Destination Zero Annual Update 2022 to 2023

Introduction

The Destination Zero plan was adopted in January 2020 and represents the all-important first stage in our commitment to reducing carbon emissions within the district area to net-zero.

The overall vision of the plan is: “To lead Malvern Hills District to become carbon neutral as quickly as possible and by 2050 at the latest, with at least a 50% reduction in the district’s carbon footprint by 2030.” In addition, the council aims for its own operations to be net-zero by 2030.

To achieve this the plan identifies 8 priority areas for action covering the Malvern Hills District Council’s (MHDC) own emissions, energy efficiency of homes and businesses, low carbon transport, reducing waste and carbon sequestration through habitat restoration. Each priority area contains a range of individual actions that will contribute to meeting them.

To monitor our progress the plan identifies five measures of success:

1. Reduction to zero of the council’s own greenhouse gas emissions
2. Reduction as far as possible towards net zero of district-wide greenhouse gas emissions (under scope of influence of local authorities)
3. Growth in size of the low carbon economy (to be defined)
4. Increased amount of renewable energy generation across the district
5. Increase in the amount of carbon captured through council action

The plan commits to an annual progress review and this report provides an update against each of the five success measures as well as the latest update on key projects that have been progressed during the year.

Key Progress in 2022/23

- Worked with the Midlands Net Zero Hub to have energy audits undertaken on Malvern Splash and Malvern Theatres.
- Started implementing Hydrotreated Vegetable Oil in five of the waste fleet vehicles, saving approximately 113 tonnes of CO2e and reducing the total fleet emissions by 10%.
- Two electric charging points have been installed at the depot to facilitate the future use of electric vehicles.
- Refurbishment of the Grange Road and Teme Street toilet blocks to include integrated solar panels, a battery systems, LED lights and low flush toilets and taps.
- Started the roll out of carbon literacy training to council officers, delivering it to over 30 members of staff across both Wychavon and Malvern Hills district councils.
- Completed the installation of energy efficiency works at the Malvern Theatres (including upgraded insultation, glazing and air handling units, LED lighting and replacement chiller plant) with funding obtained through the Public Sector Decarbonisation Scheme.
- Signed up for renewable electricity and green gas energy tariffs for 2023/24 for council energy use.

- £2,772,000 in Malvern Hills in additional funding secured through Home Upgrade Grant 2 to deliver further improvements to lower income households in the least energy efficient homes.
- Established and funded the “Bee Together” project, a partnership between the Council and Buglife charity. The project engaged over 200 young people, providing environmental education focussed on the crucial role pollinators play in biodiverse habitats and climate change resilience.
- With support from local volunteers and contractors, MHDC and individual Councillors supported the construction and installation of over 20 swift boxes on residences around Malvern.
- At Hallow we have been undertaking field restoration through reseeding and returning to cutting a cattle grazing. 58 trees have also been planted with support of volunteers and 130m of native hedgerow has been planted. Wildlife surveys have been conducted to establish a baseline to evidence where our efforts should be to enhance biodiversity.
- Awarded 8 Sustainable Tourism Grants to local businesses to help fund measures that will reduce energy consumption and carbon emissions, as well as awarding 8 green marks to businesses demonstrating best practice in sustainability.

Measure 1: Reduction to zero of the council’s own greenhouse gas emissions

MHDC is aiming to reduce its emissions to net-zero by 2030. For the 2018/19 baseline, as the Destination Zero plan was being prepared, the council’s operations generated 1,750 tCO2e (tonnes of carbon dioxide equivalent). The monitoring data for 2022/23 shows that this has reduced to 1,483 tCO2e, a reduction of 15% from the baseline.

However, from 2021/22, MHDC is now including the carbon emissions generated from the water usage across its buildings as well as the transmission and distribution losses from the electricity it uses. These have not been included in previous figures. With these included it would raise the council’s emissions to 1,511 tCO2e but still represents over an 13% reduction from the baseline.

What is included in the calculation of the Council’s emissions?

It is important to clarify what exactly is being measured when reporting on carbon emissions, known as the organisational boundary. The reporting of emissions falls under three different ‘scopes’:

- Scope 1 - emissions are released as a direct result of an activity. For a local authority this will largely comprise combustible fuel for heating boilers and fuel burned in owned fleet vehicles.
- Scope 2 - emissions are those released as an indirect consumption of an energy commodity. For a local authority this will usually be the purchased grid electricity used in its operations.
- Scope 3 - emissions are all other indirect emissions other than electricity and often relate to those generated by the things that a local authority purchases or from activities resulting from the provision of services.

MHDC monitor all relevant Scope 1 and 2 emissions. Scope 3 emissions reporting is less well established and methodologies are still emerging to allow for measurement in many areas, particularly for goods and services the Council purchase. However, MHDC does

monitor a number of Scope 3 emissions that relate directly to our operations. The emission sources are identified in Table 1 below.

Regarding buildings, the emissions calculation includes those that MHDC both owns and operates. It also includes some buildings that the MHDC own but are operated by another organisations that provide the services, this includes the Malvern Splash leisure centre and Malvern Theatres. MHDC has a number of buildings it owns that are leased out to private organisations; these would fall under Scope 3 emissions are not included. Table 2 below sets out which buildings are included in the monitoring.

