

Lincolnshire County Council Carbon Management Plan 4

February 2024



FOREWORD

Foreword from Cllr Colin Davie, Lincolnshire County Council Executive Councillor for Economic Development, Environment and Planning

As the member of the Lincolnshire County Council (LCC) with executive responsibility for the environment, I am pleased to see the next phase of LCC's carbon action through our Carbon Management Plan (CMP4). The CMP4 is a key instrument for us to continue our journey towards our 2050 target to reduce our carbon emissions to zero.

We have accomplished much through previous CMPs. By the end of CMP3, we had reduced our emissions by 44.9 percent, compared to the 2016/17 baseline, and surpassed our 20 percent reduction goal. We did this by implementing specific and effective projects such as installing LED lighting across the street lighting network and enhancing the energy efficiency of our buildings, as well as through broader grid decarbonisation.

CMP4 brings forward actions that build on our strengths in taking on project specific actions and puts LCC on a phased pathway to take on the more complex decarbonisation challenges facing us in meeting the Government's 2050 net zero target. CMP4 sets us up to better understand the decarbonisation challenges and opportunities facing LCC, clarify our priorities and strategy, and develop delivery mechanisms and partnerships. These approaches reflect that to deliver the decarbonisation required, LCC needs to overcome substantial financial challenges and to work with our county's communities and businesses to ensure LCC continues to meet their needs.

Everyone has a role in reducing carbon emissions, and I look forward to seeing LCC continue to lead within our own operations as well as supporting change across the county.



CONTENTS

1. Introduction

2. LCC Performance

3. Actions overview and methodology

4. Actions: Buildings and infrastructure

5. Actions: Energy and lighting

6. Actions: Transport

7. Actions: Governance, Delivery and Communication

8. Glossary

9. List of Acronyms

EXECUTIVE SUMMARY

Lincolnshire County Council (LCC) has delivered great success through its prior Carbon Management Plans (CMP). At the end of 2022/23 LCC had achieved a 44% reduction from the 2016/17 baseline. A review of LCC's performance as part of the early stages of preparing CMP4, it has identified that LCC ranks competitively against its 'peers' (other English based local authorities of similar size and population) in emissions reduction action.

In CMP4 and future CMPs, LCC is facing complex and significant challenges. This is as many of the 'easy actions' that are largely within LCC's direct control have been achieved. The remaining action areas are more complex in terms of their delivery and cost. In order to make progress in the remaining emission areas, LCC will need to influence others, including the UK Government and the wider public sector partners.

CMP4 represents a planning and alignment stage in LCC's carbon journey. There are some specific actions and projects that LCC

can progress from the start of the CMP4, and the plan is structured around actions related to

- Buildings and infrastructure
- Energy and Lighting
- Transport
- Governance, delivery, and communication.

However, the greater focus for CMP4 is on strategy and planning across key LCC emissions areas and services. Taking this focus initially, will longer term enable LCC to identify the next set of delivery focussed actions that incorporate funding opportunities, governance, and best practice decision making frameworks. This strategy and planning phase will ensure LCC is prepared to continue to deliver impactful decarbonisation across its estate through this and future CMPs, as well as positioning LCC to be able to effectively influence and align with funding and delivery partners.

Overview of this CMP

This document provides a plan for LCC to progress for the next five years in its net carbon neutral trajectory. It is based on technical work led by WSP, drawing on input and expertise from across LCC.

The early sections of the CMP sets the context within which LCC's is undertaking its decarbonisation action and then provides an overview of LCC's emissions performance. The latter set out the proposed approach for the addressing emissions from LCC's key areas and provides a list of action tables.

This document works as an interactive document, and you can navigate between the sections by clicking on the links. Clicking on the icon next to images and diagrams will expand them to improve readability.

LCC TARGETS AND DEFINITIONS

Lincolnshire County Council targets

In May 2019, Lincolnshire County Council (LCC) committed to becoming net carbon neutral by 2050. This plan puts forward an interim target of 25% reduction on the (2022/23) baseline of 15,800 tonnes CO₂e

The term 'net zero' is more broadly aligned to UK targets and takes a more comprehensive approach in terms of actions, outcomes, and broader policy context of reducing GHG emissions. Figure 1 and 2 presents the key features and definitions of these targets.

To date, Lincolnshire County Council has developed and delivered three Carbon Management Plans which have enabled its reductions. Previous Carbon Management Plans have focused on project specific actions including significant decarbonisation of street lighting.

LCC exceeded its committed carbon reduction targets. At the close of CMP3 in 2023, LCC had achieved a 44.9% emissions reduction compared to the 2016/17 baseline and has exceeded its 20% interim reduction target for the CMP. This interim target was set by LCC, reflecting the anticipated reductions from planned projects.

