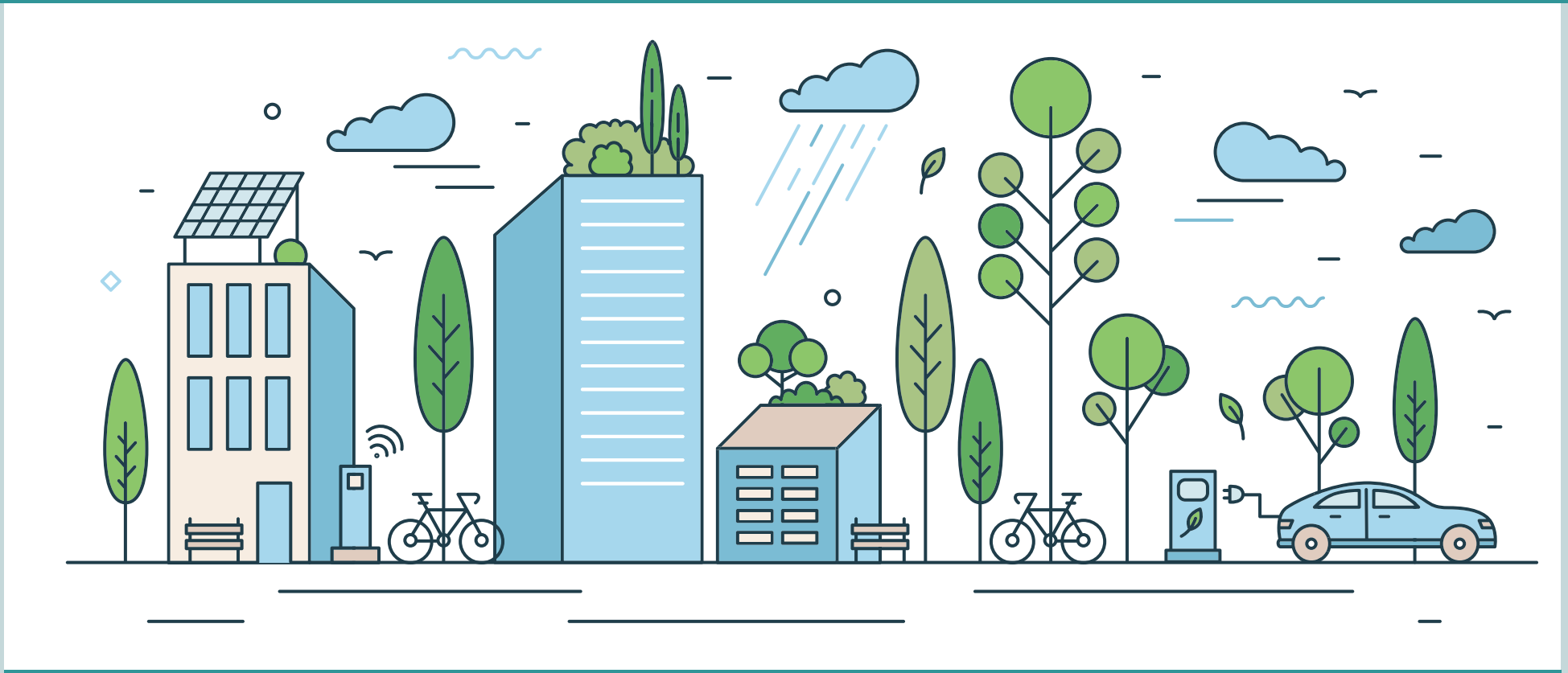
Herefordshire Council

Aiming for 2030:

Herefordshire Council Carbon Management Plan 2026/27-2030/31



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Executive summary

Herefordshire Council has made significant progress in reducing its carbon emissions from operational activity. The 2024/25 figures demonstrate a 64% reduction from the 2008/09 baseline. This Carbon Management Plan details a continuation of this work for 2026/27 to 2030/31 and sets out how the council can continue to reduce its emissions, and achieve further savings by the end of this period.

This plan supports the Herefordshire Council Plan 2024-28 priorities and aims to reduce carbon emissions and achieve improved energy efficiency, energy resilience and costs savings. The Carbon Management Plan is a key enabler towards these goals. Target benefits include:

- Improving the energy efficiency of buildings to reduce council expenditure and secure energy resilience.
- Increased use of renewable energy where appropriate to support energy and business resilience of the organisation, reducing reliance on price-volatile imported fuel supply, and delivering long-term savings.
- Maximising potential for reduced air pollution to improve public health, particularly older population with respiratory conditions, and younger children.

The 2024/25 figures show total emissions of 5,357 tonnes of carbon dioxide eqivalent (tCO_2e). Significant contributors to these emissions include:

- Waste Collection: 1,255.8 tCO_2e
- Commuting & Homeworking: 957.6 tCO_2e
- Gas use in Council buildings: 705.3 tCO_2e
- Public Realm Contract: 610.3 tCO_2e
- Council Fleet: 108.4 tCO_2e

The plan explores opportunities to further reduce carbon emissions while delivering high quality services across a large rural area. It also sets how the established reporting procedures are used to track the council's emissions.

A five step process has been used to identify and develop actions that will reduce emissions:

1. **Define and measure emissions**
2. **Identify how to use less energy**
3. **Consider options for switching to a lower emissions fuel**
4. **Business case, investment and cost analysis**
5. **Identify residual emissions for offsetting**

The actions outlined in sections 4 and 5 specifically identify ways to reduce emissions and include an estimate of the associated costs. The plan draws together actions from across the council, its employees and contractors. Actual delivery will depend on more detailed feasibility appraisal, project design and development of specific business cases.

Some significant operational changes are expected over the period of this plan and the potential impact of these are outlined. This includes anticipated changes to the Public Realm which will give the council additional control over the associated emissions.

The council has limited control over some carbon emissions sources and those emissions likely to remain by 2030/31 have been estimated. The council's residual emissions can be considered for offsetting to deliver its goals by 2030/31. Potential offsetting routes include exported electricity from rooftop solar installed on council buildings.

Solar panels on the roof of the Herefordshire Archive and Records Centre

1. Introduction

Herefordshire Council is aiming to deliver significant benefits through this Carbon Management Plan including increased energy efficiency and resilience, cost reduction, air quality and environmental improvements.

Energy market instability in recent years has caused supply challenges and price volatility. The council has an ongoing need to secure the best value for local people, and within its clear ambitions to improve the environment and make Herefordshire the best possible place to live, work, visit and invest.

Action to reduce carbon emissions will continue to deliver energy, cost management and environmental benefits.

