



Net Zero Carbon Plan

County Council Emissions 2024-2025



worcestershire
county council



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1 Foreword

We want to play our role and give leadership through the Council's updated Net Zero Carbon Plan, which highlights how we, Worcestershire County Council, aim to reduce our own carbon emissions from Council operations and activities to net zero by 2050.

Unfortunately, we have seen the impact of climate change on both a global and local scale. Actions taken now to reduce carbon emissions will protect the earth, its inhabitants, and its unique biodiversity for future generations. Already we are experiencing hotter and drier summers, milder and wetter winters, and a significant increase in extreme weather events, from flooding to heatwaves and wildfires.

Reducing carbon emissions is key in the fight against climate change, and we acknowledge the Council has a significant role to play. We are committed to reducing our own emissions and using our influence to reduce countywide emissions with partners and stakeholders and supporting wider adaptation to future climatic changes. Our work on this is outlined in our Environmental Improvement Plan of which this Net Zero Carbon plan is a key theme.

We recognise the connectivity between our Net Zero commitments and other work areas and the Environmental Improvement Plan is pivotal in bringing these together under one umbrella. Impacts from the Environment Act 2021 like our Local Nature Recovery Strategy and forthcoming changes in waste and resource efficiency.

The Council declared a Climate Emergency in July 2021 and as part of this, a Net Zero Carbon Member Advisory Group (MAG) was established. The MAG expanded its mandate in January 2022 to include biodiversity as the Council recognises the clear link between climate change, reducing carbon emissions and protecting biodiversity. The group, which I chair, is exploring, and seeking to develop, the role of the County Council in tackling climate change across the county.

Our updated Corporate Plan, **Shaping Worcestershire's Future 2022-2027** supports our environmental ambitions under 'The Environment' priority – and reducing carbon emissions is key to this. The Corporate Plan states that we will continue to invest in environmental measures that reduce our carbon footprint.

The Council has been working to reduce our own carbon emissions over many years. Since 2009/10 the Council's own net carbon emissions have reduced by 45%. Much of this progress has been realised through improvements to our buildings, street lighting, and a shift from landfill to energy from waste for municipal waste disposal. We have taken significant action on our emissions reduction journey; from starting to invest in electric fleet vehicles, upgrading street lighting to LED and investing in renewable energy generation on our sites. Whilst this is not an exhaustive list, we realise that there is much more we need to do to reduce our emissions.

Whilst we look to show ambition and leadership our journey must be appreciative of certain constraints and practicalities

I would like to thank the cross party, Member advisory group and officers for their input and support.

Councillor Richard Morris
Cabinet Member with Responsibility for Environment



2 United Nations Sustainable Development Goals

The United Nations introduced the international Sustainable Development Goals (SDGs) in 2015. Adopted by all member states, they set out 17 Global Goals to achieve by 2030 – a blueprint to achieve a better and more sustainable future for all.

The Local Government Association (LGA) passed a motion in 2019 supporting the UN international Sustainable Development Goals (SDGs) and promoting the role of local government in delivering them. Worcestershire County Council identifies clear links with the SDGs to this Net Zero Carbon Plan, the Council's **Sustainability Policy** and **Corporate Environmental Reporting**.

All the SDGs go hand-in-hand and strive to deliver global prosperity whilst also protecting the planet.



3 Introduction

The Global and National Response to Climate Change

In 1995 a ground-breaking coming together of 198 countries known as The Paris Agreement set a global temperature goal to be achieved by each country. All nations acknowledged the need to limit global warming to 1.5°C above pre-industrial levels to prevent catastrophic climate change and irreversible loss of ecosystems and disastrous impact to human health and wellbeing.

The Intergovernmental Panel on Climate Change's (IPCC) is the leading international body to assess climate change and it provides scientific and technical guidance to the United Nations. It's 6th IPCC Assessment Report in 2021, it stressed it is unequivocal that human influence has warmed the atmosphere, ocean and land and that widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. The scale of these changes are unprecedented and this human induced climate change is affecting every region across the globe.

“We are on a fast track to climate disaster. Major cities under water. Unprecedented heatwaves. Terrifying storms. Widespread water shortages. The extinction of a million species of plants and animals. This is not fiction or exaggeration. It is what science tells us will result from our current energy policies.”

UN Secretary General, Antonio Guterres, 2022

The UK is also bound by UK law through the Climate Change Act, 2008 to reduce its emissions by at least 100% by 2050 on 1990 levels. To keep the UK on the pathway to achieving this, government set 5 yearly emissions caps or budgets with proposals and policies for meeting these carbon budgets.

In October 2021, the UK Government published their **Net Zero Strategy: Build Back Greener** which aims to reduce national emissions by 78% by 2035 from 1990 levels to meet the **Sixth Carbon Budget**. The UK's decarbonisation trajectory is further set out in **Powering Up Britain – The Net Zero Growth Plan** and **Powering Up Britain – Energy Security Plan** which were published in March 2023 to support and identify delivery of the Net Zero Strategy.

What is Net Zero Carbon?

Net zero carbon ^[1] means the amount of carbon dioxide equivalent (CO₂e) or other carbon compounds emitted into the atmosphere is reduced to zero because it is balanced by actions to minimise or offset these emissions, thereby achieving an overall balance between emissions produced and emissions removed from the atmosphere.

The focus of this plan is the Council's own emissions from its operations and activities. Worcestershire County Council (WCC) reports both absolute emissions and net emissions in its annual **Greenhouse Gas (GHG) report**. Absolute emissions are the total emissions from Council operations and activities which do not take into account any offsetting, whereas the Council's net carbon emissions data does take into account emissions offsetting.

^[1] Carbon emissions – includes carbon dioxide and other carbon compound gases in terms of CO₂e – carbon dioxide equivalent. Also known as Greenhouse Gases (GHG) including methane, that have the property of absorbing infrared radiation (heat energy) emitted from Earth's surface and re-radiating it back to Earth's surface, thus contributing to the greenhouse effect.

Dependencies

The ability of WCC to achieve net zero carbon emissions will be influenced by:

1. The Government ensuring a fully decarbonised electricity grid by 2035
2. The Governments phasedown of the gas network from 2035 to 100% by 2050
3. Technological development supporting availability of ultra-low and zero emission HGVs and gritter vehicles
4. The viability of carbon capture and storage (CCS) technology for our waste facilities in line with current UK government targets
5. Investment by WCC in knowledge and resource to:
 - improve the energy efficiency of property and street lighting;
 - transition to new non-fossil fuelled heating systems and fleet vehicles;
 - enable the generation of more renewable energy;
 - negotiate low or zero carbon service contract requirements.
6. The ability to offset carbon emissions. As the Council reduces its carbon emissions, offsetting requirements will be subsequently reduced.

Background

The Council has direct responsibility for cutting carbon emissions from its own operations and activities, and this is the focus of this Net Zero Carbon Plan. Through its own operations, WCC emits at least 1% of Worcestershire’s total emissions and influences many more. WCC also plays a fundamental role in addressing countywide carbon emissions, the impact of climate change on the county and how we adapt to future climate. The council is already taking a wide range of actions on this and is looking to develop this work further with partners. The Council’s Net Zero and Biodiversity Member Advisory Group is working with the Cabinet Member for the Environment to explore and seek to develop the role of the County Council in tackling climate change across the county.

WCC has **a long history of action on climate change** and led one of the UK’s first countywide climate change strategies in 2002, agreeing with partners to set and work towards what were then ambitious targets for countywide carbon emissions reduction, and adaptation to climate change. With urgency for rapid reduction of carbon emissions never greater, the Council recognises the need to take more ambitious action.