Carbon action across the council area is supported by LCC's Green Master Plan which provides an overarching approach in response to climate change and the 2050 target. The Green Master Plan establishes three guiding principles (outlined further on page 7) and an initial action plan.

The 'LCC Performance' section from page 8, provides further detail on how well LCC is performing against its targets.

Scope 1:

Emissions from sources under direct control of an organisation.

Scope 2:

Emissions from the energy an organisation purchases and uses.

Scope 3:

Indirect emissions resulting from the activities of an organisation.

Figure 1 – Scope 1, 2, and 3 definitions.

Figure 2 – Features and definitions of carbon neutral and net zero

	CARBON NEUTRAL (LCC target)	NET ZERO
EMISSIONS COVERED	Covers carbon dioxide (CO ₂) emissions only	Covers all GHG emissions, including carbon dioxide (CO ₂), methane (CH ₄) and nitrous oxide (N ₂ O)
SCALE	Service, product or company scale	Company, national or global level
ACTION FOCUS	Uses reported emissions to calculate offset position	Active reduction of GHG
TRAJECTORY	Does not usually follow a specific emissions trajectory	Supports Paris Agreement target to limit global warming to 1.5°C above pre-industrial levels



Figure 2 – Features and definitions of carbon neutral and net zero

	CARBON NEUTRAL (LCC target)	NET ZERO
EMISSIONS COVERED	Covers carbon dioxide (CO2) emissions only Scope 1 and 2 emissions, with Scope 3 emissions encouraged	Covers all GHG emissions, including carbon dioxide (CO2), methane (CH4) and nitrous oxide (N2O) Focuses on emissions across the whole supply chain (Scopes 1, 2 and 3)
SCALE	Service, product or company scale	Company, national or global level
ACTION FOCUS	Uses reported emissions to calculate offset position	Active reduction of GHG
TRAJECTORY	Does not usually follow a specific emissions trajectory	Supports Paris Agreement target to limit global warming to 1.5°C above pre-industrial levels

THE STRATEGIC CHALLENGES FACING LOCAL AUTHORITIES IN DELIVERING NET ZERO

Alignment with UK Government targets and policy

As LCC approaches the delivery of more complex actions in CMP4, it will need support (e.g. funding, regulation and guidance) from the UK Government. LCC's CMP4 actions are aligned to UK Government's commitments, policies, and targets including the following:

- Ambitious targets to reduce carbon emissions by 68% by 2030 and 77% by 2035, compared to 1990 levels.
- Recognition that local government plays an essential role in meeting national net zero, as set in the [2021 Net Zero Strategy: Build Back Greener](#).
- Reconfirmed the UK's commitment to net zero by 2050 and pledged a "fairer" path to achieve the target, taking a pragmatic, proportionate and realistic approach to achieving net zero.
- Decarbonisation pathways to net zero by 2050, policies and proposals to reduce emissions in each sector and cross-cutting actions to support the transition. These targets and statements confirms

sustainability and carbon reduction as an important focus for the UK Government.

Aligning LCC's action to these aspects will ensure it is well positioned to access support and work effectively with the UK Government in delivering coordinated net zero action at the local level.

The role of local authorities in leading net zero action

Local authorities are leaders within their villages, towns, counties, and cities. They are crucial in enabling the UK to meet the net zero emissions by 2050 target. As major asset owners with substantial purchasing power, local authority actions and decisions have significant impact on carbon emissions. LCC has the power to lead on net zero within its own capital projects and operations, enable change via policy, partnerships and investment, and inspire communities to take action.

Overcoming the challenges

Local authorities are facing a complex range of interrelated challenges in delivering net zero, driven by national policy and regulation, as well as market and social demands. Figure 3 provides an overview of the key government policies and their delivery dates that will have an impact on LCC.

The scope of CMP4 accounts for, and responds to, these challenges and their impacts on LCC, and where possible links to the wider county. LCC's Green Masterplan provides a framework for the delivery of wider net zero and sustainability action and can be utilised to enhance LCC's response to these challenges.