Table 1 – Emission sources included in the calculation of MHDC's organisational carbon emissions

Scope 1	Scope 2	Scope 3
• Heating – buildings (natural gas) • Fuel use – Waste fleet, street cleaning and other MHDC owned vehicles (petrol, diesel)	• Electricity – buildings and car parks	• Water consumption • Staff and councillor business vehicle mileage • Transmission and distribution losses from electricity consumption

Table 2 – MHDC owned buildings that are included in the calculation of MHDC's organisational carbon emissions

Building Name
Malvern Council House & Chamber
Malvern Depot
Malvern Splash
Malvern Theatres
Upton Hill Centre
Malvern Vale Centre
Public Toilets

Overview of MHDC's emissions

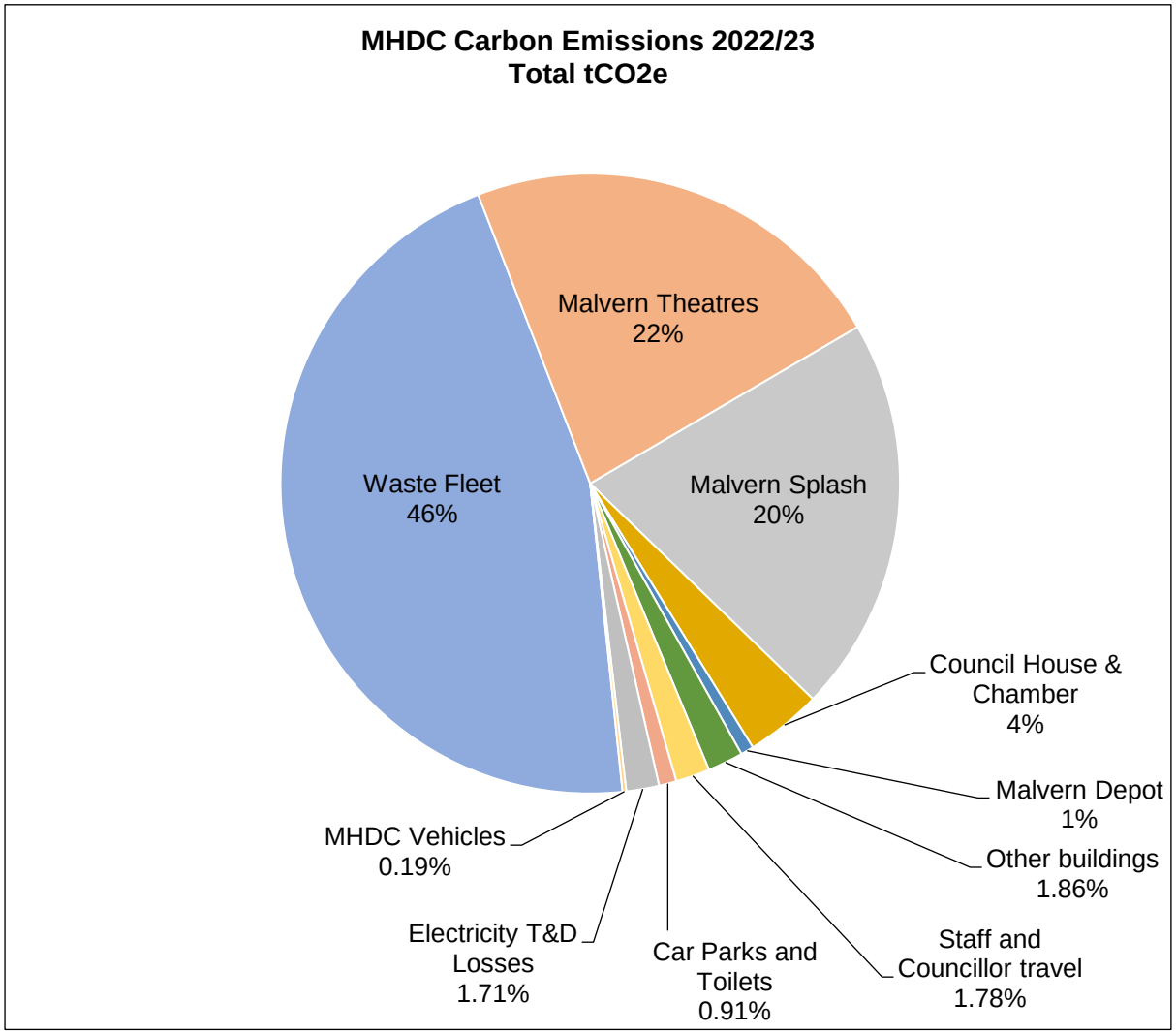
Table 3 and Chart 1 set out the sources of emissions monitored in 2022/23. The Council's waste fleet continues to be the single largest sources of emissions, making up almost half of the total at 46%. The council's buildings make up the next significant proportion of emissions, but particularly those resulting from the Malvern Splash and Malvern Theatres, contributing 20% and 22% respectively.

