detached properties than nationally and far fewer flats. In addition, a large proportion of properties were built before 1900. There are currently approximately 37,500 dwellings in the district, with a growth rate of over 550 per year new dwellings anticipated in the Local Plan. Over half of all properties were built before 1964.

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Figure B2: Build period of domestic properties in Harborough District – source LA Reports | PBCC (carbon.place)

Electricity and gas consumption are close to the national average and gas is the main heating fuel. However, there are a large number of homes that rely on oil or electricity for their heating needs. This is due to the rural nature of the district, with some villages having little or no access to the national gas grid. Government statistics indicate that over 5,000 homes (or 13%) in the district, were not connected to the gas network in 2018 (https://www.gov.uk/government/statistics/sub-national-estimates-of-households-not-connected-to-the-gas-network).



Figure B3: Harborough District household heating type (source: Census 2011)

Based on Government data the average domestic energy consumption across the district has reduced year on year, until 2020, when the impact of lockdowns can be seen with an increase in mean domestic energy consumption. This trend is shown both for electricity consumption and gas consumption. The increasing energy efficiency of homes and the decarbonisation of the grid meant that this increase in use did not translate into an increase in emissions from the domestic sector.

Year	Mean domestic electricity consumption (kWh)	Mean domestic gas consumption (kWh)
2005	5,223	21,513
2006	5,087	20,524
2007	5,029	19,866
2008	4,804	19,170
2009	4,707	17,590
2010	4,716	17,468
2011	4,660	16,447
2012	4,612	16,425
2013	4,495	16,001
2014	4,472	15,561
2015	4,400	15,379
2016	4,316	15,292
2017	4,283	15,470
2018	4,138	15,169
2019	4,085	15,094
2020	4,325	15,387

Table B2: Harborough District Domestic Electricity and Gas Consumption⁹

⁹ (Source <u>https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics-2005-to-2021</u> and <u>https://www.gov.uk/government/statistical-data-sets/gas-sales-and-numbers-of-customers-by-region-and-local-authority</u>)

The number of households in fuel poverty in 2020 is 9.7%, or around 3,634 homes. However, Harborough district is considerably lower than the England average (13.2%). Harborough District figures have reduced from higher than the England average to considerably below, with the gap even more marked for the new LILEE indicator¹⁰. Harborough is lower than the Leicestershire average (11.3%) and the East Midlands average (14.2%).

Year	Estimated number	Number of Households in	Harborough %	England %	Indicator
	of Households	Fuel Poverty	U	-	
2011	35,280	4,046	11.5	11.1	LIHC
2012	35,646	3,794	10.6	10.7	LIHC
2013	35,616	2,799	7.9	10.5	LIHC
2014	35,756	2,993	8.4	10.5	LIHC
2015	35,804	3,546	9.9	11.0	LIHC
2016	35,919	3,176	8.8	11.1	LIHC
2017	36,677	2,517	6.9	10.9	LIHC
2018	37,075	3,285	8.9	10.3	LIHC
2019	37,494	3,625	9.7	13.4	LILEE
2020	37,513	3,634	9.7	13.2	LILEE

Table B3: Numbers of Households in Fuel Poverty¹¹

¹⁰ The Fuel Poverty Strategy for England introduced a new fuel poverty indicator - Low Income Low Energy Efficiency (LILEE) to replace the previous Low Income High Costs (LIHC) that had been used to 2019. This means that 2019 onwards data is not completely comparable to the earlier data. ¹¹ Fuel poverty sub-regional statistics - GOV.UK (www.gov.uk) published June 2021

Harborough District has been proactive in promoting ECO energy efficiency improvements across the district, with almost 1000 homes receiving loft or cavity wall insultation, leading to a saving of over 31,000T over the 20 year lifetime of the measures. This activity seems to have made a positive impact on fuel poverty numbers in the district, which is now much lower than the England average.

Appendix C : Transport

Greenhouse gas emissions from transport include contributions from CO2 and nitrous oxide. Transport emissions have been slow to reduce. The big reduction in 2020 is due to the impact of the pandemic and the move to home working.