National policy context is also relevant to Herefordshire Council's ambition for carbon reduction:

- **2008:** the UK Parliament enact the Climate Change Act, a legally binding framework for action on climate change including reduction of greenhouse gas (GHG) emissions.
- **November 2024:** at the United Nations Framework Convention on Climate Change (UNFCCC) conference of parties (COP29) the UK announce an updated Nationally Determined Contribution to reduce economy wide emissions by at least 81% compared to 1990 levels.

This carbon management plan focuses on how Herefordshire Council will contribute to key local goals and wider national objectives by 2030.

Relevant legislation and documents include:

- The future is green: the economic opportunities brought by the UK's net zero economy, February 2025 - a report from the Confederation of British Industry (CBI).
- What Is Climate Change? - United Nations
- Climate Change Act 2008
- Agenda item - NOTICES OF MOTION UNDER STANDING ORDERS - Herefordshire Council
- UK's 2035 Nationally Determined Contribution (NDC) emissions reduction target under the Paris Agreement - GOV.UK

This plan:

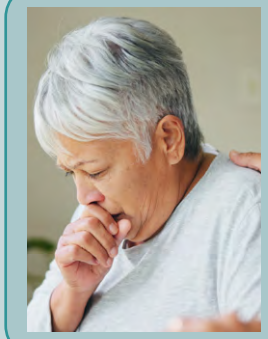
- Details the source and quantity of emissions
- Describes how the emissions can be reduced
- Identifies opportunities and challenges for delivering emissions reduction
- Outlines those actions that deliver emissions reduction and estimates associated costs

1.1 Council targets

This Carbon Management Plan will guide the council's reduction in emissions, by the end of the 2030/31 financial year. This plan does not apply to emissions produced across all of Herefordshire. The council's own emissions are less than 1% of the county total.

1.2 Rationale for emissions reduction

Reducing carbon emissions supports council priorities and the recognised need to manage energy usage, efficiency and costs, while increasing supply options and thus long-term sustainability and resilience. In addition, there are other factors that support action on emissions:



Air quality is the largest risk to public health in the UK[1] and a major contributor is exhaust emissions from burning fossil fuels. Emissions reduction has a public health benefit and reduces the cost to the NHS of treating related illnesses. The estimated cost in 2017[2] was £42.88m.

Investment in emission reduction stimulates local economic activity. Improving the energy efficiency of existing buildings and installing small-scale renewable energy solutions supports skilled trades including electricians, heating engineers, builders and suppliers of these materials.

[1] **Health matters: air pollution** - GOV.UK

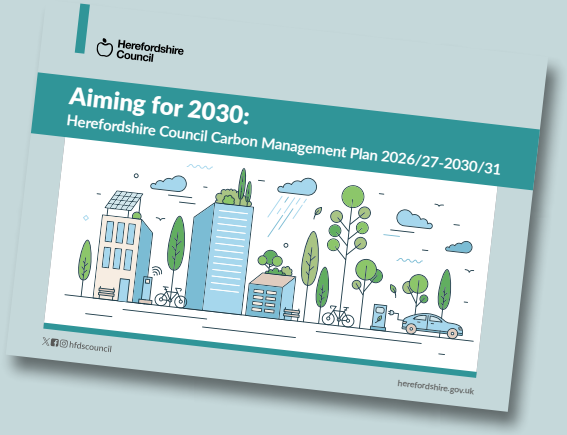
[2] **Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report**

1.3 The Herefordshire Council Plan 2024-28

The Herefordshire Council Plan[3] sets out how the council will deliver its services and its priorities for the county between 2024-28. This is organised into four themes: People, Place, Growth and Transformation.

The Place theme aims to "protect and enhance our environment and ensure that Herefordshire remains a great place to live".

This Carbon Management Plan sets out how the council will reduce its own emissions and progress towards delivering its Council Plan and ongoing efficiency priorities.



The Transformation theme states that "We are on a transformation journey to be a sustainable, modern and fit for the future council".

One of the six priorities of the Transformation theme is to "Change and transform the organisation to be fit for the future and work efficiently". This Carbon Management Plan contributes towards this priority by addressing the council's energy consumption and working practices to lower emissions and improve efficiency.

[3] The Herefordshire Council Plan 2024-28

2. Council emissions

The council consumes energy to operate the buildings and vehicles required to deliver the services it provides. The type of energy and how much is used determines the quantity of emissions.

2.1 Emissions reporting

Reporting follows the principles of the international standard, the Greenhouse Gas (GHG) Protocol and began in 2008/09 providing a baseline year from which to measure progress.

The purpose of emissions reporting is to:

Reporting informs both delivery and monitoring of this Carbon Management Plan.

The GHG Protocol categorises emissions as being within one of three Scopes:

Scope 1: Direct fuel use in council buildings and vehicles e.g. gas boilers or diesel vans

Scope 2: Emissions from imported energy.
For the council this is electricity only and is supplied from renewable sources

Scope 3: Emission sources outside of the council's direct control but essential to the council's service delivery.
This includes emissions from employee travel and (scope 1 & 2) emissions of delivery partners such as FCC Environment who collect household waste

2.2 Organisational boundary

The 'organisational boundary' specifically outlines the emissions sources included in reporting. As the purpose of reporting is to drive change, the boundary has been defined based on where the council has control to deliver reductions. Herefordshire Council's operational boundary includes:

Fleet

The council's own vehicles that it operates directly.

Estate

The offices, public buildings and street lighting.

Derived factors

The emissions produced delivering the energy to the council's fleet and estate. They include transmission & distribution (T&D) losses within the electricity grid and well-to-tank emissions, resulting from the extraction, processing and transport of fuels like diesel.

Employees

Emissions produced by council employees as they deliver services, such as business mileage in private cars.

Contracts

Those services that the council outsources to specialist contractors, such as waste collection.