Figure 3 – Overview of key government policies and introduction timeline

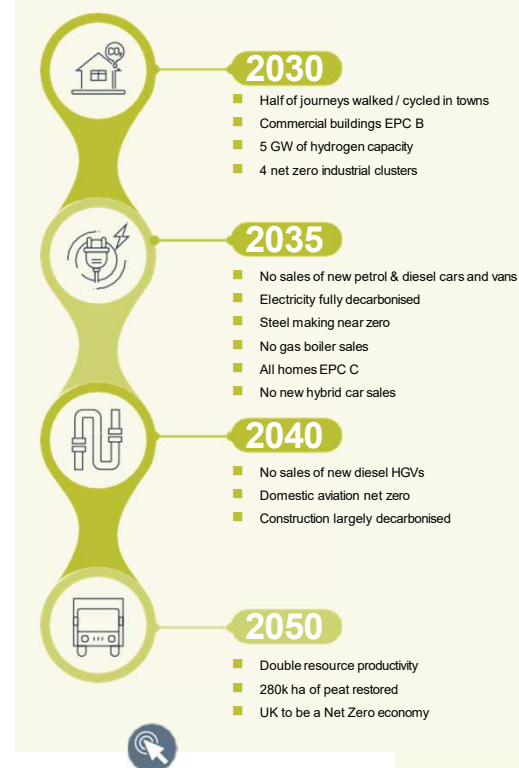
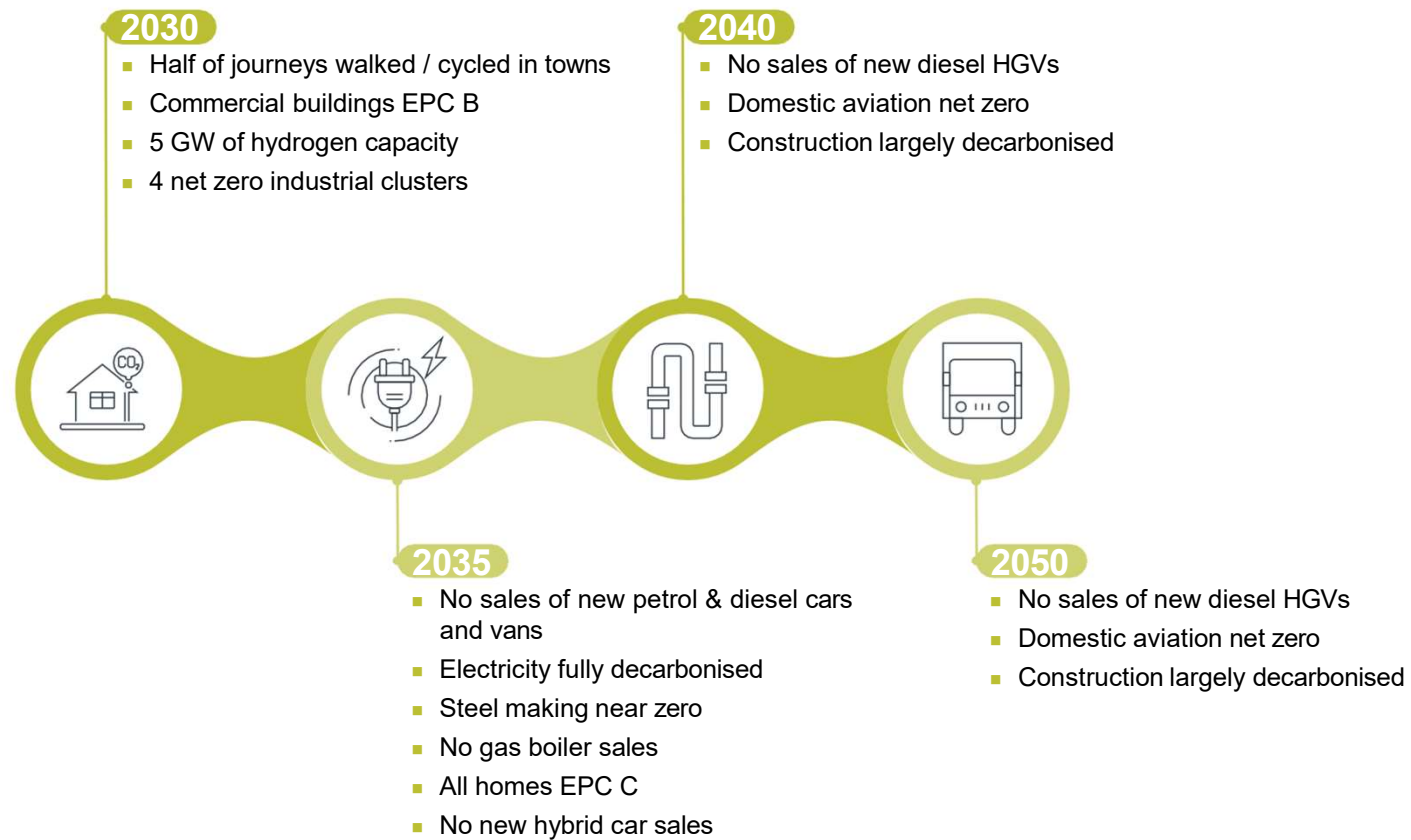




Figure 3 – Overview of key government policies and introduction timeline



THE STRATEGIC CHALLENGE FOR CMP4

Challenges facing LCC in its next phase of CMP

LCC has made significant progress under CMP3, having capitalised on many of the 'quick-win' actions and reduction opportunities. For CMP4, LCC needs to focus efforts on delivering the more complex actions which will require resource, time and funding to deliver the necessary reductions.