The **Worcestershire Climate Change Strategy** ended in 2020 and WCC is now working with the Worcestershire Local Enterprise Partnership (LEP) to deliver the **Worcestershire Energy Strategy**, which aims to halve countywide carbon emissions from 2005 levels by 2030.

Throughout the life of the Worcestershire Climate Change Strategy and the Council’s own carbon management plans (of which, this is the fifth plan), the Council has gained regional and national recognition through it’s work on generating hundreds of thousands of kilowatt hours of renewable energy, supporting residents and businesses to reduce their greenhouse gas emissions and, lobbied Government and worked with partners to improve the resilience of the county to the impact of climate change.

^[2] A carbon offset is a reduction of emissions of carbon dioxide or other greenhouse gas made in order to compensate for emissions made elsewhere.

On 15th July 2021, **Worcestershire County Council declared a Climate Emergency**, resolving the following:

- “ Council declares a climate emergency and commits to doing the following:**
- **Endorse the Council’s ambitious Net Zero Carbon Plan.**
 - **Continue to work with our partner authorities to review and update all relevant strategies.**
 - **Establish a Member Advisory Group to assist with the future revision of plan and report annually on actions taken.**
 - **This Council reaffirms the target of reaching net carbon neutral by 2050 in line with the Government’s target.**
- ”**

This plan outlines how WCC is seeking to cut carbon emissions from its property, transport and street lighting, as well as emissions from contracts, such as highways maintenance and municipal waste management, to net zero by 2050. The Council reports both absolute emissions and net emissions in its annual **Greenhouse Gas (GHG) report**.

A total emissions reduction of 40% has been achieved in terms of absolute emissions, and a reduction of 45% has been achieved in terms of net emissions since 2009/10. For clarity, this Net Zero Carbon Plan will focus on the Council’s net carbon emissions.

This document sets out progress to date and outlines the action that the Council will take to deliver on these net zero commitments. It builds upon the Council’s work over many years, taking into account new scientific information, policy developments and new technology to further respond to the climate emergency.

Everyone in the Council has a role to play in achieving net zero carbon emissions, and adaptation to future climate change, from deciding if and how to travel for work, to factoring carbon reduction and adaptation measures into service planning, procurement and service delivery.

4 Worcestershire County Council's Carbon Emissions

WCC publishes an annual Greenhouse Gas Report which includes the Council's:

1. absolute emissions; and
2. net emissions which account for offsetting (e.g. purchasing REGO ^[3] accredited green electricity).

The Council measures progress of the Net Zero Carbon Plan against the latter, which accounts for offsetting and the overall progress towards the net zero target.

The Council monitors and reports on carbon emissions from the following sources in line with the **Greenhouse Gas Protocol**:

SCOPE 1 Direct	SCOPE 2 Indirect (but WCC has direct control over how much electricity we use and what type we purchase)	SCOPE 3 Indirect
<p>Direct emissions from Council activities and operations under the Council's control including:</p> <ul style="list-style-type: none"> • Natural gas use in WCC buildings (excluding schools) • Fuel use in WCC vehicle fleet • Residual fuel use (e.g., burning oil, LPG etc.) consumed at WCC sites (excluding schools) 	<p>Indirect emissions:</p> <p>Electricity use in WCC buildings (excluding schools) and street lighting (grid generation)</p>	<p>Other indirect emissions for which WCC can access data for, including:</p> <ul style="list-style-type: none"> • Electricity (grid transmission and distribution) • WCC staff business mileage and air travel • Electricity/gas use in buildings operated by Council's main outsourced contractors for Waste Management and Highways • Fleet/staff mileage undertaken by main outsourced contractors for Waste Management and Highways • Contracted fleet vehicle fuel use • Emissions from county-wide municipal waste disposal

^[3] 100% renewable electricity with REGO (Renewable Energy of Guarantees of Origin) certification can be reported as zero emissions in Scope 2 (electricity generation) under the GHG Protocol.

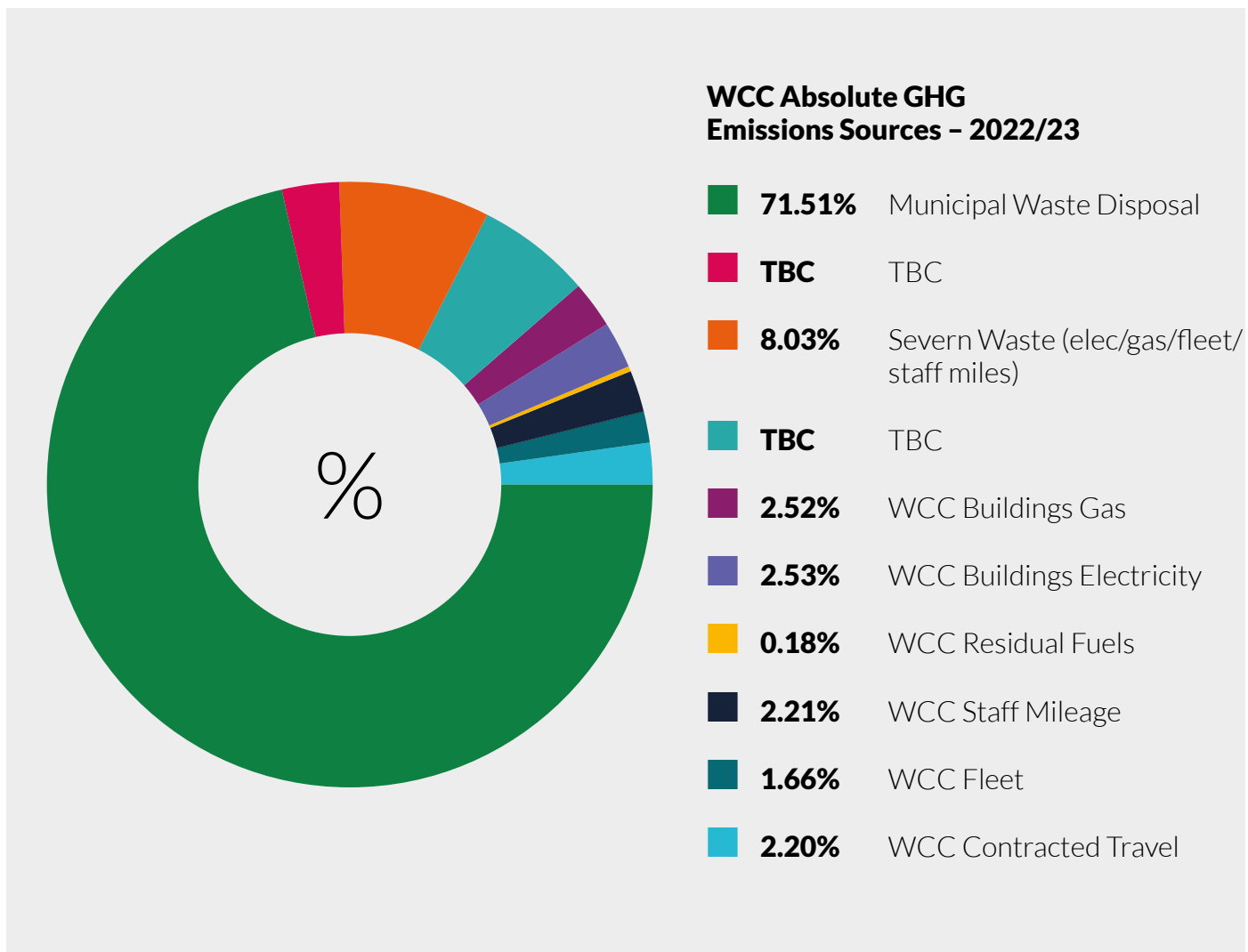
WCC GHG Emissions

The baseline year for WCC’s carbon emissions reporting is 2009/10:

SCOPES	Net GHG Emissions (tonnes/CO ₂ e) 2009/10 (baseline)	Net GHG Emissions (tonnes/CO ₂ e) 2022/23
Scope 1	4,598	2,008
Scope 2	16,672	0
Scope 3	55,266	40,357
Total Greenhouse Gas Emissions (tonnes/CO₂e)	76,536	42,365

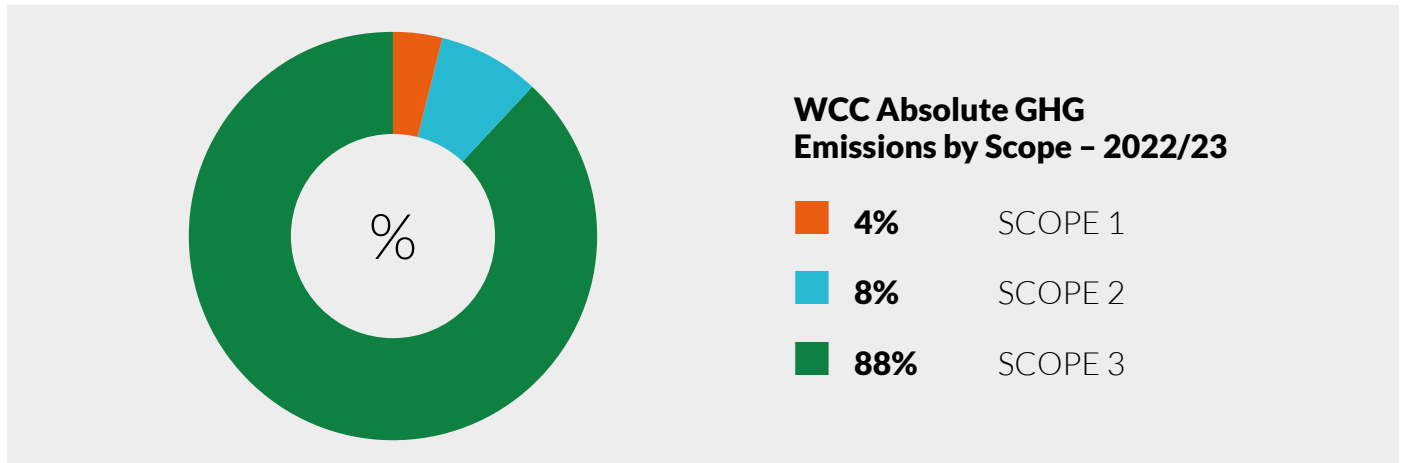
WCC Absolute GHG Emissions Sources – 2022/23

In 2022/23 Worcestershire County Council was responsible for absolute emissions of 45,984 tonnes of carbon dioxide equivalent (CO₂e) from the following sources:

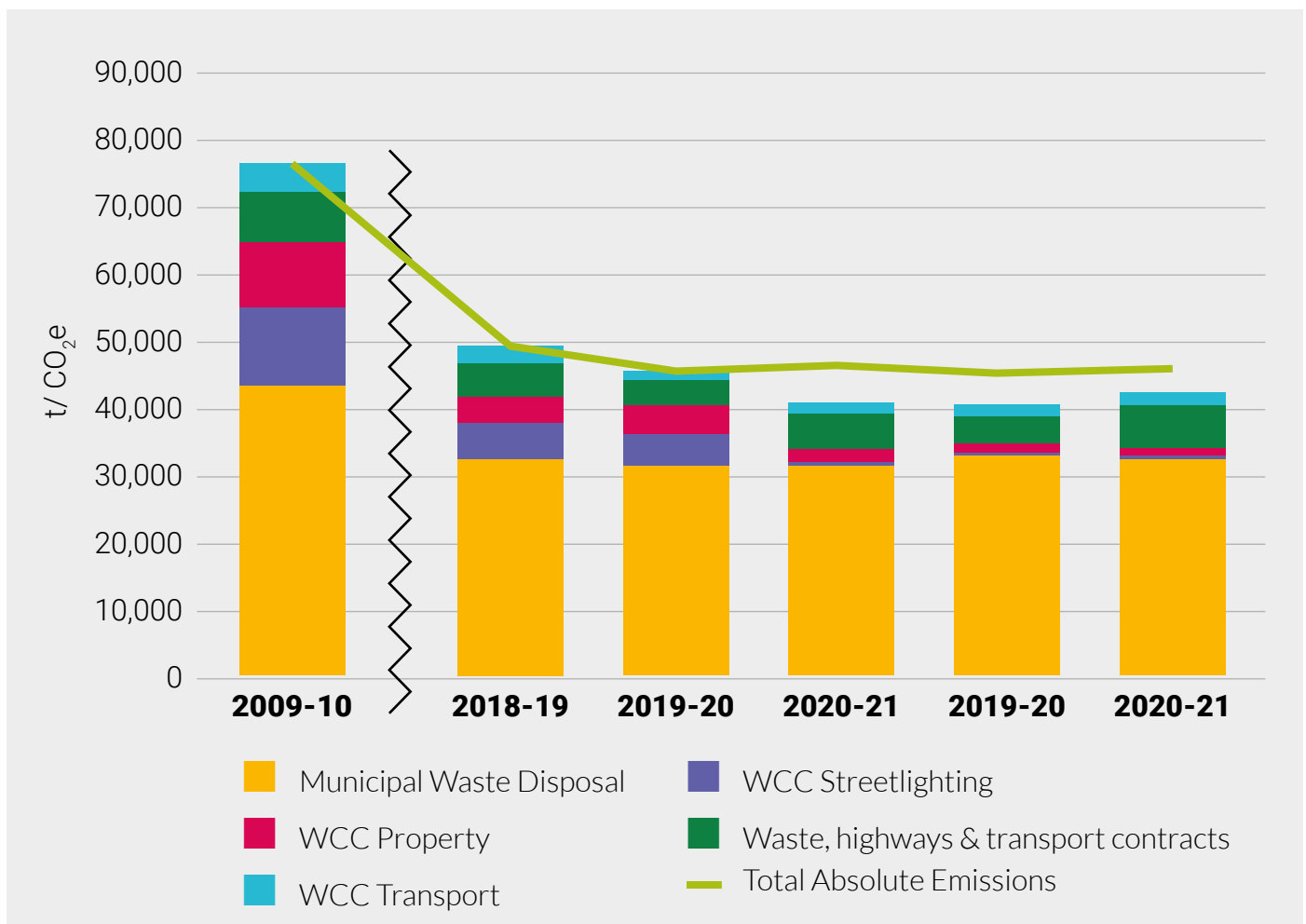


12% of these emissions were in the Council’s direct control (Scope 1 and 2), the remaining 88% were associated with sources not owned or controlled by WCC (Scope 3):

WCC Absolute GHG Emissions by Scope – 2022/23



Progress of WCC Net and Absolute Emissions from Baseline^[4]



^[4] For the period from 2010 to 2018 it is not possible to extract gas and electricity data for schools from corporate property data. This inability to extract data means it is not possible to accurately provide comparable emissions data with the baseline; for this reason, these years have been omitted from this report.