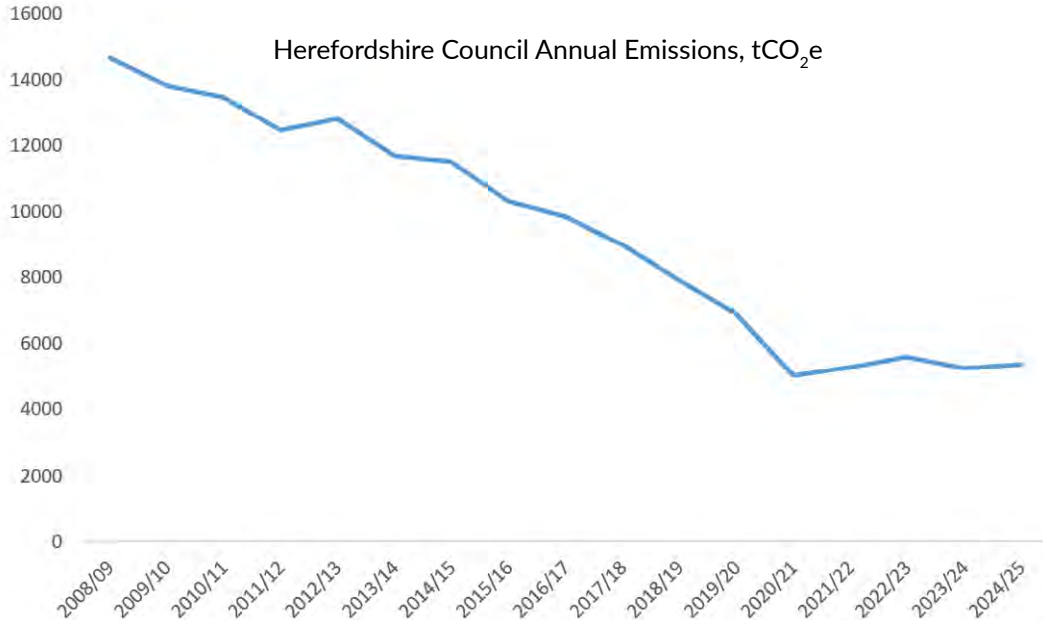
Offsets

These are council operations that reduce emissions outside of the council's organisational boundary and are used to balance out emissions that cannot be eliminated.

2.3 Emissions in 2024/25

The council's emissions in 2024/25 were 5,357 tCO_2e.
This is a 64% reduction from the 2008/09 baseline.
This does not include any offset.

Technical details of the emissions reporting and baseline calculations form Appendix I.



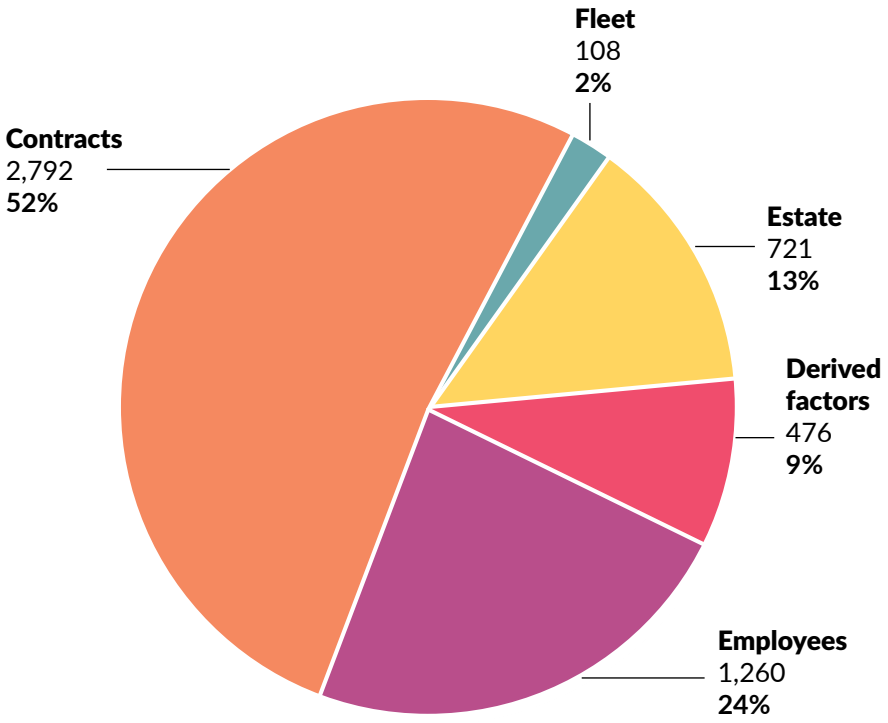
2024/25 emissions by group, source and scope

Group	Scope	Source	Tonnes CO2e	% of Total
Fleet	1	Council fleet	108.4	2.0%
Estate	1	Buildings - gas	705.3	13.2%
	2	Buildings - electricity	8.1	0.2%
	2	Street lighting	0.0	0.0%
	3	Buildings - Water & sewerage	7.5	0.1%
Derived factors	3	Transmission & Distribution - Buildings	58.8	1.1%
	3	Transmission & Distribution - Street lighting	30.6	0.6%
	3	Well To Tank WTT	386.8	7.2%
Employees	3	Business miles	301.9	5.6%
	3	Commuting & Homeworking	957.6	17.9%
Contracts	3	Public Realm Contract	610.3	11.4%
	3	Waste Collection	1,255.8	23.4%
	3	Waste Transfer	926.1	17.3%
	All	TOTAL EMISSIONS	5,357.2	100.0%

OFFSET	Solar PV generation	-88.7	-1.66%
	Hereford Beryl Bike	-12	-0.23%
	County retrofit delivery	0*	0.00%
	Biochar production	0*	0.00%
	NET EMISSIONS	5,256.5	98.1%

*Potential future projects - no contribution to baseline figures

2024/25 Emissions, tCO_2e % of total



3. Delivering carbon emissions reduction

3.1 Identifying and developing actions

Actions have been developed using the following 5 stage process:

1. Define and measure emissions

This information is included in the annual emissions reporting.

2. Identify how to use less energy

A technological solution such as more efficient appliances or an operational solution such as eliminating duplicate journeys or matching heating times to when a building is occupied.

3. Consider options for switching to a lower emissions fuel

This usually means diversifying the energy mix and increasing use of electricity, eg. replacing a gas boiler with a heat pump, or a diesel van with an electric van.

4. Business case, investment and cost analysis

The cost of implementing the change is considered against any savings made each year when compared to operating the original. For example, the cost of buying an electric van and running it compared to replacing and running a diesel van.

None of the actions identified in this plan have detailed business cases prepared.

5. Identify residual emissions for offsetting

It is important to identify those emissions that will remain.
These will need additional actions to reduce further or be offset.

3.2 Opportunities

We will maximise the benefits of achieving the emissions reduction target through a planned and agile approach. Opportunities include:

Targeted
When a source of emissions is identified, specific measures will be considered, costed and implemented.

Refurbishment and renovation
Buildings require ongoing maintenance and upgrading to remain fit for purpose. By including energy efficiency improvements as part of the schedule of planned building maintenance work, the costs of the improvements can be significantly reduced.

End of life replacement
Vehicles and appliances have a limited lifespan. Anticipating and planning for vehicle or appliance replacement creates an opportunity to consider lower emissions alternatives.