The challenge of CMP4 is to set LCC up to deliver incrementally on longer term actions, that will put LCC on a trajectory to deliver on its 2050 target. For example, delivering estate wide energy efficiency requires a staged and strategic approach that starts with actions to understand the future use and rationalisation of the estate.

Through group engagement at a workshop and individual interviews with staff members across all directorates in LCC (further detail provided on page 12), a series of challenges have been identified that will need to be addressed throughout CMP4:

- **Strategic Direction** – Remaining in alignment with the Green Master Plan the three principles have been applied (described in Figure 4) where appropriate, to help shape the actions brought forward in CMP4. However, it appears that further strategic direction is required to inform how service areas should carry out the more complex net zero actions.
- **Funding** – Most local authorities in the UK are finding it challenging to enable sufficient funding to deliver net zero while meeting their wider statutory requirements. LCC is facing the same challenge and internal and external funding streams need to be identified and secured to enable action at the scale required to meet net zero targets.
- **Technology** – In some cases the availability, maturity, and supply chains for technology is not yet at a level where LCC can be confident in procuring at scale.
- Specify ongoing actions that can be delivered throughout CMP4's 5-year implementation period (2024 – 2029).
- Identify strategy and planning actions to be completed in the first phase of the plan which will enable LCC to tackle the more challenging areas of decarbonisation
- In the latter stages of the plan, enable the first phase of delivery of actions emerging from the strategy and planning phase.
- Identify and deliver (where feasible) wider co-benefits to citizens, communities, and businesses.
- Maximise opportunities to influence carbon reduction in Lincolnshire and position LCC as a leader for the area.
- Keep in alignment with the Green Masterplan while remaining flexible in determining the focus and priority areas for LCC.

CMP4's approach

The approach and actions in the CMP4 aims to:

Figure 4: Green Masterplan –strategic direction for LCC Climate action

The Green Masterplan is based on three key guiding principles:

1. Don't waste anything

By not wasting our time, energy, and money we will reduce the need for earth's resources and ultimately save carbon.

2. Consider wider opportunities

By considering the wider opportunities we'll be able to identify areas where we can work with others to make the most of our actions. Encouraging partners to work together can achieve multiple benefits and is an efficient use of time and money.

3. Take responsibility and pride

By taking responsibility and pride we are carrying out our moral obligation to leave Lincolnshire a better place, acting as custodians for the future.

LCC PERFORMANCE: OVERVIEW & METHODOLOGY

As part of the development of this Carbon Management Plan (CMP) a desk-based benchmarking exercise was undertaken to determine the progress made under CMP3 and Lincolnshire's position among other UK local authorities.

Methodology

The methodology for benchmarking was made up of four key elements as summarised below:

1. Identify Comparable Local Authorities

This desk-based exercise reviewed Lincolnshire County Council's carbon management targets and approach against ten comparable UK Local Authorities based on publicly available information.

These authorities were selected based on their population size, geographical area, and the availability of a carbon management plan or similar document that specified their work on carbon management measures. For the purposes of this report, the authorities have been anonymised.

2. Evaluate Comparable Local Authorities

Information available in the local authorities' carbon management and climate action plans was used to evaluate how LCC compares to its peers. This included assessing scope and approaches to net zero targets and plans, and identifying opportunities, barriers and costs.

3. Assessing Performance

Net zero performance as assessed through two frameworks, Climate Action Scorecards, and review of reported UK Government Emissions Data.

Climate Action Scorecards

Climate Emergency UK's Council Climate Action Scorecards were used, as an independent review, to assess the performance of the ten authorities. The scorecards assess local authority plans against criteria deemed necessary for an effective action plan.*

UK Government Emissions Data

This review included analysis of emissions data published by the UK Government on local authority and regional greenhouse gas emissions statistics to rank authorities. The specific data sets used were the Local Authority Territorial CO2 emissions estimates 2005 – 2019, specifically the figures that indicated:

- Total Emissions
- Per Capita Emissions
- Emissions per km²

4. Case Studies

Finally, case studies of carbon management approaches in both central and local government were examined to determine if there were any considerations that could be implemented in the upcoming plan.

** Please note: The 2021 Plan Scorecards were used as the 2023 Action Scorecards had not been released at the time of completing the benchmarking exercise.*

LCC PERFORMANCE: OVERVIEW & METHODOLOGY

The completed desk-based review provided insights into successful strategies and broader considerations that could be integrated into LCC's CMP4, further enhancing the Council's approach to climate action. The following pages provide a summary of the review and findings.