Year	Road Transport (A roads)	Road Transport (Motorways)	Road Transport (Minor roads)	Diesel Railways	Transport 'Other'	Transport Total	Local Transport emissions only
2005	103.2	169	74.9	13.5	3.6	364.2	181.7
2006	114.9	169.8	76.0	13.5	3.9	378.1	194.8
2007	102.1	169.9	80.0	12.9	3.8	368.8	185.9
2008	97.5	152.2	80.6	13.0	3.9	347.2	182.0
2009	105.6	149.1	77.4	13.1	4.0	349.2	187.0
2010	104.1	147.7	77.6	13.2	4.1	346.7	185.8
2011	90.7	144.3	74.9	12.8	4.0	326.7	169.6
2012	89.0	142.0	72.4	12.9	3.9	320.2	165.3
2013	87.5	152.4	75.8	12.7	4.2	332.5	167.5
2014	88.4	154.7	81.1	12.9	4.3	341.4	173.8
2015	90.9	149.6	82.8	12.8	4.3	340.4	178.0
2016	102.7	153.5	89.0	12.7	4.5	362.4	196.2
2017	90.9	154.4	87.1	12.6	4.6	349.6	182.6
2018	87.8	147.7	91.1	11.9	4.7	343.2	183.6
2019	81.7	143.1	90.8	12.2	4.8	332.6	177.3
2020	64.6	123.3	78.4	9.2	4.2	279.6	147.2

 Table C1 Greenhouse gas emissions for different sectors of transport in kTonnes of CO2 equivalent

There are an estimated 1,320 plug in electric vehicles in Harborough district at the end of 2021/22¹². Of these 889 are company vehicles and 431 are privately owned. This has increased from 111 at the beginning of 2019. Electric Vehicle ownership is due to increase rapidly over the next few years, with a projection of between 2,500 and 5,000 in service in the district by 2025.¹³

In 2019/20 Harborough District Council installed 6 charging points in various public car parks across the district (3 in Market Harborough, 1 in Lutterworth, 1 in Broughton Astley and 1 in Kibworth). In 2020/21, Even with the impact of the pandemic, the use of the chargers increased significantly, with an increase of 60% of carbon savings, from the previous year.

All Chargers	2021/22	2020/21	2019/20	2018/19
Carbon saving kg	13,894.86	3,935.72	2,481.36	491.85
Energy Consumption kWh	24,846.6	7,068.90	4,430.70	878.30
Number of charges	3090	887	908	181

Table C2 Harborough public EV charging summary data

In addition, there are a further 6 charging points at new Grow on Centre, office accommodation to support businesses to grow, and the 3 charging points which were installed at Harborough Innovation centre. In total, Harborough District Council has 15 accessible charging points. There are a total of 32 publicly accessible charging points, across the district, of which 3 are rapid devices. Harborough District has

¹² <u>All vehicles (VEH01) - GOV.UK (www.gov.uk)</u>

¹³ Western Power Distribution - Distribution Future Energy Scenarios Application

the second most charge points of any district in Leicestershire (April 2021¹⁴) and the highest number of chargers per 100,000 head of population in the county (34.1).

Information on people cycling and walking¹⁵ for travel or leisure, shows that in Harborough district, people walk and cycle for leisure more than the England average, but less walk or cycle for travel. Data from 2019/20 indicates that 73.5% of people walk at least once a week (cf. England 67.3%). More people walk for leisure, with 65.3% walking once a week for leisure (cf. England 55.1%), but only 27.1% walking once a week for travel, which is less than the England average at 30.5%. There are more people cycling, with around 13.8% cycling once week for travel or leisure, which is a higher than the England average of 11.6%. Again, more people cycle for leisure, with almost 11.6% cycling once a week for leisure (cf. England 8.5%), but only 2.6% cycling for travel once a week (cf. England 5.1%). In general numbers cycling and walking have increased since 2018/19.

¹⁴ Electric vehicle charging device statistics: April 2021 - GOV.UK (www.gov.uk)

¹⁵ Walking and Cycling Statistics (https://www.gov.uk/government/collections/walking-and-cycling-statistics)

Appendix D: Waste

Greenhouse gas emissions associated with waste are mainly methane and nitrous oxide. The data on these emissions has only just started to be collated.

Year	Landfill	Waste Management 'Other'	Waste Management Total
2005	[x]	3.7	[x]
2006	[x]	4.1	[x]
2007	[x]	4.3	[x]
2008	[x]	4.2	[x]
2009	[x]	4.1	[x]
2010	[x]	4.2	[x]
2011	[x]	4.4	[x]
2012	[x]	4.4	[x]
2013	[x]	4.5	[x]
2014	[x]	4.8	[x]
2015	[x]	4.9	[x]
2016	[x]	4.9	[x]
2017	[x]	5.3	[x]
2018	28.4	5.2	33.5
2019	28.8	5.3	34.1
2020	26.4	5.3	31.8

Table D1: Methane and N₂O emissions from Waste collated as CO₂ equivalent in kTonnes

In 2021/22 Harborough District disposed of 21,382.5 Tonnes of household waste to landfill. In comparison, 17,311.3 Tonnes of residual waste was sent for reuse, recycling or composting which equates to 44.7%. Of this 24.8% was reused or recycled and 19.3% was composted or anaerobically digested. The household waste per person has fallen slightly from 418Kg per person in 2020/21 to 403.7kg per person.