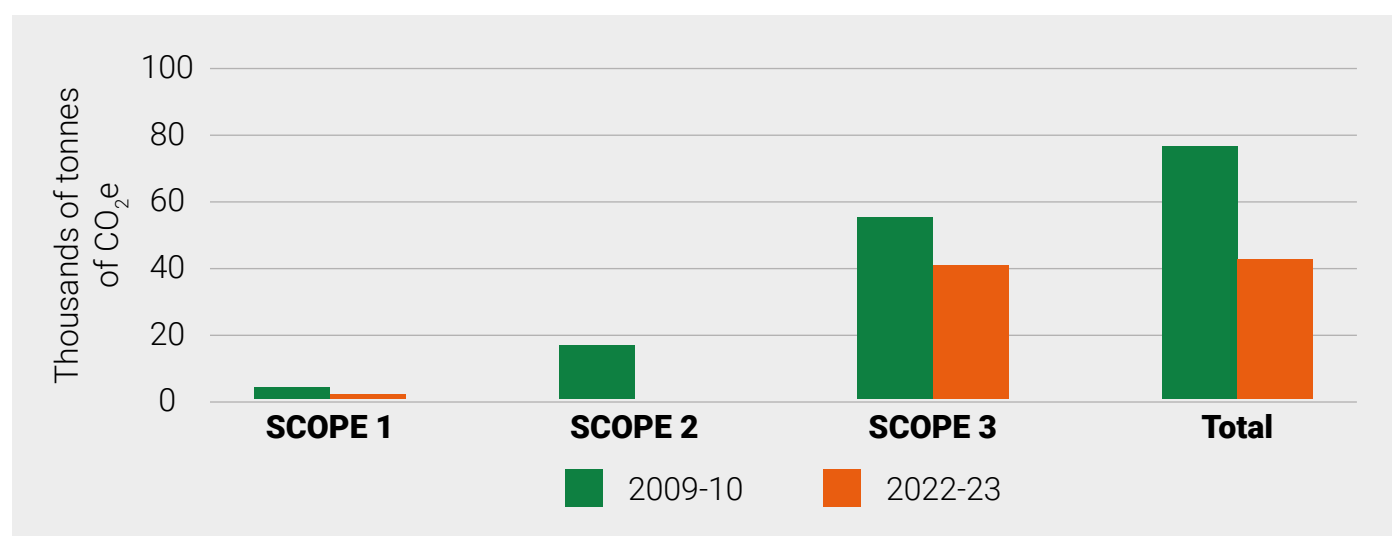
To date, a net emissions reduction of 45% has been achieved since 2009/10

Between April 2020 and March 2024, WCC committed to purchase accredited renewable electricity. During this period, all scope 2 emissions associated with the generation of this electricity is classes as a carbon offset for reportable purposes. From April 2024, WCC will review on an annual basis the best value option for procuring electricity.

The Council has reduced net Scope 1 emissions by 56%; Scope 2 emissions by 100%; and Scope 3 emissions by 27% respectively since 2009/10:

SCOPE	Net GHG Emissions (tonnes/CO ₂ e) 2009/10	Net GHG Emissions (tonnes/CO ₂ e) 2022/23	Reduction (tonnes/CO ₂ e)	% Net Reduction
1	4,598	2,008	2,590	56%
2	16,672	0	16,672	100%
3	55,266	40,357	14,839	27%
Total	76,536	42,356	34,180	45%

Net Emissions by Scope



The Council has direct control over emissions under Scope 1, and to an extent has some direct control over how much electricity it uses and what type of electricity it purchases under Scope 2. When accounting for these scopes, the Council has achieved a net emissions reduction of 91% since 2009/10:

SCOPE	Net GHG Emissions (tonnes/CO ₂ e) 2009/10	Net GHG Emissions (tonnes/CO ₂ e) 2022/23	Reduction (tonnes/CO ₂ e)	% Reduction
1	4,598	2,008	2,590	56%
2	16,672	0	16,672	100%
Total	21,270	2,008	19,262	91%

Carbon Emissions Currently Not Reported

WCC do not currently report on emissions from the following sources due to limited data availability and reliability:

- other contracted services e.g. care providers, financial services, construction, IT ‘cloud’ systems
- employee commute
- employee business travel by public transport
- WCC waste disposal from own corporate sites
- emissions from closed landfill sites
- production and transportation of procured goods
- investments, including employee pension fund
- leased WCC properties for which the Council do not pay the energy bill

WCC will work to establish reliable figures for these sources where possible. Where this is not possible, the Council will work to establish estimated emissions.

Emissions from schools are not reported ^[5]. As schools transition to Academy status, energy consumption data for these sites is not always possible for WCC to obtain.

^[5] The Council fully appreciates that schools contribute a significant amount of carbon emissions. Property Services currently supports and advises schools on energy efficiency and reducing associated carbon emissions through Service Level Agreements with county schools.

^[6] Baseline is 2009/10.

5 The Council's Approach to Net Zero

The Council's approach to achieving net zero carbon emissions is set out below.

WCC will:

- **ensure Council decisions consider the potential environmental impact of all WCC projects** – Council reports will include information on the environmental impact of all proposed projects. The completion of a Joint Impact Assessment (JIA), and any consequent full environmental sustainability assessment, will be required for all proposed projects. This will include assessment of carbon emissions
- **seek to reduce the Council's carbon emissions as far and as fast as possible and practical** by seeking first to:
 - avoid use of energy and other resources, then
 - use energy and other resources as efficiently as possible
 - use renewable energy
 - explore carbon capture and storage where appropriate
 - offset remaining carbon emissions as a last resort
- **offset emissions where necessary, prioritising local approaches to carbon offsetting** which lead to local environmental and/or social improvements
- **be flexible in its approach** – recognising there may be solutions for reducing emissions that are not yet available, or are not yet market ready or cost effective, which may become so in the future
- **seek to make Council operations zero-carbon ready**, for example, by making cost effective changes to heating systems and building fabric to ready Council buildings for heating by heat pumps or hydrogen, by installing further electric vehicle charge points etc.
- **seek to take the most cost-effective measures it can and not cost more to the taxpayer whilst seeking opportunity to generate income where possible**
- **communicate the challenge of climate change**; raising the awareness of residents and staff of the need to cut carbon emissions and improve resilience to climatic change, the Council's role in this and how everyone can play their part; linking into the Council's staff network of sustainability champions – the 'Zero Heroes'

- **share best practice with partners, working together with them where possible**
- **continue to play its role in cutting carbon emissions and promoting environmental improvement across the county**, initiating, leading and contributing to projects with partners, businesses and communities to achieve this aim
- **lobby Government** to provide the powers and resources needed to achieve its aim.

For each source of WCC carbon emissions, the following sections outline a carbon reduction target ^[6], current status, progress made to date and actions to be taken over the next two years.

The Net Zero Carbon Action Plan (Annex 1) details short term (up to 2 years) and longer-term actions required to achieve net zero emissions from the Council's operations and activities.

^[7] Use of sustainable materials, sustainable design, durability, energy efficiency and reduction and minimising carbon in the construction process etc

^[8] Funded by PSDS, these reports have been carried out on the majority of the corporate building estate

^[9] The UK Government publishes updates on energy and emissions projections. The latest full update is from 2019 - **Updated energy and emissions projections: 2019**. Low carbon generation sources (renewables, gas carbon capture and storage, and nuclear) are all set to increase. Renewables generation is projected to provide 56% of total UK grid electricity by 2040.

^[10] As of 2022 energy prices.

6 The Council's Estate – Property & Land

5% of the Council's absolute carbon emissions are from electricity and gas consumption in Council buildings. WCC operates from approximately 100 buildings, including offices, libraries, depots, care homes and Country Park visitor centres. As property owner, landlord and lessee, WCC's property management decisions have a significant impact on carbon emissions.

Energy prices have significantly increased over the last few years, particularly over the last 18 months. Heating and powering WCC buildings (excluding schools) cost £1.6 million in 2022/23, which, despite reducing gas and residual fuel consumption, was an increase of almost 25% on the previous year's fuel costs. Further action is needed to reduce the burden of increasing energy prices and the risk this poses to Council budgets.