Table 3 – MHDC emission sources for 2022/23

Source	**tCO2e**
Waste Fleet	692.01
Malvern Theatres	339.61
Malvern Splash	312.34
Council House & Chamber	60.02
Malvern Depot	10.27
Other buildings	28.06
Staff and Councillor travel	26.88
Car Parks and Toilets	13.79

Electricity Transmission & Distribution Losses	25.91
MHDC Vehicles	2.88
TOTAL	**1511.77**

Chart 1 - MHDC emission sources for 2022/23



Change in emissions over time and the pathway to net-zero

The council's aim is for its operational emissions to be reduced to net-zero by 2030. Chart 2 shows the change in emissions from the 2018/19 baseline, it reveals that emissions are steadily falling, having reduced by 15% from the baseline, broadly following a trajectory to

2030. It also displays the impact that Covid-19 restrictions had on our emissions in 2020/21, largely as result of closures of the Malvern Splash and Malvern Theatres. It also demonstrates the need for the council to continue to progress its carbon reduction actions contained in Destination Zero to ensure that emissions keep reducing to the 2030 target.

Chart 2 - MHDC carbon emissions since 2018/19

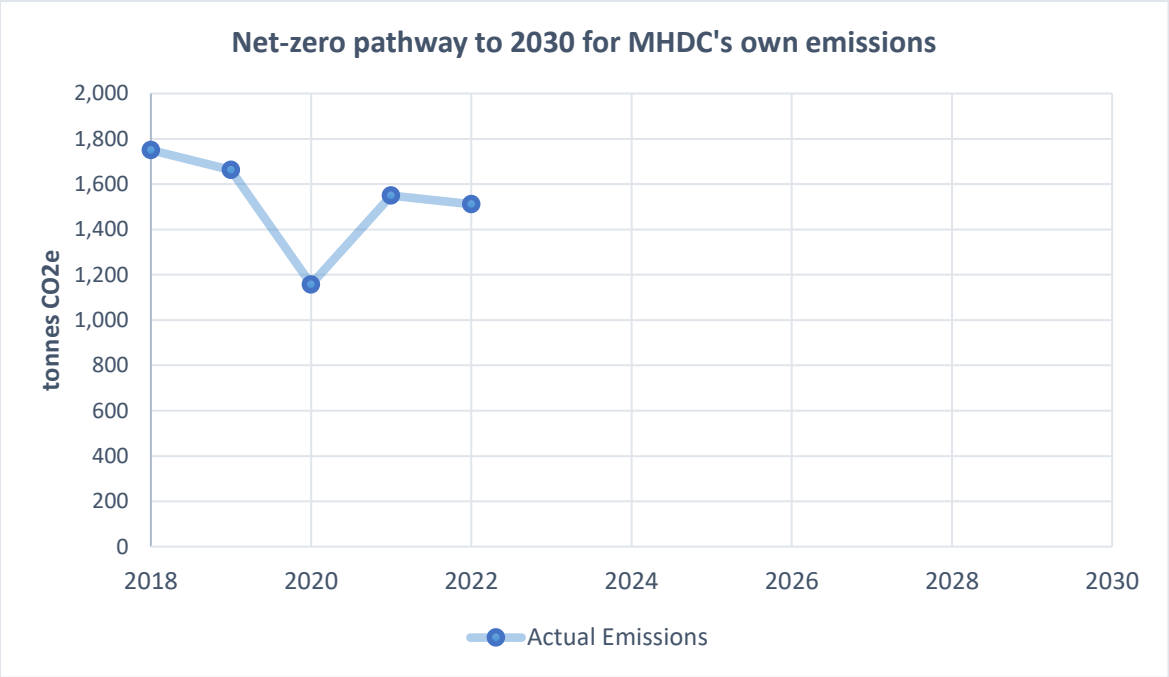


Table 4 sets out the change in emissions from individual sources, both compared to the previous 2021/22 monitoring year and the 2018/19 baseline. It shows that there has been an overall reduction of over 36 tCO2e in 2022/23 compared to 2021/22.

The most significant reduction in emissions has come from the waste fleet which is a result of HVO being implemented in five of the vehicles. This has led to emissions from the waste fleet reducing by 77 tCO2e from the previous year, although HVO actually saved 113 tCO2e from using HVO instead of diesel, this saving has been partially offset due to more fuel being used in total this year compared to last.

There have been increases in emissions from building energy use at Malvern Theatres and Malvern Splash as well as a number of other areas compared to the previous year. However, overall, since the 2018/19 there have been relatively significant reductions in most cases. This indicates that although there are yearly fluctuations, particularly regarding building energy use, the overall trend is going down. It should be noted that emissions for electricity transmission and distribution losses have only been recorded since 2021/22 and explains why the overall change shows a large increase.