Lincolnshire County Council's Net Zero Targets

The timeframe for LCC's Net Zero targets are slightly later than the local authorities that they have been benchmarked against with the majority aiming for 2030 for Council emissions. With regards to county-wide emissions LCC is in line with most benchmarked councils, and national policy, targeting county-wide emission to reach net zero by 2050.

Council Climate Plan Scorecards

The 2021 Council Climate Plan Scorecards assessed LCC's CMP3 and Carbon Management Plan Summary 2018 – 2023. All authorities who had an active climate action plan or similar document were included in the

assessment exercise undertaken by Climate Emergency UK.

LCC was ranked 20th out of 24 UK County Councils. LCC only scored higher than Cumbria Council as 3 County Councils had no plans available for the scorecard assessment.

Emerging Approaches

The reviewed looked at emerging approaches that are recognised as 'best practice' carbon management approaches. This review provides a reference for where LCC may wish to focus its carbon action in the long term. The approaches identified that Ireland and some UK cities are moving towards area-based (or territory based) emissions inventories, the establishment of sector emissions ceilings, assessment of embodied carbon and the application of cost-based offset frameworks. It is noted that in Ireland these approaches are set by Central Government guidance.

Figure 5 – Amount of Carbon (ktCO₂e) emitted per year County wide

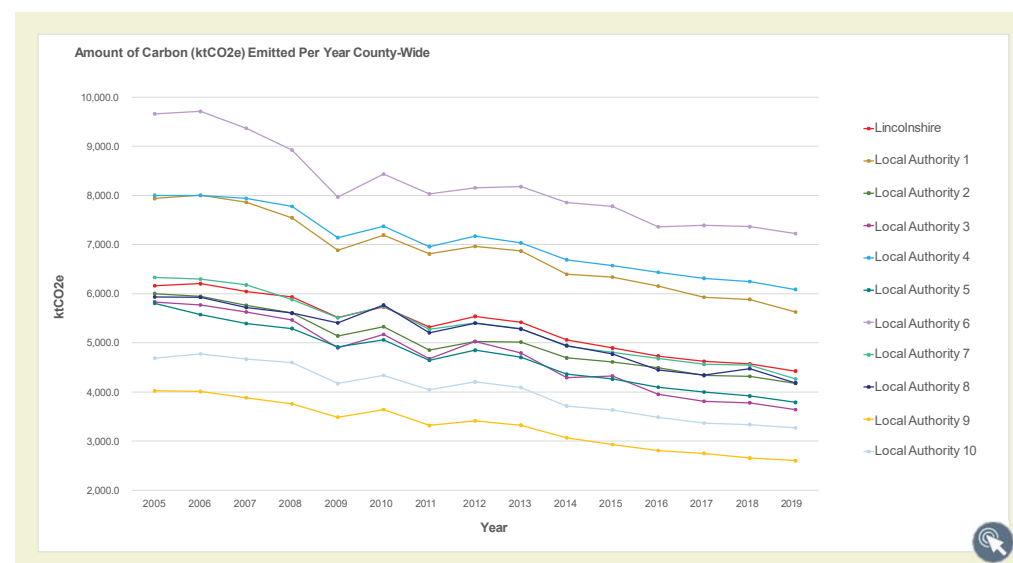
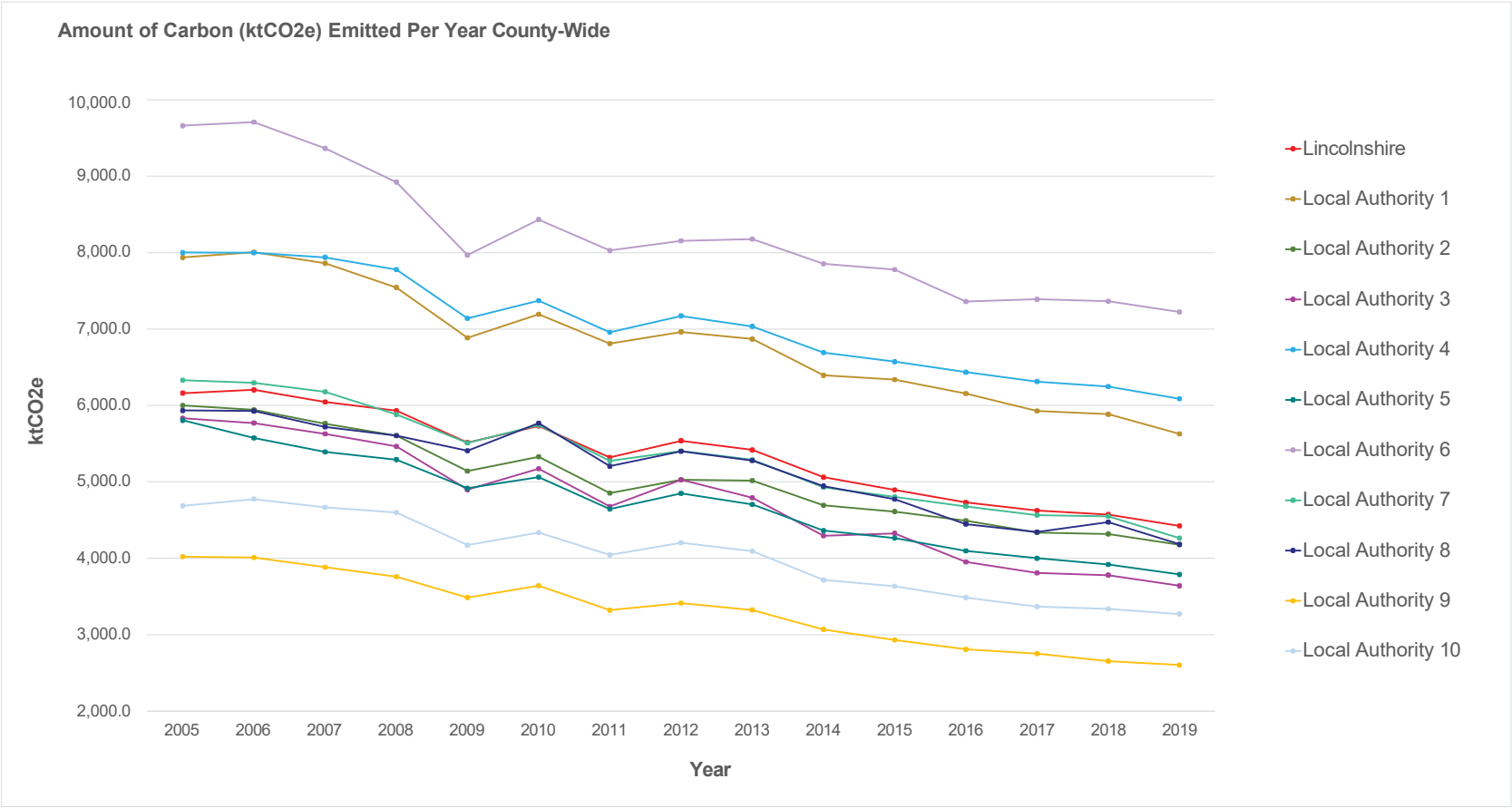