Contract design
When contracts require renewal or revision there is an opportunity to embed emissions reduction. Emissions monitoring should also form part of the contract.

New services and service reviews
When services are designed or reviewed an evaluation of any buildings and travel requirements can identify opportunities to minimise energy use, cost and emissions.

Funding
Funding opportunities can prompt investment in emissions reduction. Prior preparation is required as application windows can be short.

3.3 Challenges

As emissions continue to reduce, further measures and associated derived benefits can become more marginal and difficult to address. These challenges can be overcome and there will always be a need to balance effective service delivery and emissions reduction.

Challenges include:

Technical limitations

There are limits to what technological solutions can deliver. Existing buildings can only be improved so far and even high efficiency heating systems still require significant energy.

Control limitations

The council has limited control over its scope 3 emissions. Employee emissions are collectively significant but individually small and are a result of where employees live, how often they commute and what car they own. Where control is limited, innovation and engagement can create opportunities for progress.

Availability of solutions

Global decarbonisation is driving innovation. Large markets have choice and availability of products, such as solar panels or electric cars. Specialised solutions, such as large heat pumps and electric bin lorries have more limited availability. This creates a delivery challenge but one that can be expected to ease over time.

Operational requirements

Providing services across a rural county necessarily requires a lot of travel and a lot of fuel. Efficiency gains and low emissions fuels are both required in these instances.

3.4 External Drivers

Some factors outside of the council's control drive emissions reduction whilst other factors make reduction more expensive or difficult. Understanding the impact of these drivers will inform decision making.

Efficiency gains

Appliances and vehicles have become more efficient over time and so modernisation almost always improves efficiency.

Fuel changes

Petrol and diesel include a proportion of biofuel mixed in with fossil sources. This has the potential to change again in future, further lowering emissions. Manufacturers shifting to electric vehicle production may make this unnecessary. Price volatility including significant shocks can be reduced through increased energy resilience.

Energy prices

Higher energy costs improve business cases for investment in energy reduction. Energy price volatility is a financial risk and reducing demand for energy mitigates this risk.

Technology costs

Cost of electric vehicles, solar panels, batteries and heat pumps are all expected to fall. Tariffs and taxation can also impact cost.

Government policy

A significant driver is the policy direction of the UK Government. Minimum efficiency standards, taxation, grants, regulation and other tools can all facilitate emissions reduction. Long term stability in overall policy direction supports UK delivery of emissions reduction.

4. Areas of work

Actions are grouped into the following sections based on the emissions reporting and delivery mechanism.

1. **Governance**
2. **Council fleet**
3. **Council estate**
4. **Derived factors**
5. **Employees**
6. **Contracts**
7. **Offset**

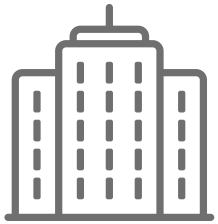
4.1 Governance

The UK Government has committed to meeting international emissions targets. No specific duties, targets or powers have been placed upon local authorities to contribute to this national ambition. However, councils have declared local targets and developed emissions reduction plans and strategies for their operations.

4.2 Council Fleet

The fleet comprises of cars and vans allocated to teams alongside a pool of cars available to all employees for business travel. Future changes in the public realm and school transport contracts are expected to increase fleet size.

A comprehensive review of the management and operation of the current fleet was carried out in 2025 which concluded that electric vehicle (EV) options were suitable for operational needs. Driver training and effective fleet management have also been identified as delivering emissions and cost savings. Additional EV charging infrastructure will be required to support further fleet transition. Where the chargers are co-located with solar panels there are opportunities for cost saving.



4.3 Council Estate

This includes offices, museums, libraries, community centres, public conveniences, commercial units and the county street lighting inventory. Most of the estate has been assessed and energy saving opportunities identified. These have been considered alongside boiler age, repair needs and planned maintenance to create a work programme of building improvements.

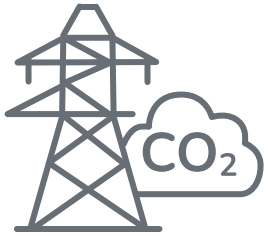
Buildings – gas: Most of the estate emissions are from natural gas used in heating. Continued efficiency gains and building fabric improvements will reduce consumption, though there are limits to how far a building can be improved.

It is possible to secure a supply contract for low emissions biogas. While this does have an additional cost, the emissions reduction is significant.

Buildings – electricity: Emissions are low because the electricity the council uses is certified renewable electricity. Further reductions in consumption will reduce running costs and can be delivered through continued improvement of building services, lighting and appliances. Additional solar generation reduces the need to import electricity from the grid and there are opportunities to maximise use of generated electricity such as electric vehicle charging.

Water and sewerage: Water and sewerage emissions can be limited by continued good practice in water saving and prompt leak repairs. Technical solutions such as timer controls are required in locations such as public conveniences.

Street lighting: This includes illuminated signs, traffic lights and street lighting. Upgrading to LED lamps is now complete. The street lighting inventory is expected to increase as the road network develops and so overall electricity consumption can be expected to rise. Emissions will remain very low as they are supplied by certified renewable electricity. Only the Transmission & Distribution (T&D) losses and Well-To-Tank sources produce emissions (see below).



4.4 Derived factors

The derived factors cover the emissions produced when delivering energy to its point of use. Reducing the quantity of fuel used and switching to lower emissions fuel sources reduce these emissions. Derived factors are calculated from the scope 1 and scope 2 fuels used in the council's estate and fleet. Derived factors from scope 3 emissions are outside of the reporting boundary.

Transmissions & Distribution (T&D) Losses: These emissions result from the energy lost within the electricity network of cables and substations. Even though the council uses certified renewable electricity, the T&D losses are not covered by this certification. Reducing electricity demand results in a corresponding drop in the T&D emissions.

Actions that switch the council's energy demand from gas and diesel to electricity will result in increased emissions from T&D losses. These have been included in estimations and are significantly less than those from the fossil fuels no longer used.

Well-to-Tank (WTT) emissions: Well-to-Tank emissions are produced during the extraction, production, processing, and delivery of fuels. Shifting to lower emissions energy sources and reducing the amount of fuel used reduces Well-to-Tank emissions.

4.5 Employees

Some emissions produced by employees are within the council's emissions boundary. The council has limited control over the following emissions sources:

Business miles: Employees use their own vehicles for a range of council purposes. The travel required depends on service needs and the location of employees and service users. The vehicles used by employees are outside of the council's control. However, there are alternatives and these should be accessible to employees and suited to service needs. Increased use of the council's own zero or low emissions fleet can reduce business miles, emissions and cost. Emissions can also be reduced by increased usage of public transport, choosing active travel options and by car sharing.