Table 4 - Change in greenhouse gas emissions from the council's emission, comparing the latest data from 2022/23 with both the 2018/19 baseline and the previous year of 2021/22

	2018/19 t CO2e	2021/22 t CO2e	2022/23 t CO2e	Change 21/22 to 22/23	Overall change
Waste Fleet	803.99	769.06	692.01	-77.04	-111.98
Malvern Theatres	423.50	326.38	339.61	13.23	-83.89
Malvern Splash	348.21	300.88	312.34	11.46	-35.88
Council House & Chamber	74.96	59.33	60.02	0.69	-14.93
Malvern Depot	13.08	12.70	10.27	-2.43	-2.81
Other buildings	38.71	21.04	28.06	7.02	-10.65
Staff and Councillor travel	41.19	23.13	26.88	3.75	-14.31
Car Parks and Toilets	11.02	9.02	13.79	4.77	2.77
Electricity T&D Losses	N/A	25.07	25.91	0.84	25.91
MHDC Vehicles	4.16	1.69	2.88	1.19	-1.28
TOTAL	**1759**	**1548.30**	**1511.77**	-36.53	-247.04

Tracking the progress of our largest emitters

As the largest sources of the Council's emissions further data is provided in Charts 3, 4, 5 & 6 below that tracks the energy usage and resulting CO2e emissions from the Council's three key buildings, as well as the mileage and CO2e emissions from the waste fleet. This more detailed data further highlights the impact that Covid-19 restrictions had during 2020/21 and the subsequent rebound of energy use for 2021.

The Council started using Hydrotreated Vegetable Oil (HVO) in five of the waste fleet vehicles from October 2022. HVO has emissions which are around 90% lower than diesel and its use in some of the vehicles led to saving of 113 tonnes CO2e compared to using diesel. This has led to a 10% reduction the waste fleets total emissions compared to 2021/22, despite an actual rise in the number of miles driven by the fleet. HVO was only introduced in October 2022, therefore the data for 2022/23 on includes savings for six months use of this alternative fuel. Savings will be even greater in 2023/24 with the benefit of a full year.