Figure 5 – Amount of Carbon (ktCO₂e) emitted per year County wide

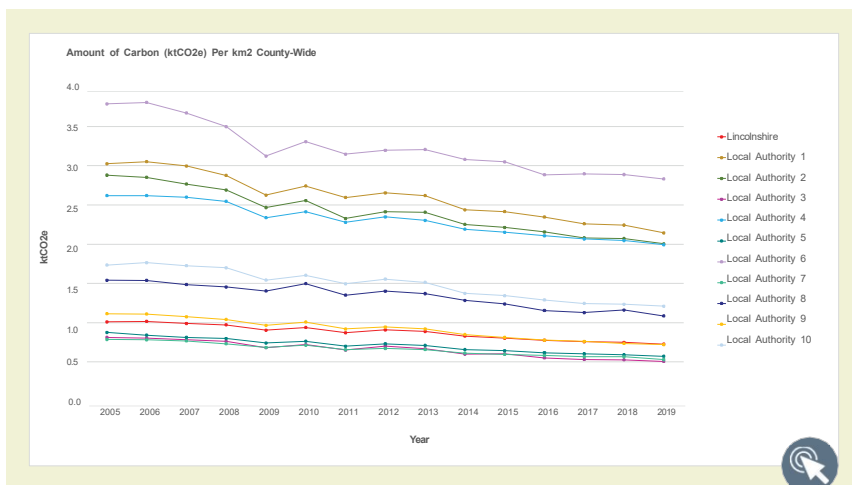


LCC PERFORMANCE: KEY FINDINGS

Lincolnshire's Emissions in UK Government Emissions Data

LCC ranks 8 out of the 11 authorities included in the benchmarking, when analysing the raw emissions data hosted by the UK Government. It's important to recognise that despite Lincolnshire having higher total emissions than other authorities that when this data is normalised against geographical area (ktCO₂e/km²) and population (tCO₂e/capita) the ranking increases to 5 out of 11. This is more aligned to Lincolnshire having the fourth largest geographical area and population in the group. Details are shown in figure 5 (page 9) and figures 6 and 7 (below).

Figure 6 – Amount of Carbon (ktCO₂e) per km² County-wide



The following areas could account for the higher total emissions in Lincolnshire:

- Transportation – In larger geographical areas, people and goods travel longer distances to reach the required destination, leading to the increased use of vehicles and associated carbon emissions.
- Population - In areas with a larger population there will be additional services and infrastructure to support the community which will contribute to higher carbon emissions.