Sustainable design ^[7] and decarbonisation reports ^[8] will support work on WCC's estate going forward, to continually progress decarbonising property and provide a greater understanding of the carbon impact of work carried out.

What have WCC achieved so far?

Net carbon emissions from energy use in WCC properties have reduced by 86% since 2009/10, due to:

- a move from higher to lower carbon heat sources e.g., from oil to gas, from gas to biomass
- reduction in carbon intensity of UK grid electricity^[9]
- contraction of WCC's property portfolio
- continued investment in energy efficiency of buildings through the Council's £3m Energy Efficiency Spend to Save scheme (which has been running since 2010 making savings of c£400k a year ^[10]) and the Capital Maintenance Programme
- investment in renewable energy systems:
 - wood fuelled biomass boilers in some properties, including County Hall and The Hive, generating approximately 1,700 MWh annually
 - solar power on several corporate properties (currently over 446kWp installed on corporate estate generating 296MWh per annum), and the Council has also installed Solar PV on many Worcestershire schools.
 - river water cooling and ground source heat
- energy efficient new build and refurbishment programme – including refresh of the Council's Sustainable Design & Estate Principles
- purchase of 100% renewable electricity for all Council buildings between April 2020 and March 2024
- successful bid to Salix Public Sector Decarbonisation Scheme 1 (PSDS) and investment of £817,177 grant

Project Spotlight – Salix Public Sector Decarbonisation Scheme (PSDS)

The Council applied for grant funding for energy efficiency and renewable energy measures from the Government-funded Salix PSDS in early 2020.

WCC successfully secured £817,177 for 34 discreet energy efficiency and renewable energy projects across 25 WCC sites. Measures installed included LED lighting improvements, glazing, insulation, solar PV panels on 2 sites, and Building energy management systems (BEMS) upgrades.

All projects combined will result in annual financial savings of c.£55,000 and annual carbon savings of 167 tonnes CO₂e.



Image: Additional solar panels installed at Kidderminster Library utilising grant funding from Salix

To achieve net zero emissions, WCC will:

- Review existing decarbonisation reports for WCC properties.
- With focus on underperforming EPCs in rental properties produce business case for proposed work to enable necessary EPCs for continued rental
- Identify Energy saving and decarbonisation measures in planned programmed works of WCC properties.
- Review options to purchase renewable electricity for 2025-26
- Update and implement Sustainability Design Guide
- Produce a Heating and Cooling policy for WCC properties

7 Street Lighting and Traffic Signals

6% of the Council's absolute carbon emissions are from electricity used to power the Council's 79,000 illuminated assets. This includes streetlights, illuminated signs, bollards and traffic signals. WCC purchase 100% renewable electricity (REGO accredited) and all Scope 2 emissions from electricity use are offset via this measure.

Powering Worcestershire's streetlights and traffic signals cost £3.38 million in 2022/2023.

What have WCC achieved so far?

Energy consumption has reduced, although the number of streetlights and lit assets continue to increase on previous years due to new residential developments in the county. Net carbon emissions from energy use in street lighting have reduced by 98% since 2009/10, despite an increase in the number of actual streetlights. The decrease is due to:

- replacement of street lighting luminaires with more energy efficient LEDs – switching to LEDs significantly reduces energy consumption and running/maintenance costs.
- all new traffic signals are now extra low voltage and LED – this makes it safer for maintenance as the equipment on site is only 48 volts and uses 79% less energy.
- 85% of the traffic signal asset is now LED.
- de-illumination of traffic signs during maintenance or replacement works and where regulations allow.
- procurement of 100% renewable (REGO accredited) electricity for all streetlights and illuminated assets.
- reduction in carbon intensity of UK grid electricity.

To continue achieving net zero emissions, WCC will:

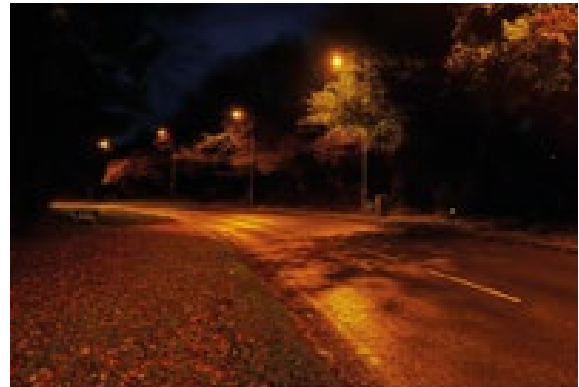
- Continue to purchase 100% renewable (REGO accredited) electricity (current contracted to March 2026).
- Light on demand where feasible
- Replace all traffic signals with LEDs by 2025
- Review further opportunities to invest in technology. e.g., smart lighting controls and management systems
- Review opportunities for green energy creation on street lighting assets, e.g., solar power.

Project Spotlight – Papermill Drive Redditch

Papermill Drive in Redditch is a small new residential development and was selected as one of the locations to install Amber LED lanterns. A countywide review was undertaken by WCC's ecology team and their consultants Jacobs, to highlight areas where blue light from LED's had potential to negatively impact on the ecological landscape.

An LED conversion programme where 21,000 Led conversionsso far have taken place, aims to reduce the impact on the ecological landscape whilst maximising energy and carbon savings without compromising highway safety.

To help mitigate against the impacts of blue light in sensitive areas, TRT Lighting (based in Redditch) were approached to source Amber LEDs which emit zero blue light. TRT supplied a range of Amber LED lanterns which also have a facility for manual on-site power adjustment within the lanterns negating the need for costly remote programming systems.



^[11] An Ultra Low Emission Vehicle uses low carbon technology and currently defined as having less than 75 grams of CO₂ per kilometre (g/km) from the tailpipe.

^[12] Cars and vans (under 3.5t): all new cars and vans significant zero emissions from 2030 and 100% zero emissions at the tailpipe from 2035. Heavy Goods Vehicles (above 3.5t): new trucks up to and including 26t to be zero emissions from 2035, with above >26t zero emission by 2040.

^[13] Where replacement with an Ultra Low Emission Vehicle is not possible, WCC to replace with a minimum EURO 6 standard vehicle.

8 Fleet Vehicles

1.6% of the Council's absolute carbon emissions are from WCC's 200 fleet vehicles, and fleet management and transport decisions have a significant impact on the Council's emissions.

Fuelling fleet and other Council-owned vehicles with petrol and diesel cost £441,500 in 2022/23. With significant fuel price increases experienced over the last few years, action taken now to reduce fuel consumption will lessen the financial impact of this trend. Investment in lower maintenance vehicles, such as electric vehicles, will also reduce maintenance costs significantly.

Gritters, followed by welfare minibuses, are the most significant sources of Council fleet emissions. Less than a quarter of WCC fleet vehicles meet EURO 6 standard. NOx and particulate emissions from the Council's vehicles are contributing to poor air quality. There are several air quality management areas in Worcestershire, including the whole of Worcester City.

Current UK legislation requires all new cars and vans to be 100% zero emission at the tailpipe by 2035.

What have WCC achieved so far?

Carbon emissions from WCC fleet transport have reduced by 43% since 2009/10 due to:

- reduction in number of fleet vehicles
- replacement of fleet vehicles with lower emission models, including 2 electric pool cars and an electric courier van. The Council installed chargepoints on County Hall campus to power these vehicles, and took part in a vehicle to grid electric vehicle (EV) charging trial at County Hall, in partnership with Cenex
- since 2020, 12 older minibuses have also been replaced with Euro 6 models, and 6 new more energy efficient gritters have replaced older models in the fleet.
- Incorporated energy efficient technique training within the services
- Developed a ULEV-first (ultra-low emission vehicle ^[11]) procurement policy and fleet investment decision process, developed and implemented through the Fleet Procurement Panel

To achieve net zero emissions, WCC will:

- Identify replacement ULEV vehicle options for WCC fleet.
- Produce a fleet replacement schedule compliant with Government transport decarbonisation plans^{[12][13]}.
- Where replacement with an Ultra Low Emission Vehicle is not viable, WCC to replace with a minimum EURO 6 standard vehicle.