Chart 3 - Electricity/Gas usage and CO2e emissions at Malvern Theatres

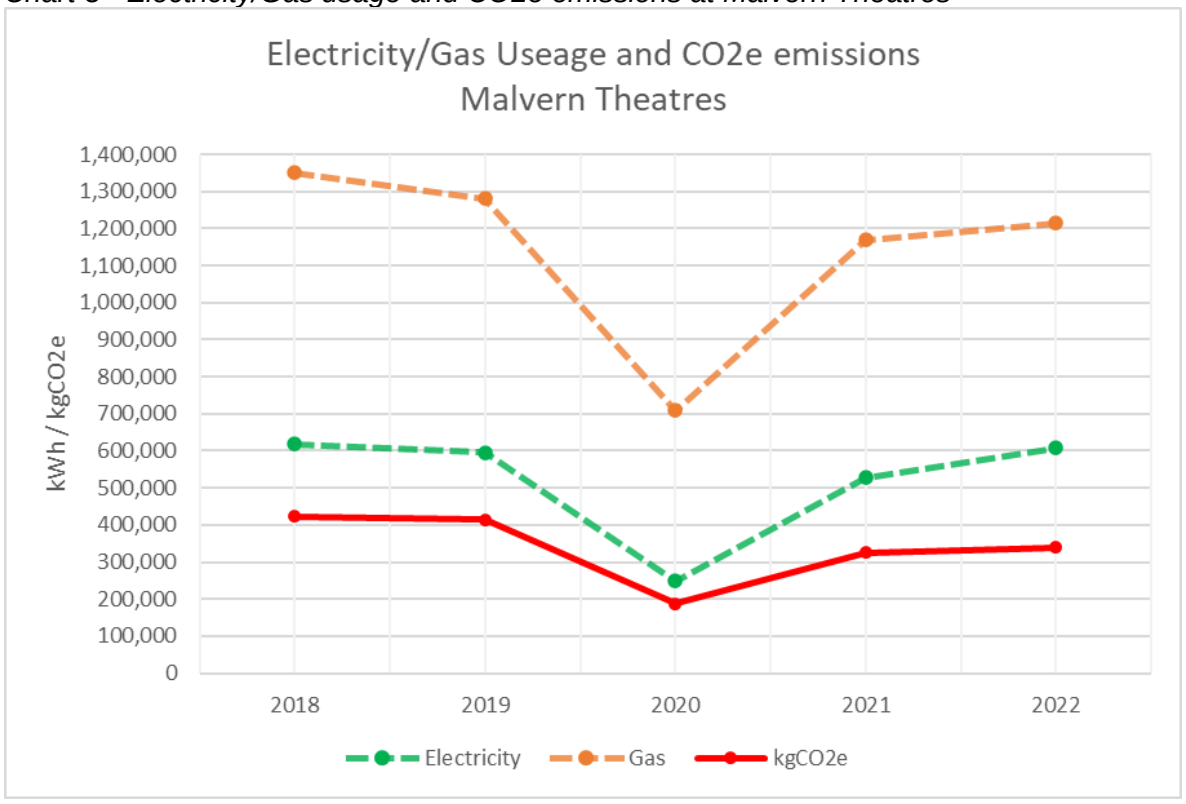


Chart 4 - Electricity/Gas usage and CO2e emissions at Malvern Splash

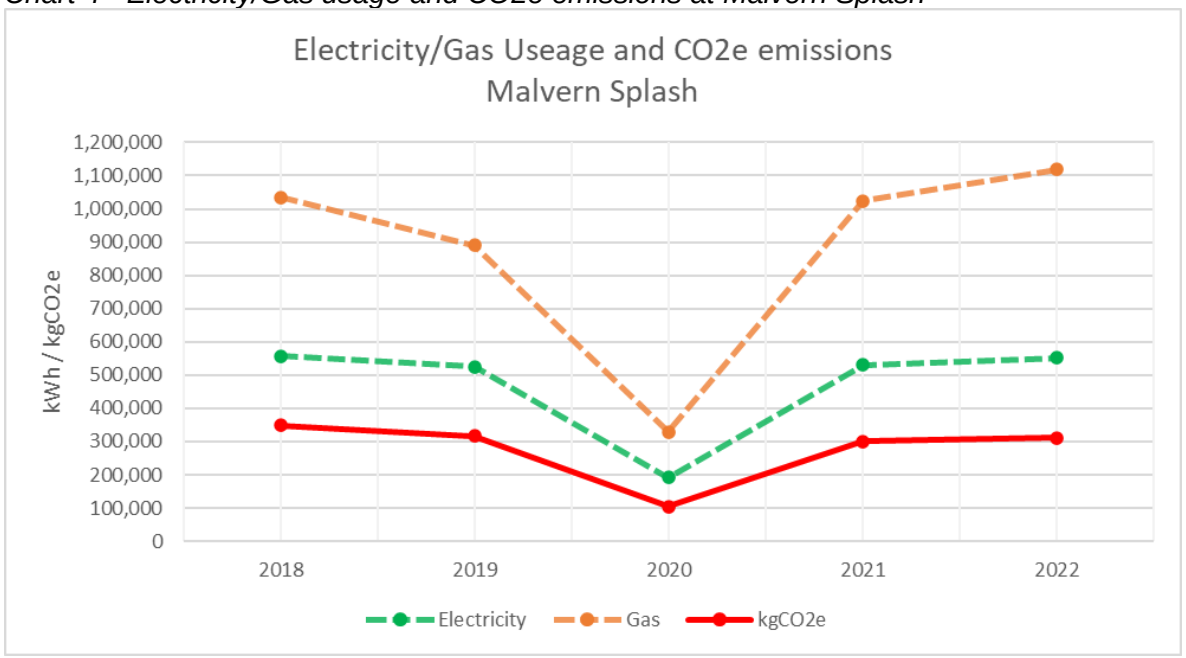


Chart 5 - Electricity/Gas usage and CO2e emissions at Malvern Council House

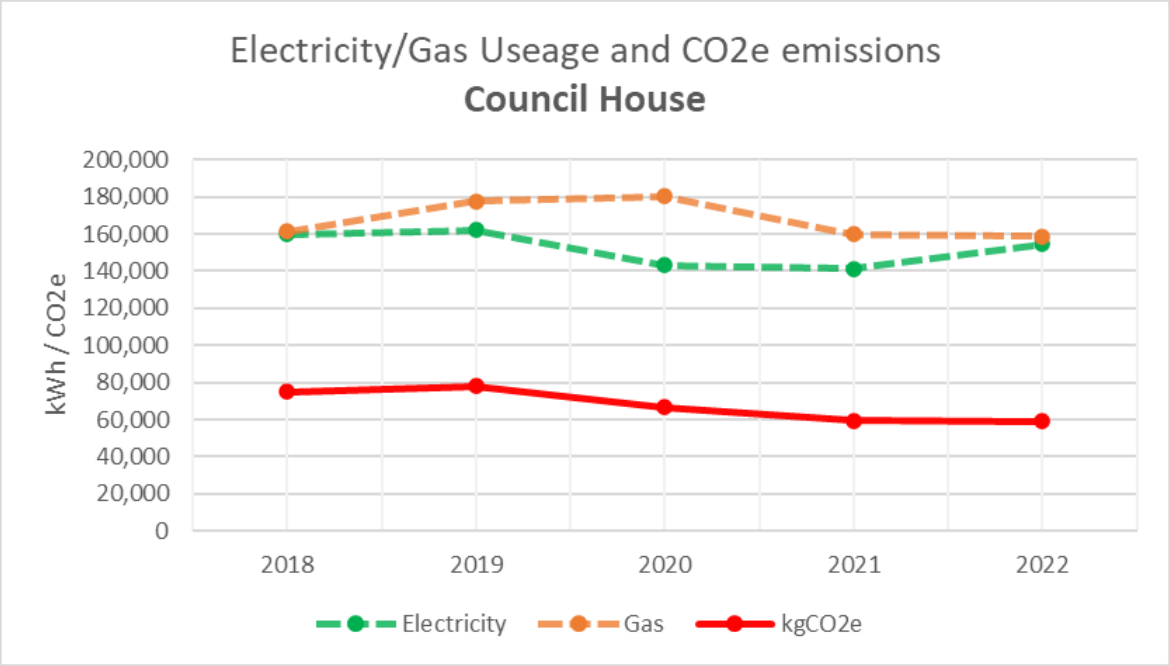
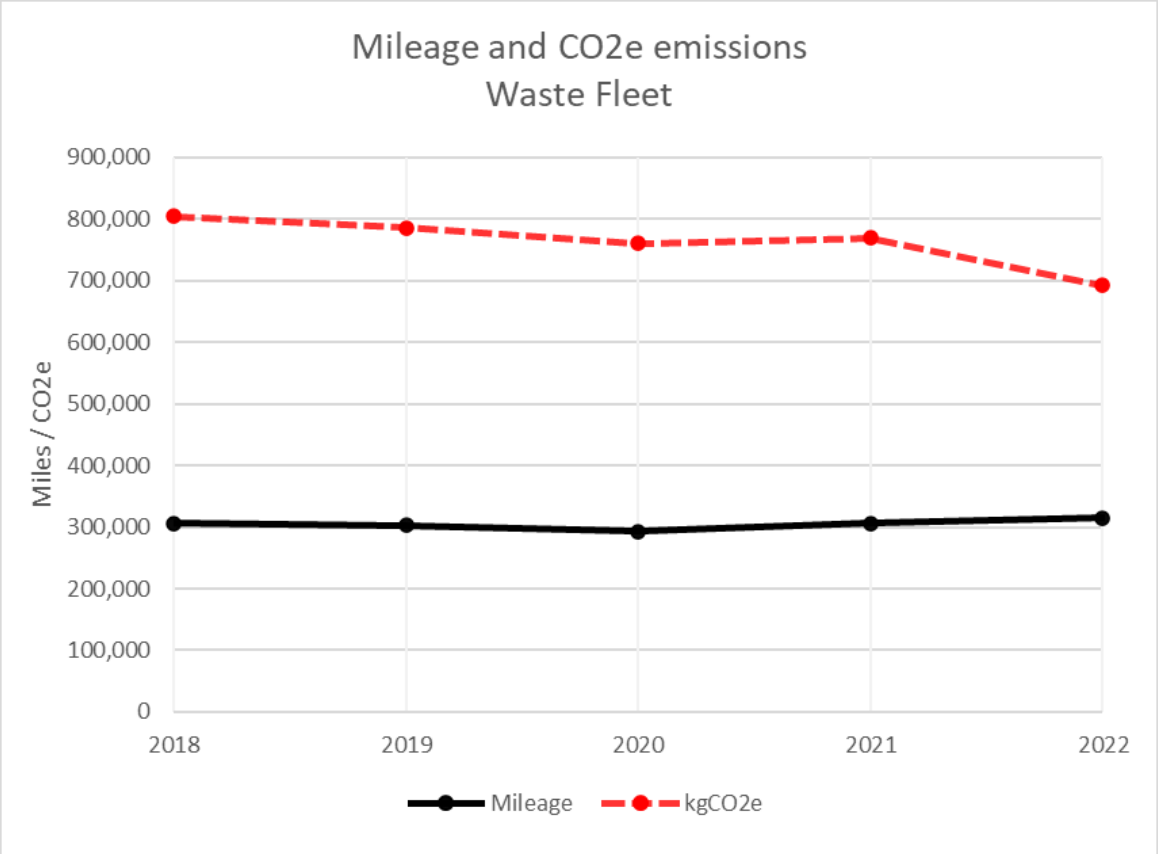


Chart 6 - Mileage and CO2e emissions from the Council's waste fleet



Measure 2: Reduction as far as possible towards net zero of district-wide greenhouse gas emissions (under scope of influence of local authorities)

The overall vision of Destination Zero is for the entire district to become net-zero carbon by 2050 at the latest. Progress against this target is monitored using the 'UK local authority and regional carbon dioxide emissions national statistics' provided annually by the Government's Department for Business, Energy and Industrial Strategy. For this measure the council use data showing territorial CO2 emissions estimates within the scope of influence of local authorities. As the data set is within the scope of local authorities it excludes emissions from large industrial sites, railways, motorways and land-use change. Data is provided from 2005 and the latest published data is for 2021.

Chart 7 below displays the total change in emissions over this period, it shows that in 2021 the district-wide carbon emissions stood at 378.7 ktCO2e. This represents a 27% decrease on the 2005 baseline. It should be noted that when the Destination Zero plan was published the latest data for 2005 provided an emissions figure of 507.2 ktCO2e. However, this figure has been revised through subsequent Government updates and is now 517.9 kt CO2e. The dip in emissions recorded in 2020 was primarily due to the impact of Covid-19 and associated its restrictions. However, there has been an observed bounce-back in emissions in 2021

Chart 8 displays the change in emissions from the main sectors included within the data. It shows that the domestic and transport sectors are the largest sources of emissions in the district. Domestic emissions have been falling steadily since 2005, although there was a slight rise in 2022/23 compared to 2021/22. Transport emissions have remained fairly consistent since 2005 but fell significantly during the 2020, reflecting the impact of Covid-19 restrictions. Transport emissions have subsequently risen again in 2021 but have not yet retuned to levels seen in 2019.