Homeworking: Homeworking is part of the regular working pattern for many employees. Emissions are based on the estimated hourly energy use and the number of hours worked from home. Homeworking links directly to commuting as working patterns shift from one to the other. The emissions per hour figure used to estimate the homeworking emissions was produced in 2020. When this is revised it can be expected to be a lower emissions figure.

Commuting: Commuting emissions are included as they are result of the operational requirements of the council. Direct influence of an employee's commuting choices is limited but there are opportunities to encourage and enable lower emissions options. Baseline emission figures used data from the employee survey in 2023. Future surveys are an opportunity to improve data collection and gain further insight into reduction opportunities.

4.6 Contracts

Countywide waste collection and transfer contracts: This service uses heavy diesel waste collection vehicles that operate across the county, alongside two new electric refuse collection vehicles (eRCVs). An existing contract will operate throughout the period of this plan. The contract can accommodate emissions reduction including switching from diesel to a renewable fuel.

Demand for waste collection can be expected to rise with population and housing growth. As more forms of waste are recycled, the additional collection increases the fuel required and so increases the collection emissions. Likewise, any reduction in frequency of collections would reduce fuel consumption. eRCVs are currently used on some routes but cost, availability, range and charging locations present further challenges.

Public Realm contract: This is the outsourced management of the county's highways, green spaces and other public spaces. A new contract for this service will commence in 2026 and appropriate emissions reduction measures are expected within contract delivery. Action here is delivered through the specification and monitoring of the contract. Emissions reductions are estimates based on the switch to EV and HVO fuel for fleet and plant. Further emissions reductions will be indentified by the contractor via annual plans.

4.7 Offset

Offset actions reduce or remove emissions that occur outside of the council's reporting boundary. Where this reduction can be measured it is subtracted from the council's overall emissions.

Solar energy export

Solar panels are installed on a number of council owned and operated buildings. The electricity generated is used in the building where they are installed. This reduces the amount of electricity imported from the grid with any excess exported into the electricity grid. This exported renewable electricity is then consumed by others.

We can measure our exported renewable electricity (in kWh) and this offsets equivalent emissions from elsewhere within our operational boundary.

Solar energy generation

The council owns and leases building to tenants who are responsible for their energy bills. Energy used in these tenanted buildings falls outside of the council's emissions boundary. Where solar panels are installed, the tenants benefit from the renewable energy they consume directly. This reduces the amount of electricity the tenants import from the grid and so has a clear and measurable reduction on the tenants' emissions. Any excess is exported to the grid and consumed by others.

Measured renewable electricity generation from tenanted buildings (in kWh) offsets equivalent emissions from elsewhere within our operational boundary.

Emissions avoided by the use of the Hereford City Bike Share Scheme

The council provides a city-wide bike share scheme in Hereford. This is operated by our delivery partner who record the mileage covered by the fleet of pedal and electric bikes and calculate an emissions saving each year compared to journeys that would have otherwise taken place using fossil fuels. These savings are used to offset equivalent emissions from our operational boundary.

A heat pump installed at a private home through the council's Home Upgrade Grant scheme

Domestic emissions reduction delivered in the county via council support

The council manages projects that improve the energy performance of private homes in the county. This reduces any occupiers' future emissions each year. These savings are used to offset equivalent emissions from our operational boundary.

The offset will be calculated each year based on the fuel use reduction achieved through the improved energy performance of the homes. This will be calculated using the energy use figures supplied by the Energy Performance Certificate before and after the improvement. For solar PV installations, a modelled generation figure, average system size and assumed 50% export with be applied and the emissions avoidance calculated each year using the annual UK grid emissions intensity. Offset figures will apply for the first 10 years after installation.

Biochar production - future offset potential

Biochar production has enabled other local authorities to offset emissions. This offers a potential offset solution for Herefordshire subject to further project development. Biochar is a carbon rich material created by heating biomass in a low oxygen environment. This charcoal-like substance stores the carbon that its source material ('feedstock') removed from the atmosphere when growing. Biochar has numerous immediate uses as a soil improver and ongoing research is considering other applications in construction and water filtration. Production facilities can generate and supply heat or electricity alongside usable quantities of biochar. The process can be certified to produce carbon credits that could be claimed as offset or sold.

Initial investigations demonstrate that there are numerous potential feedstock supplies in the county including sawmills, arisings from orchard and woodland management, and a range of potential by-products from agricultural production and food processing. Site location to ensure the energy generation can be used efficiently is also essential.

Detailed analysis of feedstock, location and costs are required to enable full business case development, but initial figures indicate that £4.3 million investment in a biochar production facility to process 1 tonne of biomass per hour would potentially generate £1.4 million per year.

5. Action plan and emissions change estimates

With emissions sources well defined and understood, potential actions for reduction can be developed. As reduction is driven by changes to fuel use – using less, improving efficiency and using lower emissions fuels – it is straightforward to identify solutions. In practical terms, there are only a limited number of options available to reduce a particular emissions source.

The action plan identifies possible solutions for each emissions source and estimates the potential costs and emissions reduction. Actual delivery will depend on a more detailed feasibility appraisal, project design and development of a specific business case for each action. Delivery is also likely to be linked to the scope of funding sources available at a particular time.

The action plan details:

- The changes that can deliver reduction from each emissions source
- Estimated cost
- Estimated contribution to emissions reduction

Accurate cost and emission change figures will need to be developed for each action as part of the business case.

Numerous factors will influence the actual reductions achieved:

- Costs are estimated based on simple market price checks in Autumn 2025.
- Reduction estimates use the energy emissions factors produced by the Department for Energy Security and Net Zero (DESNZ) in 2024.
- The impact of operational changes on emissions will need to be included when these are fully understood.

Monitoring and updates

The delivery of emissions reduction actions over the plan period can only be confirmed when the appropriate governance and budget are in place. As it is not feasible to provide this detail and certainty at the commencement of the plan period, it will be essential to monitor and report progress as and when the opportunity for delivery arises.

Council's annual emissions report: The annual emissions report is the primary means to monitor progress of this plan. The report aligns with the organisational boundary and actions in this plan and so can be used to monitor overall emissions change. The data used for the report is gathered from across the council and allows for year-on-year comparison to track the emission change from each source, such as a single building or overall business mileage claimed. Reporting is adaptive to organisational change and improvements in data collection.

[13] Greenhouse gas reporting: conversion factors 2024 - GOV.UK

Data from Scope 3 contracted services is provided by the council's contractors. For consistency across the data sources, the energy consumption data is used to calculate an emissions figure. Contract monitoring terms should include provision for the data transfer to Herefordshire Council to align with the annual reporting cycle, 6 months after the end of the preceding financial year.