9 Staff Business Travel

During 2022/23, staff travelled a total of 3,717,410 miles for work purposes in their own vehicles. Where staff use their own vehicles for work related travel, it is referred to as the Grey Fleet, this represents 2% of the Council's overall emissions. Grey fleet cost the Council £1.58 million in 2022/23. Grey Fleet had dramatically reduced in previous years due to the Covid-19 pandemic however, mileage has now increased back to pre-pandemic levels.

What have WCC achieved so far?

Carbon emissions from WCC staff travel for business purposes have reduced by 65% since 2009/10 due to:

- reduction in numbers of WCC staff claiming mileage
- adopted a hybrid model of working
- increased online meetings where appropriate
- provision of safe cycle storage and shower/changing facilities for staff to support active travel to work at County Hall campus
- Launched a Green Car Scheme - a salary sacrifice initiative to assist staff to adopt low and zero emission vehicles (56 active subscriptions)

To achieve net zero emissions, WCC will:

- Commence a county hall travel plan review – to promote sustainable travel to campus
- Review the number of electric vehicle chargepoints required in WCC car parks to allow staff to transition to electric vehicles.
- Update the existing Travel & Subsistence Policy to include a sustainable travel hierarchy for work related travel
- Secure a fully funded electric vehicle chargepoint operator for WCC estates

^[14] Carbon capture and storage (CCS) is the process of capturing and storing carbon dioxide (CO₂) before it is released into the atmosphere. The technology can capture up to 90% of CO₂ released by burning fossil fuels in electricity generation, industrial processes such as cement production and waste to energy plants. Based on **recent research** it is estimated this technology could be viable for installation before 2040.

Project Spotlight – WCC Cycle to Work Scheme

The Council's Cycle to Work scheme supports staff to purchase a new bicycle and cycling gear. Employees save 26-40% on the price and spread the cost, interest free, by enabling them to pay monthly through a salary sacrifice.

WCC have increased the limit to £3,000 to enable employees to have a wider choice, including electric bikes.



10 Municipal Waste Disposal

72% of the Council's absolute carbon emissions are from municipal waste disposal. This is by far the largest proportion of emissions WCC account for and currently appears one of the most difficult to reduce. WCC's role as a Waste Disposal Authority means the Council have control over how municipal waste is disposed of through the Waste Management Service contract.

Currently, 42% of the County's household waste is recycled or composted and most of the remaining waste is disposed of at EnviRecover, the Council's Energy from Waste (EfW) plant. Only a small proportion of the County's municipal waste is landfilled. The amount of waste produced by Worcestershire's households is increasing as the number of homes and population of the County grows. Close working with the Council's residents, waste management contractor and constituent Waste Collection Authorities is required to find a zero-carbon solution to municipal waste.

There are plans to build thousands more homes in the county over the next few decades and this will place an upward pressure on the amount of municipal waste generated and significant additional resources will be needed to prevent and reduce waste arisings.

Managing municipal waste, costs the Council approximately £30 million a year. Action taken to prevent municipal waste will reduce this cost as well as reducing carbon emissions associated with its disposal. Waste prevention is a cornerstone of the council's Joint Municipal Waste Management Strategy.

The National Resources and Waste Strategy (RWS) and Environment Act 2021 have introduced significant changes to the way the Council will be required to manage municipal waste in the future to support Net Zero. These measures include extended producer responsibility for packaging, a deposit return scheme and consistency in household and business recycling, which all aim to bring environmental benefits to the management of municipal waste. The Council and partner authorities will undertake a review of the Joint Municipal Waste Management Strategy to reflect the requirements of the new policy and legislative framework and reduce waste arisings. Understanding and calculating carbon impacts so that these can be reduced and mitigated will be a key part of that process.

There are a range of potential technologies that could be employed to reduce carbon emissions associated with municipal waste disposal. These include Carbon Capture and Storage^[14] (CCS) technology, which could potentially be retrofitted to EnviRecover in the future and could effectively reduce emissions by approximately 90%. Globally, this technology is emerging from development stage and will hopefully be market ready in the near future.

^[14] Carbon capture and storage (CCS) is the process of capturing and storing carbon dioxide (CO₂) before it is released into the atmosphere. The technology can capture up to 90% of CO₂ released by burning fossil fuels in electricity generation, industrial processes such as cement production and waste to energy plants. Based on [recent research](#) it is estimated this technology could be viable for installation before 2040.

What have WCC achieved so far?

Carbon emissions from the disposal of the county's municipal waste have reduced by 25% since 2009/10. This is mainly due to a significant reduction in waste sent to landfill following the opening of the EnviRecover EfW plant.

EnviRecover generates 135,000 MWh pa electricity, which is supplied to the National Grid. This is enough to power more than 38,500 homes the equivalent energy generation of around 29 on shore wind turbines.

Methane gas captured from the Hill and Moor landfill site is used to generate electricity.

A Mids net zero funded feasibility study is looking at the application of a CCS unit on our EnviRecover facility.

To achieve net zero emissions, WCC will:

- integrate requirement for carbon reduction into the Council's waste contract
- keep under review the viability of carbon reducing technologies (including CCS) for EfW with the aim of integration into EnviRecover
- Produce a feasibility study to identify carbon capture and storage options for EnviRecover
- Work in partnership with districts to implement changes to household waste collection outlined in Environment Act 2021
- Continue to promote waste prevention initiatives to households

Project Spotlight – Waste Reduction in Wychavon

Food waste is one of the biggest contributors to carbon emissions globally (if food waste was a country, it would be the third highest emitter of carbon after China and the USA!).

With over a third of Worcestershire's black bin waste being food, WCC is looking at new and innovative ways to encourage residents to cut the amount of perfectly edible food that ends up in the bin and teamed up in 2021 with environmental charity Hubbub and Wychavon District Council to trial fun and playful messaging to help people save money by eating all of the food they buy.

The results speak for themselves, with 93% of the people who took part in a #FoodSavvy challenge as part of the campaign now wasting less food.



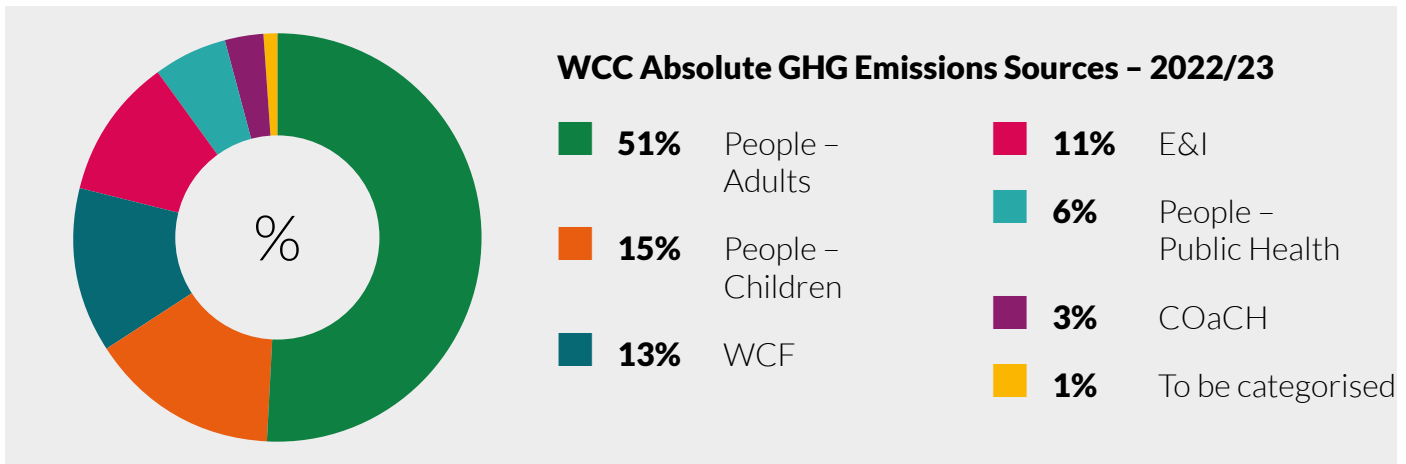
11 Supply Chain

Work with suppliers to cut associated carbon emissions

13% of the Council’s accounted absolute carbon emissions are from three major contracts: highways maintenance, waste management, (excluding emissions from waste disposal), and contracted fleet. The Council is aware there will be significant emissions associated with many other contracts and WCC investments too. For example, we understand that emissions from the Council’s social care contracts would be extremely significant based purely on costs alone.