Chart 7 - Malvern Hills district-wide emissions (under the scope of influence of local authorities) since 2005

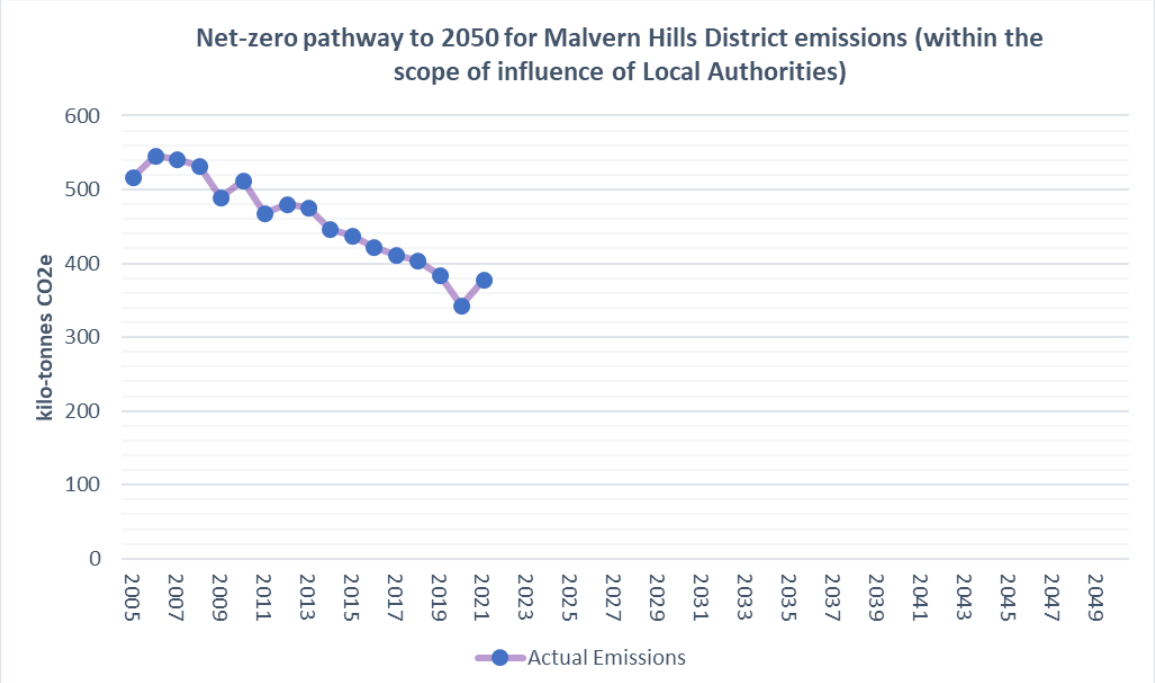
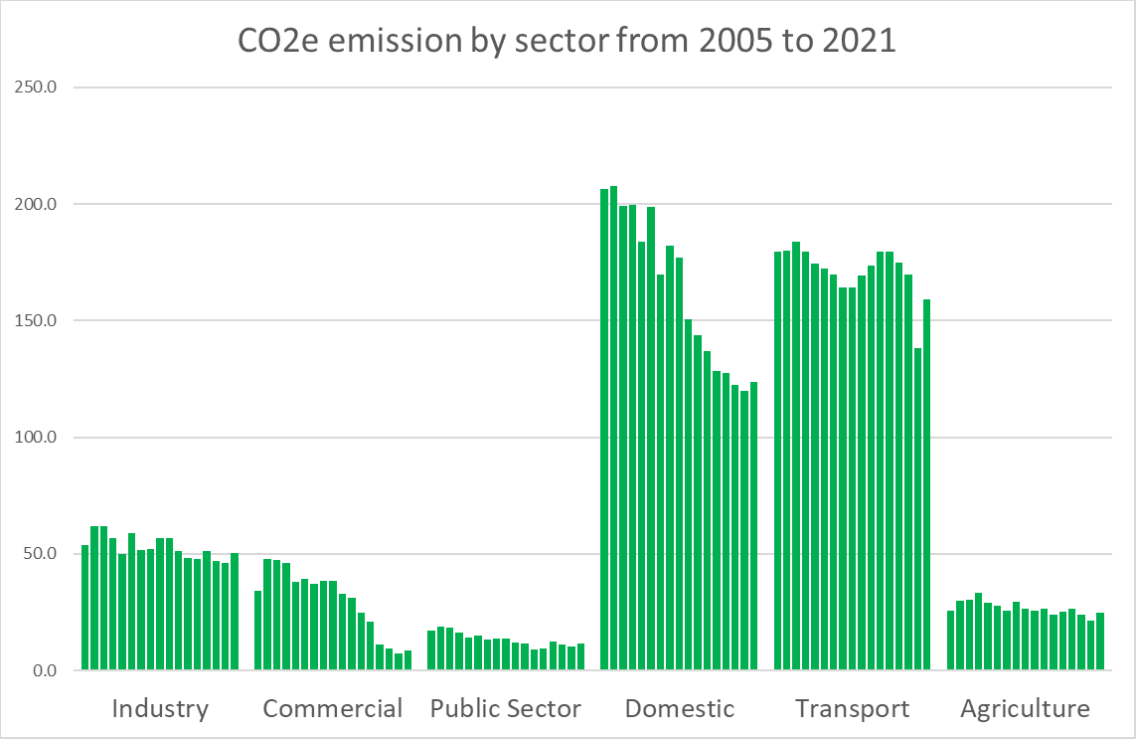


Chart 8 - Malvern Hills district-wide emissions (under the scope of influence of local authorities) by sector since 2005



Measure 3: Growth in size of the low carbon economy (to be defined)

A Low Carbon and Environmental Goods and Services Sector Study was published in April 2021 which was undertaken across nine midlands LEP areas including Worcestershire. The study was commissioned to understand the current state of the low carbon sector, where support is needed to help grow it and the role the sector can play in driving a low-carbon recovery from Covid-19. It also provides a baseline from which to measure future growth.