The emissions reporting also forms part of the council's overall performance monitoring.

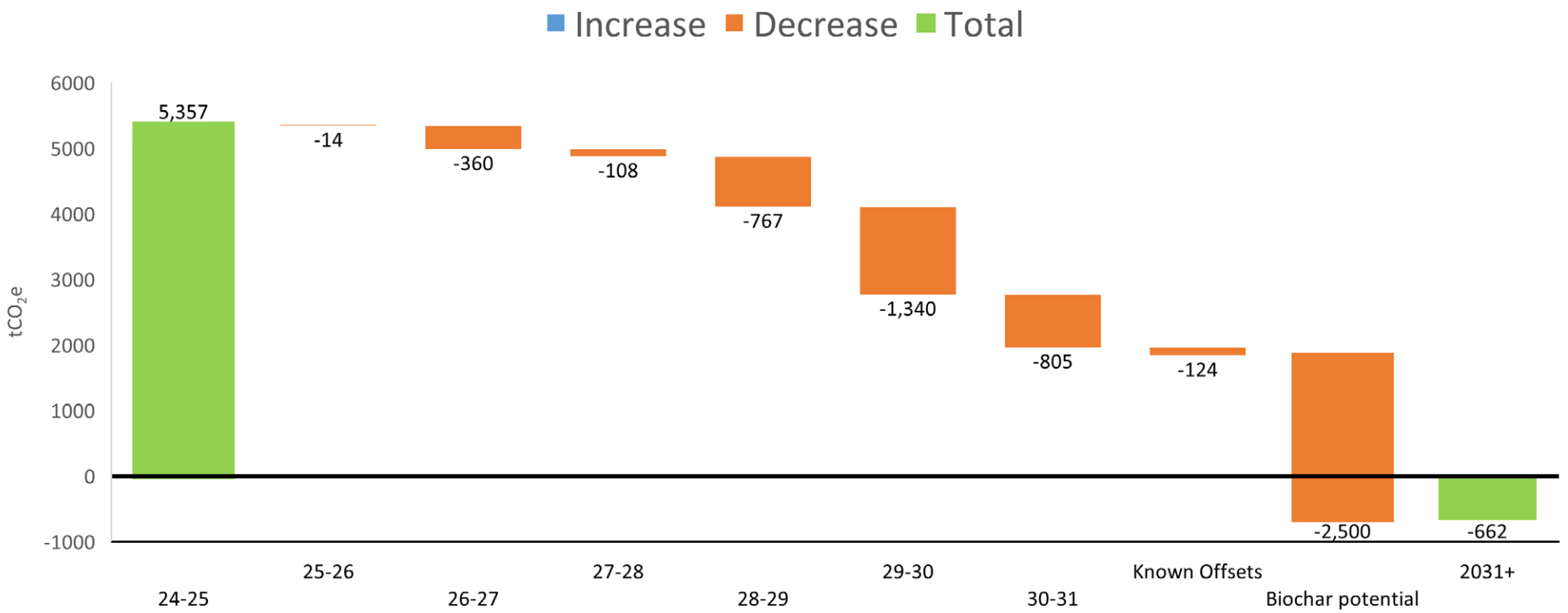
Residual emissions

The actions demonstrate a pragmatic but credible summary of the emissions reduction that could be achieved. Even after successful delivery of all of the actions, it is expected that some residual emissions will remain. These are from:

- Sources where the council has only a limited capability to drive change such as the employee emissions from homeworking and commuting
- Some business miles are likely to be required where low emissions alternatives are impractical
- Specialist vehicles required for certain operational needs, where low emission replacements are difficult and expensive to source.

The action plan identifies a number of potential projects that would offset these remaining emissions. Offsetting estimates are included where there are accurate figures that provide the necessary confidence that the offset has occurred. Further potential offsetting sources including biochar production will continued to be evaluated.

Herefordshire Council Potential Emissions Change to 2031



This chart illustrates how the potential emissions reduction could be achieved over the period of the plan. It is based on the modelled estimates of emissions change resulting from the delivery of the actions. It is intended to demonstrate the scale and rate of change. Actual timing and quantity of emissions change will be subject to funding, opportunity and other factors.

Action plan

5.1 Governance

No.	Action	Emissions source	Emissions change estimate tCO_2e	Comments	Estimated cost
G1	Improve guidance on assessing emissions impact in mod-gov reports	All sources	Enabling action	• Foundational action to help identify opportunities for emissions reduction	Officer time
G2	Provide carbon literacy training to councillors and supporting toolkit	All sources	Enabling action	• Foundational action to help identify opportunities for emissions reduction	£0

5.2 Council Fleet

No.	Action	Emissions source	Emissions change estimate tCO_2e	Comments	Estimated cost
F1	Develop costed planned replacement of fleet with zero emissions vehicles	Council fleet	-108	• Cost based on replacing 40 diesel vans and 4 petrol hybrids with EV models • Estimated cost is spend over direct replacement with diesel/petrol vehicles • Initial purchase cost only • Does not include income from disposal of existing fleet • Does not include Operations and Maintenance (O&M) savings from fuel, tax and servicing • Does not include fleet expansion from school transport or public realm contract	£600,000
F2	Ensure EV charging facilities available as required	Council fleet, buildings – electricity	Enabling action	• Charging infrastructure will be required to support the transition to EV fleet	£100,000 based on 150kW of charging capacity
F3	Driver and fleet management	Council fleet	-11	• Mileage reduction and improved driver performance would deliver O&M savings • Emissions reduction based on 10% of existing petrol/diesel fleet emissions	£10,000 Driver Training (50 drivers at £200 each)

5.3 Council Estate

No.	Action	Emissions source	Emissions change estimate tCO_2e	Comments	Estimated cost
B1	Deliver identified building fabric and heating system improvements	Buildings - gas	-13.7	• Emission reduction based on fossil gas supply	£35,000
B2	Deliver identified lighting systems improvements and control upgrades	Buildings - electricity	0	• Reduction of c.53,000 kWh of annual energy demand • WTT and T&D emissions reduction	£167,000
B3	Installation of solar rooftop PV systems on buildings	Buildings - electricity	0	• Reduction of c.27,000 kWh of annual energy demand	£63,100
B4	Identify and implement water saving measures	Water & sewerage	-0.8	• Reduction target of 10%	£0 -behaviour and operational changes
B5	Review building use and occupation patterns to improve energy saving behaviour	Buildings – gas and electricity	0	• Reduction target of 5%	£0 – behaviour and operational changes
B6	Secure certified green biogas supply to all council buildings	Buildings - gas	-690.6	• Reduction based on kWh consumption in 24/25	Additional £50,000 p.a. (compared to natural gas)
B7	Ensure all new lighting is low energy and limits light pollution	Street lighting	0	• Cost increases from expanded street lighting inventory. No emissions increase assumes renewable supply	Determined by operational need