The Council’s procurement and investment decisions have the potential to make a significant impact on WCC’s attributed emissions and have a far wider reach into the community.

An initial review^[15] indicated that the Council’s additional Scope 3 emissions come predominantly from the areas of Council delivery in the pie chart opposite. Moving forward, WCC will look to improve its reporting on supply chain emissions under Scope 3 over the lifetime of the Net Zero Carbon Plan. These initial estimates provide an insightful guide to the task ahead in terms of how the Council reports on, and seeks to reduce, supply chain emissions.



The carbon intensity and exposure to companies with fossil fuel reserves of the Worcestershire Pension Fund investment portfolio is detailed in its [Climate-Related Disclosures Report](#). (see project spotlight on the next page.)

What have WCC achieved so far?

Accounted net carbon emissions from the Council’s highways maintenance, waste management and fleet contracts have reduced collectively by 20% since 2009/10, due in part to:

- Reduction in carbon intensity of UK grid electricity
- Replacement of contractor’s vehicles with more energy efficient models
- Removed disposals and single use plastics from contract for Lakeside Restaurant.

^[15] Carbon review conducted by 4C Associates 2022

To achieve net zero emissions, WCC will:

- Review existing and future contracting requirements and develop a procurement policy for how WCC's supply chain will support the councils net zero ambitions.
- Where appropriate, signpost WCC suppliers to support with regards to carbon reduction.

Project Spotlight – Worcestershire Pension Fund Responsible Investment



Worcestershire Pension Fund, administered and managed by WCC, is a £3.6billion Local Government Pension Scheme fund.

The Fund has moved forward with responsible investment and Environmental, Social and Governance (ESG) activity since the previous Net Zero Carbon Plan in 2020.

In mid-2020, the Pension Fund agreed to focus on investments that contributed towards a number of agreed UN SDGs. A mapping exercise in 2020 highlighted how much of the Fund's assets were contributing towards the SDGs and it showed that £1.4billion of its £2billion of listed assets had exposure to SDG13 - Climate Action - through some of the most influential global companies contained within the World Benchmarking Alliance's SDG2000 benchmark. Further progress continues and is illustrated in our Climate Risk Report. In addition, the Fund held an ESG workshop on 8th February 2023 with one of its external ESG partners Pensions For Purpose to reaffirm its ESG beliefs which are detailed in its Climate Change Risk Strategy, review updates from investment Fund Managers and explore internal target-setting.

Partly to reduce its climate-related risks, the Fund transitioned out of a very carbon intensive passive equity fund and invested £200million in a climate multi-factor fund in 2021. This fund tilts away from companies that are carbon intensive or own fossil fuel reserves and directs investment towards companies that generate green revenues.

The Fund has delivered on its commitment to invest £150million into a Forestry Growth and Sustainability Fund and further invested into sustainable equity assets during 2022.



Staff and Member Awareness

The decisions that WCC staff and councillors make, from day-to-day activities to service planning, procurement and project development, have a significant impact on how far and fast the Council can reduce its emissions, and can also influence countywide carbon reduction to a greater or lesser degree.

What have WCC achieved so far:

- Staff training on sustainability and climate change has been provided over a number of years and includes face to face training and e-learning modules. Since 2021, the Council has been delivering Carbon Literacy training to staff
- Use of the Joint Impact Assessment (JIA) tool that requires review of environmental impacts (including carbon emissions), and is required for all new Council projects
- 'Net Zero sustainability champion scheme, including section on staff intranet and briefing sessions.

To achieve net zero emissions, WCC will:

- Review options for sustainability training for WCC staff, Senior Management, and Councillors.

13 Carbon Sequestration and Offsetting

Where the Council is unable to cut emissions fast enough, consideration will need to be given to offsetting or sequestering carbon emissions^[16]. Offsetting WCC's unavoidable emissions would involve compensating for emissions by paying for an activity that reduces or removes emissions elsewhere. Offset schemes must be independently verified and deliver additionality and permanence in the removal of carbon.

Where offsetting is necessary, local approaches to carbon offsetting, which lead to local environmental and or social improvements, will be prioritised. Options include:

- Increase carbon storage capabilities through land restoration and planting schemes.
- Investment in renewable energy generation either on WCC land, elsewhere in the county or the UK review of land holdings in consultation with partners

Project Spotlight – New Farm Tree Planting

The Council has committed to planting 150,000 trees on its own land up to 2025. To date, over 50,000 trees have been planted with more due to be planted winter 2023/24.



Worcestershire County Council has created the New Farm (Project ID: 104000000028723) to reduce the net greenhouse gas balance of the estate. The project has listed 8,986 Pending Issuance Units (PIU's) representing 8,986 tonnes of carbon dioxide which is expected to be sequestered between 27 Feb 2007 and 27 Feb 2122^[17].

Once verification has taken place to ensure the scheme is performing as expected, the PIU's are converted to Woodland Carbon Units (WCU's) and can be used to offset emission in the allotted verification years.

This programme will sequester 8,986 tonnes of CO₂ over the 100 lifetime of the scheme an average of 89 tonnes CO₂ a year over 100 years (0.2% of current emissions).

Offsetting through the use of tree planting is a highly monitored system with only certified schemes being included. WCC have registered its scheme with the Woodland Carbon Code and is therefore able to offset the prescribed amount of carbon in this way. This will bring extensive benefits for the wider Worcestershire area including improving air quality, resilience to future climate change and supporting biodiversity.

^[16] Carbon Sequestration – the removal and storage of carbon from the atmosphere in plants, soils and geological formations.

^[17] The Units registered are Pending Issuance Units which must be verified before they are turned into Woodland carbon units (WCU's). A WCU is a tonne of CO₂e which has been sequestered in a WCC-verified woodland. WCU's can be used to offset, an organisation's current Greenhouse Gas emissions.

Verification years ^[18]	Verification date	PIUs to Project*
5	27.02.2027	46
15	27.02.2037	494
25	27.02.2047	2,215
35	27.02.2057	2,224
45	27.02.2067	1,398
55	28.02.2077	949
65	28.02.2087	477
75	28.02.2097	366
85	28.02.2107	315
95	28.02.2017	426
100	27.02.2122	106
Total		8,986

* 1 PIU is equal to 1 WCU and 1Tonne of CO2.

^[18] Years since project start date.