Harborough District Also collects waste from around 900 public litter bins.

Appendix E Agriculture, Land-use and environment

Harborough District is a mainly rural district, with mixed arable and livestock farming. The main emissions are from CO₂ for energy and methane from livestock.

Year	Agriculture Electricity	Agriculture Gas	Agriculture 'Other'	Agriculture Livestock	Agriculture Soils	Agriculture Total
2005	9.3	6.8	15.7	[x]	[X]	[x]
2006	9.6	5.7	14.8	[x]	[x]	[x]
2007	9.1	4.9	14.1	[x]	[X]	[x]
2008	9.3	6.2	13.7	[x]	[X]	[x]
2009	8.0	5.7	13.9	[x]	[X]	[x]
2010	8.2	6.4	14.0	[x]	[X]	[x]
2011	7.2	5.2	14.2	[x]	[X]	[x]
2012	7.9	5.8	14.5	[x]	[X]	[x]
2013	7.5	6.2	14.3	[x]	[X]	[x]
2014	6.8	5.1	14.5	[x]	[X]	[x]
2015	5.5	5.2	15.1	[x]	[X]	[x]
2016	4.4	6.1	15.9	[x]	[X]	[x]
2017	4.2	5.7	15.8	[x]	[X]	[x]
2018	3.8	6.0	15.7	119.4	31.5	176.4
2019	3.4	5.5	15.8	119.6	32.9	177.1
2020	3.1	2.8	15.7	118.0	29.5	169.2

Table E1: Greenhouse Gas emissions from Agriculture expressed as CO2 equivalent in kTonnes

Year	Forest land	Cropland	Grassland	Wetlands	Settlements	Harvested Wood Products	Indirect N₂O	LULUCF Net Emissions
2005	-10.3	14.3	-11.8	0	8.8	0	0.4	1.4
2006	-10.5	14.5	-11.5	0	8.4	0	0.3	1.3
2007	-10.6	13.8	-12	0	8	0	0.3	-0.4
2008	-10.7	12.9	-12.3	0	7.6	0	0.3	-2.1
2009	-10.9	14.3	-12.9	0	7.2	0	0.3	-2
2010	-11	14.4	-13.1	0	7	0	0.3	-2.4
2011	-11.1	14.4	-13.9	0	6.7	0	0.3	-3.6
2012	-11.1	14.6	-13.7	0	6.4	0	0.3	-3.6
2013	-11.2	14.3	-14.1	0	6	0	0.3	-4.8
2014	-11.3	14.1	-14	0	5.8	0	0.3	-5.1
2015	-11.4	13.8	-15	0	5.7	0	0.3	-6.6
2016	-11.5	14.3	-14.2	0	5.8	0	0.3	-5.2
2017	-11.5	14.5	-14.7	0	5.4	0	0.3	-6
2018	-11.5	14.3	-15	0	5.6	0	0.3	-6.4
2019	-11.5	14.4	-15.8	0	5.6	0	0.3	-7
2020	-11.5	14.6	-15.6	0	5.7	0	0.3	-6.6

Table E2: Greenhouse Emissions from Land Use, Land-Use Change and Forestry expressed as CO2 equivalent in kTonnes

Appendix F: Greenhouse gas emissions due to consumption.

The Government data on greenhouse gas emissions only cover territorial emissions. Emissions caused by consumption are more difficult to assess as the products we consume are often produced elsewhere. A new tool Carbon Place Based Calculator <u>PBCC (carbon.place)</u> illustrates how Harborough District compares to England see figure F1. The tool shows which activities contribute most to emissions.¹⁶ It also highlights the point we need to reach by 2032 to meet the Committee on Climate Change budget, highlighting the scale of the task.

Harborough District has high emissions due to travel, including cars and flights. There are also higher food and drink emissions. The majority of the LSOA areas in Harborough are worse than average, with one LSOA in the worst 1%.

¹⁶ Morgan, Malcolm, Anable, Jillian, & Lucas, Karen. (2021). A place-based carbon calculator for England. Presented at the 29th Annual GIS Research UK Conference (GISRUK), Cardiff, Wales, UK (Online): Zenodo. <u>http://doi.org/10.5281/zenodo.4665852</u>



Figure F1: Harborough District Emissions by sector compared to England Carbon Place data

The tool also shows how emission per head vary across Harborough District. Some parts of Harborough district have very high per capita emissions as shown in Figure F2. The tool allows further information to be gleaned for the different areas of the district.



Figure F2: Harborough district per capita emissions for Lower Super Output Areas with rating.