5.4 Derived factors

No.	Action	Emissions source	Emissions change estimate tCO_2e	Comments	Estimated cost
D1	Change in electricity Transmission & Distribution emissions from actions	T&D	10.3	• Overall increase from vehicle charging	£0
D2	Change in Well-to-Tank emissions from actions	WTT	-46.5 -26.7 +28	• Demand reduction and biogas • Diesel and petrol – fleet changes • Electricity – fleet and building changes	£0

5.5 Employees

No.	Action	Emissions source	Emissions change estimate tCO_2e	Comments	Estimated cost
E1	Collect data on employee working patterns through periodic survey	Commuting and homeworking	Enabling action	• To gain insight into employee travel and working patterns, to help inform other actions and employee strategy	Officer time
E2	Training and awareness of employee travel emissions	Commuting and homeworking	-19.1	• Enables and encourages employee choice of low emissions options	Officer time
E3	Increase usage of EV pool car fleet	Business miles	-30.2	• Reduction based on 10% of existing business miles • Increases mileage of council fleet	Officer time

5.6 Contracts

No.	Action	Emissions source	Emissions change estimate tCO_2e	Comments	Estimated cost
C1	Use of renewable fuel for waste collection vehicles	Waste collection contract	-1,216.9	• This is fuel switch from diesel to Hydrotreated Vegetable Oil (HVO) for the waste collection fleet • Cost includes increase of 50% fuel use from increased recycling collections and an 1% increase in collection distances	+£236,250 p.a. (based on £0.35 price for HVO over diesel and based on annual usage of c.675,000 litres)
C2	Use of renewable fuel for waste transfer vehicles	Waste transfer contract	-786.3	• This is fuel switch to HVO for the waste transfer fleet • Cost includes increase of 50% fuel use from increased recycling collections and 1% increase in collection distances	+262,500 pa (based on £0.35 price for HVO over diesel and based on annual usage of c.750,000 litres)
C3	Provisions in Public Realm contract	Public Realm contract	-495.2	• EV use across Light Commercial Vehicles (LCV) fleet, electrification of small plant and HVO use in compatible heavy vehicles • Assumes continued use of certified renewable electricity	Expectation that this will be delivered within the approved cost framework

5.7 Offset

No.	Action	Emissions source	Emissions change estimate tCO_2e	Comments	Estimated cost
O1	Offset – emissions savings from county retrofit delivery	Offset	-24	• Estimate average of -0.25tCO_2e per home	£0 - offsets are based on existing installations
O2	Offset -solar PV generation from tenanted properties	Offset	-88	• Offset value based on solar export and UK grid intensity • Grid figure expected to reduce each year, reducing offset	£0 - offsets are based on existing installations
O3	Offset – Hereford City Bike Share	Offset	-12	• Offset value based on recorded journeys	No additional budget required
O4	Offset – Biochar production	Offset	-2500	• An initial assessment of the carbon storage potential indicates that biochar production could remove up to 2,875t of CO_2e per year • Conservative estimate of 2,500t should be achievable	£4.3M - outline cost estimate for a 1tonne per hour pyrolysis plant. Sale of energy, biochar and value of carbon credits estimated at £1.4M/year
O5	Offset – Carbon sequestration delivered through planning gain	Offset	Potential to be determined	• Develop a means to quantify the offset achieved through tree planting and other habitat creation as a result of planning permissions	£0 – initial assessments expected to be delivered by current officers
O6	Offset - Identify council owned land for potential sequestration projects	Offset	Potential to be determined	• Detailed assessment of opportunities required	£0 – initial assessments expected to be delivered by current officers

5.8 Summary of potential emissions changes over plan period

This table show the potential emissions change over time and is a summary of the emissions reduction estimates included in the preceding tables. All figures are in tonnes of CO_2e.

Group	Emissions source	24-25	25-26	26-27	27-28	28-29	29-30	30-31	Known Offsets	Biochar potential	2031+
Fleet	Council fleet	108.4			-108.4						0.0
Estate	Buildings - gas Buildings - electricity Street lighting Buildings - Water & sewerage	705.3 8.1 0.0 7.5	-13.7	 -0.8		-690.6					0.9 8.1 0.0 6.7
Derived factors	Electricity import T&D Street lighting T&D Well-to-Tank WTT	58.8 30.6 386.8		7.6 28.0	2.2 -26.7	 -46.5	0.5				68.6 31.1 343.1
Employees	Business miles Commuting & Homeworking	301.9 957.6				-30.2		-19.1			271.7 938.5
Contracts	Public Realm Contract Waste Collection Waste Transfer	610.3 1,255.8 926.1		-371.3			-123.9 -1,216.9	 -786.3			115.1 38.8 139.8
Offset	Total offsets	-100.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-124.0	-2,500.0	-2,624.0
	TOTAL TCO_2e 08-09 Baseline Change from baseline	**5,357.2** 14,660.2 63.5%	**-13.7** 63.6%	**-336.5** 65.8%	**-132.9** 66.8%	**-767.3** 72.0%	**-1,340.3** 81.1%	**-805.4** 86.6%	**-124.0**	**-2,500.0**	**-661.5** 104.5%

5.9 Summary of cost estimates

		Status at commencement of plan period	Revenue	Capital	Profiled delivery year
	GOVERNANCE				
G1	Decision guidance	Underway			All
G2	Carbon Literacy	Subject to funding - cost would be one-off during plan period			2027/28
	COUNCIL FLEET				
F1	Zero emissions fleet	Fleet due replacement and changes in PRC creates opportunity for zero emission vehicles		£600,000	2027/28
F2	EV chargers	To support zero emissions fleet - increases electricity costs, reduces diesel/petrol revenue costs		£100,000	2027/28
F3	Driver fleet management	Subject to funding, this cost would be one-off during plan period	£10,000		2027/28
	COUNCIL ESTATE				
B1	Building fabric	Works have been identified and estimated, delivery aligned to other renovation work	Potential saving	£35,000	All
B2	Lighting upgrades	Works have been identified and estimated, delivery aligned to other renovation work	Potential saving	£167,000	All
B3	Rooftop Solar	Works have been identified and estimated, delivery aligned to other renovation work	Potential saving	£63,100	All
B4	Water saving	Opportunity as part of wider estate review	Potential saving		All
B5	Review building usage and operation	Opportunity as part of wider estate review	Potential saving		All
B6	100% biogas supply to council buildings	Additional cost per year but cost effective per ££ of CO_2e reduction; cost reduces with efficiency gains from B1	£50,000		2028/29
B7	New street lighting	Street lighting energy use can be expected to increase as the network grows	Future cost increase		All
	DERIVED FACTORS				
D1	Transmission & Distribution losses	No additional costs			All
D2	Well-to-Tank emissions	No additional costs			All