Figure 7 – Amount of Carbon (tCO₂e) Per Capita

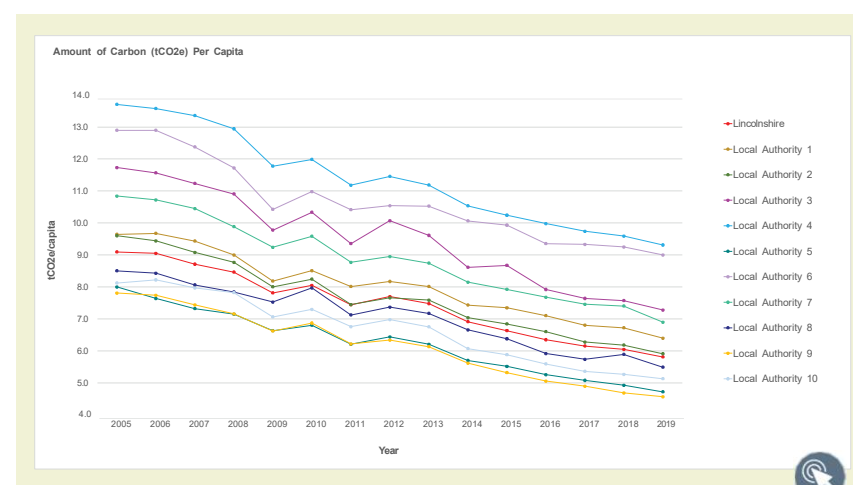




Figure 6 – Amount of Carbon (ktCO₂e) per km² County-wide