14 Resources

The council recognises that financial investment will be required over the lifetime of the journey to become Net Zero by 2050 and acknowledges that financial pressures on local government are significant. We will therefore develop business cases for all activities which will be prioritised by the council and funding sought, ensuring we explore all possible funding mechanisms to enable us to deliver this strategy including:

- Build a pipeline of fundable projects to take advantage of external funding opportunities as they arise
- Make applications for grant funding to central government programmes e.g Public Sector decarbonisation Scheme
- Investigate the feasibility of using local climate bonds as a potential route of investment for Net Zero projects
- Consider all investment opportunities including private sector investment, Green bonds and public sector borrowing
- Work with partner to develop funding applications and joint projects where appropriate.

15 Governance

This plan is overseen by the Council's Sustainability Board, which acts as the main programme board for sustainability, carbon and biodiversity action across the organisation. The Board meets regularly to review progress of actions, with updates provided by officers of the Council where appropriate.

The board has senior level representation from each directorate, including key functions such as: Waste Management, Property Management, Fleet, Procurement, Finance, IT, Communications, Learning and Development, and the Countryside Service. Members of the Board provide a strategic level review role to ensure the Net Zero Carbon Plan (amongst other Sustainability objectives of the Council) are realised. The Sustainability Board reports to the Council's Senior Leadership Team (SLT). An annual report is also presented to Full Council by the Cabinet Member for the Environment, which includes an update on progress of the Net Zero Carbon Plan.

The Cabinet Member also chairs the Member Advisory Group on Net Zero Carbon and Biodiversity, which has clear links to the Sustainability Board.

A live ongoing action log will be kept detailing progress on short/medium-term actions from the Net Zero Carbon Plan; new actions will also be added to the log as time progresses. The action log will be reviewed by the Board at their regular meetings. WCC also publish an **annual GHG emissions report** to track progress towards the net zero target.

The Council's Environment Overview and Scrutiny Panel also examines the Council's work on Net Zero Carbon, and the Council's Internal Audit is also part of the programme of governance of the Net Zero Carbon Plan.

This plan will undergo a risk assessment and Joint Impact Assessment, as all new Council projects, programmes and plans do, to assess the potential impacts of the Plan in respect of data protection, equality, public health and environmental sustainability.

Annex 1 & 2

Worcestershire County Council
Net Zero Carbon Action Log 2024-2025

Worcestershire County Council
Carbon Reduction to date
and Projected



Annex 1

Worcestershire County Council – Net Zero Carbon Action Log 2024-2025

The action log is a live document which will be maintained, detailing progress on short/medium-term actions from the Net Zero Carbon Plan. Actions may be amended and added as time progresses, due to projects being subject to external conditions, changes in policy and funding availability. The action log will be reviewed by the Sustainability Board at regular meetings, and the board will take decisions on the amending, removal and addition of new projects to the action log in line with the approved Net Zero Carbon Plan.

Function	Action Description	Resources	Completion Date
Estate Buildings	Review existing decarbonisation reports for WCC properties.	Property Services Team	Jun 2024 (Qtr1)
	With focus on underperforming EPCs in rental properties produce business case for proposed work to enable necessary EPCs for continued rental.	Property Services Team	Sep 2024 (Qtr2)
	Identify Energy saving and decarbonisation measures in planned programmed works for WCC properties.	Property Services Team	Mar 2025 (Qtr4)
	Review options to purchase renewable electricity for 2025-26.	Commercial Team	Sep 2024 (Qtr2)
	Update and implement Sustainability Design Guide.	Property Services Team	Jun 2024 (Qtr1)
	Produce a Heating and Cooling policy for WCC properties for review and implementation.	Property Services Team	Sept 2024 (Qtr2)
Street lighting & lit assets	Purchase 100% renewable electricity for 2024-25.	E&I Revenue Budget	Apr 2024 (Qtr1)
WCC Fleet	Identify replacement ULEV vehicle options for WCC fleet (taking technological advances into account).	Fleet Management	Dec 2024 (Qtr3)
	Produce a fleet replacement schedule compliant with Government transport decarbonisation plans ^[19] .	Fleet Management	Mar 2025 (Qtr4)

^[19]Cars and vans (under 3.5t): all new cars and vans significant zero emissions from 2030 and 100% zero emissions at the tailpipe from 2035. Heavy Goods Vehicles (above 3.5t): new trucks up to and including 26t to be zero emissions from 2035, with above >26t zero emission by 2040.

Function	Action Description	Resources	Completion Date
Grey Fleet (staff business travel)	Update the existing Travel & Subsistence Policy to include a sustainable travel hierarchy for work related travel.	HR Operations & Delivery Team	Mar 2025 (Qtr4)
	Commence a county hall travel plan review – to promote sustainable travel to Campus.	Transport Planning Team	Mar 2024 (Qtr4)
	Review the number of electric vehicle chargepoints required in WCC car parks to allow staff to transition to electric vehicles.	Property Services Team	Jun 2024 (Qtr1)
	Secure a fully funded electric vehicle chargepoint operator for WCC estates.	Property Services Team	Jun 2024 (Qtr1)
Waste	Produce a feasibility study to identify carbon capture and storage options for EnviRecover.	Waste Management Team	Mar 2025 (Qtr4)
	Work in partnership with districts to implement changes to household waste collection outlined in Environment Act 2021 (food waste, streamlined recycling etc).	Waste Management Team	Mar 2025 (Qtr4)
	Continue to promote waste prevention initiatives to households.	Waste Management Team	Mar 2025 (Qtr4)
Procurement, Supply Chain and investments	Review existing and future contracting requirements and develop a procurement policy for how WCC's supply chain will address the councils net zero ambitions.	Procurement	Mar 2025 (Qtr4)
Carbon Offsetting	Undertake tree planting registered with the Woodland Carbon Code accredited scheme.	Countryside and Green Space Team	Mar 2025 (Qtr4)
Awareness and training	Review options for sustainability training for WCC staff, and Senior Management.	Sustainability Team	Dec 2024 (Qtr 3)

Annex 2

WCC Carbon Reduction to Date and Projected

	Baseline & 2021/22 Net Emissions			Net Emissions Reduction Milestones to 2050					
	2009/10	2022/23	% Change	2024/25	% Change	2029/30	% Change	2049/50	% Change
All									
Municipal Waste	43,566	32,884	-25%	32,883	-25%	33,965	-22%	3,600	-92%
Waste, Highways & transport contracts	7,494	6,120	-18%	5,655	-25%	3,498	-53%	0	-100%
WCC Property	9,070	1,343	-86%	1,263	-87%	1,017	-90%	0	-100%
WCC Transport and staff travel	4,221	1,784	-58%	1,554	-63%	514	-88%	3	-100%
WCC Street Lighting	11,547	234	-98%	227	-98%	189	-98%	0	-100%
Total	76,535	42,365	-45%	41,581	-46%	39,183	-48%	3,603	-95%
Scope 1 & 2									
WCC Property	9,235	1,246	-87%	1,205	-87%	1,017	-89%	0	-100%
WCC Fleet Transport	1,335	762	-43%	488	-63%	67	-95%	0	-100%
WCC Street Lighting	10,700	0	-100%	0	-100%	0	-100%	0	-100%
Total	21,270	2,008	-91%	1,693	-92%	1,085	-95%	0	-100%

N.B. Assumptions:

- Continued purchase of 100% REGO accredited renewable electricity for street lighting.
- Average 3% annual improvement in property energy efficiency^[20].
- Fully decarbonised electricity grid by 2035.
- Phasedown of gas network from 2035 to 100% by 2050.
- Aspiration to achieve 3% annual emissions reduction of contracted services and additional reductions resulting from UK grid decarbonisation and ULEV targets.
- Projected municipal waste emissions related to projected number of households in the County to 2040 inline with current predictions.
- Carbon Capture and Storage operational at Energy from Waste plant.

^[19]To be achieved via rationalisation of the estate and reduced energy demand.



Find out more online:
www.worcestershire.gov.uk