		Status at commencement of plan period	Revenue	Capital	Profiled delivery year
	EMPLOYEES				
E1	Employee survey	Requires employee engagement and officer time			2026/27
E2	Employee travel	Requires employee engagement and officer time	Potential saving		2030/31
E3	Increase pool car use	Requires employee engagement and officer time	Potential saving		2028/29
	CONTRACTS				
C1	HVO for waste collection	HVO in high demand and costs have increased; annual revenue cost is amount expected over diesel	£236,500		2029/30
C2	HVO for waste transfer	HVO in high demand and costs have increased; annual revenue cost is amount expected over diesel	£262,500		2030/31
C3	Public Realm	No additional costs over contract value identified			2027/28
	OFFSET				
O1	County domestic retrofit	No additional costs for offset over scheme delivery costs			All
O2	Solar on tenanted properties	No additional costs for offset over scheme delivery costs			All
O3	Hereford City Bike Share	No additional costs for offset over scheme delivery costs			All
O4	Biochar production	Major project - feasibility and financing to be developed during plan period		£4,300,000	2030/31
O5	Planning gain	Feasibility to be developed over plan period			
O6	Council land carbon storage	Feasibility to be developed over plan period			
		Totals	**£563,500**	**£5,265,100**	

Appendix I: Review of emissions reporting

Setting an organisational boundary

The supply of goods and services is interconnected across entire economies. The purchase of a single item or service is supported by far wider economic activity. The economic and emissions footprint of a local authority can extend to potentially hundreds if not thousands of other businesses all making their contribution. When reporting the emissions impact of an organisation it is important to recognise that a boundary must be set for how far this impact reaches.

The purpose of emissions reporting is to identify emissions sources, develop actions to reduce those emissions and to then monitor the impact of those actions. This is best supported by a boundary that can be applied consistently to the emissions sources that can be controlled.

The Greenhouse Gas Protocol describes how an organisation determines which emissions sources to include within its reporting. This is referred to as the 'organisational boundary'. The protocol offers two definitions of this boundary; financial control; or operational control. Operational control has been used previously and this continues to provide the best approach for local authority services.

The council can exercise different levels of control over each emissions source and so the extent of operational control must be clearly defined. Emission sources can then be evaluated to determine if they fall within the boundary. This is the foundation of sound reporting as it provides consistency over which emissions sources to include.

Emissions reporting is a dynamic process requiring regular review in order to adapt to organisational and operational changes. The development of the new Carbon Management Plan included a review of the reporting boundary as the sources included should also be the focus of action. This ensures that annual reporting can monitor the impact of delivery.

Definition of operational control boundary

Emissions are considered within the operational control boundary if they satisfy the following:

Scope 1

- Fuels used in vehicles the council operates and manages, whether owned or leased
- Gas or other fuels consumed in buildings the council owns or leases and has control of utilities

Scope 2

- Electricity consumed in buildings the council owns or leases and has control of utilities
- Electricity consumed in the county street lighting network maintained by the council

Scope 3

- Water supplied and sewerage volumes from buildings the council owns or leases and has control of utilities
- Transmission and Distribution losses for electricity supplied in Scope 2
- Well-to-Tank emissions for all Scope 1 and Scope 2 fuels

Scope 3 - Employees

- Council employees commuting and working from home
- Business miles claimed by employees of the council

Scope 3 - Contracts

- Public Realm contract
- Countywide waste collection and transfer including the council's own waste

This boundary:

- Aligns with the principles of the GHG protocol
- Includes those sources where the council can exercise operational control
- Can be consistently applied across the council's services
- Is supported by reliable and consistent data

Outside of boundary

The emissions impact of council operations extends beyond the operational control boundary. Defining a consistent boundary also identifies those sources where the council does not have the necessary operational control to deliver emissions change. These sources are considered outside of the operational control boundary, but they can still be supported and engaged to deliver emissions reduction.

The following emissions sources are outside of the council's operational control:

Council owned buildings where another organisation has control of utilities

This includes schools, academies, leisure centres, care homes, tenanted commercial, retail and residential premises.

Materials and goods purchased by the council

The council has significant purchasing power through its procurement procedures. Obtaining data on the emissions impact of products is highly complex, inconsistent and the council has limited powers to influence suppliers.

Contracted services

The council procures diverse services from a range of different providers. Unlike the large waste and public realm contracts, the council has limited control over the service provision and so has to select providers based on what the market can provide. This includes contracted travel for school transportation.

Financial control

The council holds ownership in several commercial enterprises. These sources are outside of the organisational control boundary but would potentially fall within a financial control boundary. These are Hoople, Envirosort Energy from Waste plant, and West Mercia Energy. These operate as separate commercial entities and may have reporting requirements of their own.

Changes from previous reporting

The reported emissions sources from previous years were evaluated against this definition of operational control. It identified that there were inconsistencies in how operational control has been previously applied. After further evaluation it was determined that the council does not have the necessary control to deliver emissions reduction from some sources. These are now considered outside of the boundary as described above.

The review also identified sources that have not been previously included within reporting but do fall within the operational control boundary. These will be included in reporting for the duration of this plan.

Outside of new boundary	Additional sources within boundary
Scope 1 and Scope 2 fuels consumed in schools	Water supplied and sewerage at council operated buildings
Scope 1,2 and 3 emissions from the buildings operated by Halo Leisure	Well-to-Tank emissions for the councils Scope 1 and Scope 2 fuels
Scope 1,2 and 3 emissions from the buildings operated by Shaw Healthcare	
Scope 1,2 and 3 emissions from the Courtyard Theatre	
Transportation contracts	

New baseline

Overall progress on emissions reduction is measured from a baseline starting figure. It is essential that reporting changes are reflected in this baseline figure. This ensures that progress can be properly assessed by ensuring that the emissions sources measured remain consistent across the reporting period.

Energy use and carbon factor data from the 2008/09 year was used to recalculate a revised baseline figure for the new boundary. This is shown in the graph in Section 2.3.

If you would like help to understand this document or would like it in another format or language please contact the **Environmental and Energy Management Team**
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