In 2019/20, the size of the low carbon sector in Malvern Hills was £105.3m in terms of sales. This was generated by 56 companies and 1,462 employees working in the sector.

The Council is currently developing a new economic vision for the district to set out how MHDC will deliver a sustainable growth plan for the future.

Measure 4: Increased amount of renewable energy generation across the district

Data to monitor against this measure is obtained by the Regional Renewable Statistics provided by the Government's Department for Business, Energy & Industrial Strategy on an annual basis.

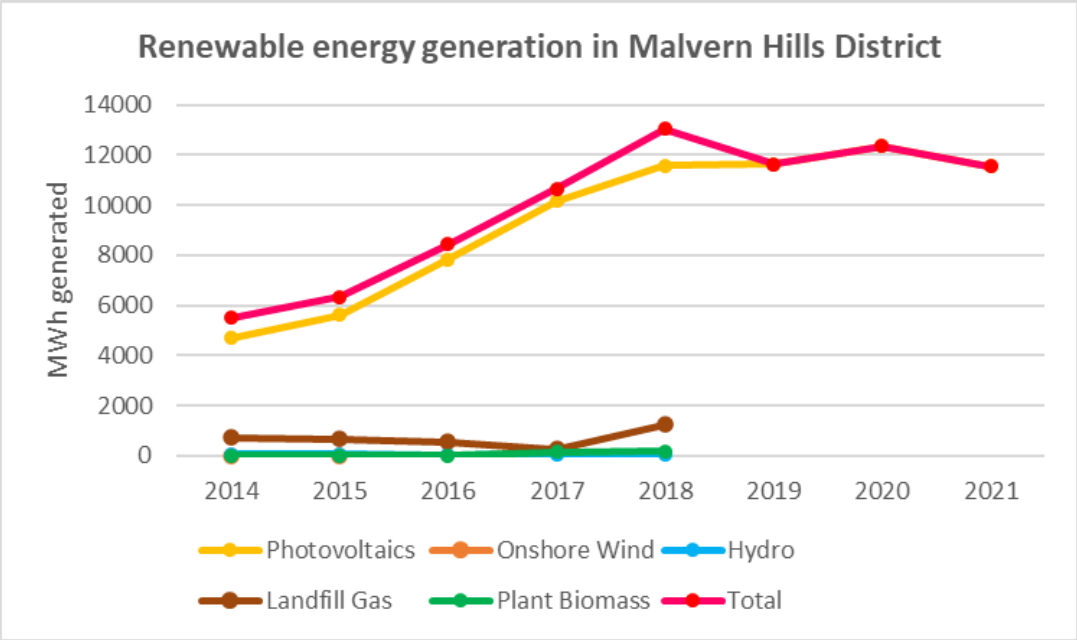
Progress is measured against the amount of renewable energy generated in the district. Chart 9 below shows that in 2021/22 the total energy generated was 15,317MWh representing a 178% increase from the 2014 baseline.

However, in the latest released by BEIS for 2021, data is no longer provided for certain energy sources beyond 2018, citing that the data has suppressed to prevent the output of

individual plants being revealed. For Malvern Hills district this has meant that we no longer have data provided for hydro, landfill gas and plant biomass beyond 2018, although there is generation from these sources still occurring. As a result, the energy generation reported for 2021 is lower at 11,542MWh. This also means that future figures are not going to be directly comparable to the original 2014 baseline.

As a result, solar photovoltaics is now shown as the sole source of renewable energy generation. Whilst in reality this is not the case, it still does represent the vast majority of generation in the district.

Chart 9 - Renewable energy generation in Malvern Hills district; both total generation and source



Measure 5: Increase in the amount of carbon captured through council action

The Destination Zero plan has a priority to use tree planting, pollinator sites, wetlands, wildflower meadows and other natural measures to capture and store carbon. As well as carbon sequestration this priority also has a range of significant environmental co-benefits, including protecting, enhancing and restoring biodiversity and habitats, adapting to the impacts of climate change and human health and wellbeing. The council also recognise that natural carbon storage measures will be important to help meet its own net-zero targets, balancing those emissions that it cannot completely remove by 2030.

Progress against this action will require longer term monitoring of the amount of carbon being captured as a direct result of projects and initiatives that the council progress, i.e. carbon that would not have otherwise been captured without intervention. The monitoring of this will depend on the type of project involved.

A key project for the council has been the purchase of 18 hectares of land near Hallow which will be gradually restored from its recent arable and improved grassland use to its former species-rich wet grassland habitat. This will enable greater amount of carbon to capture

within the site but will also have positive benefits for biodiversity and public enjoyment. However, to understand the amount of additional carbon that will be captured there will need to be a programme of monitoring over time.