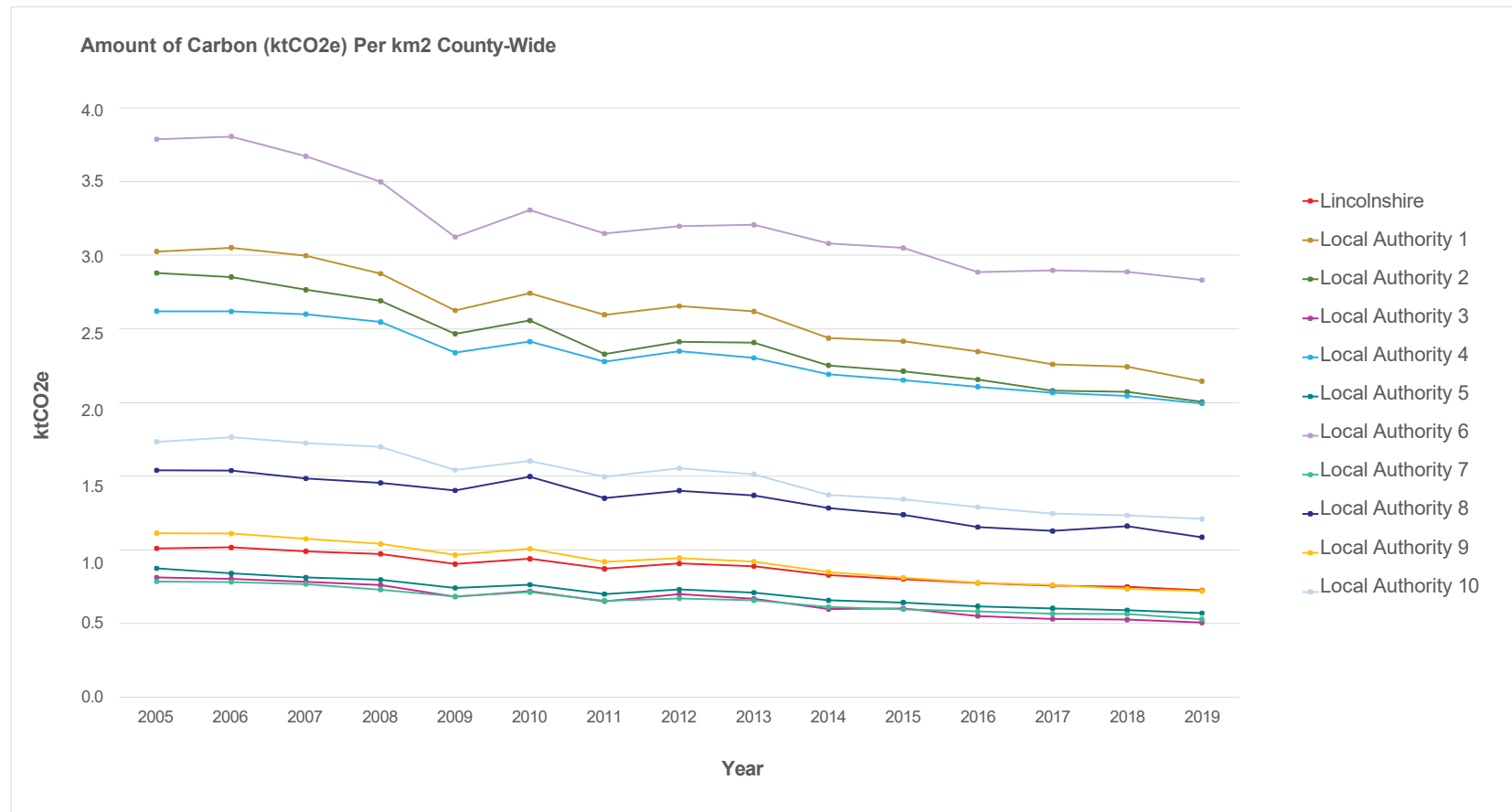
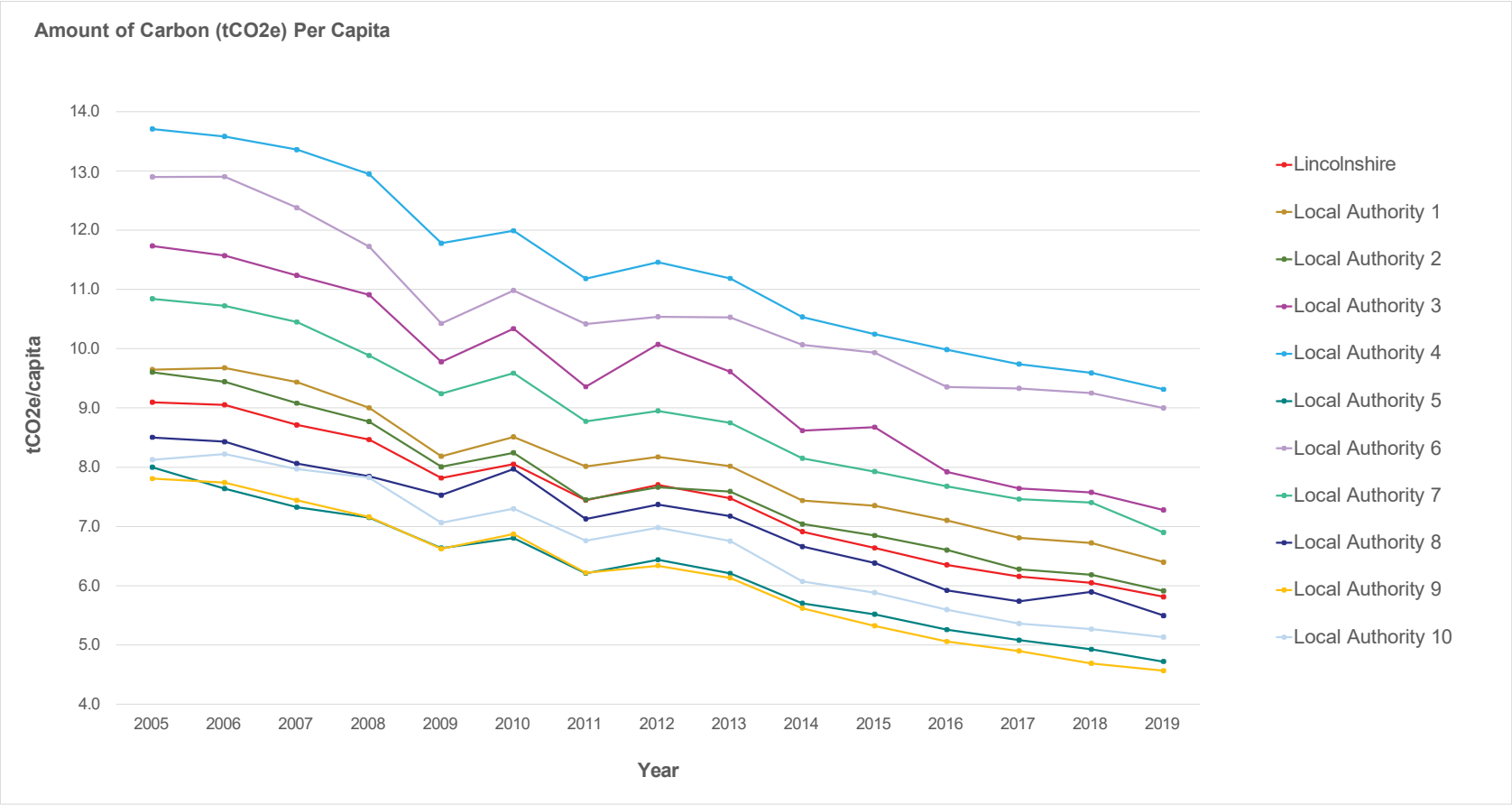




Figure 7 – Amount of Carbon (tCO2e) Per Capita

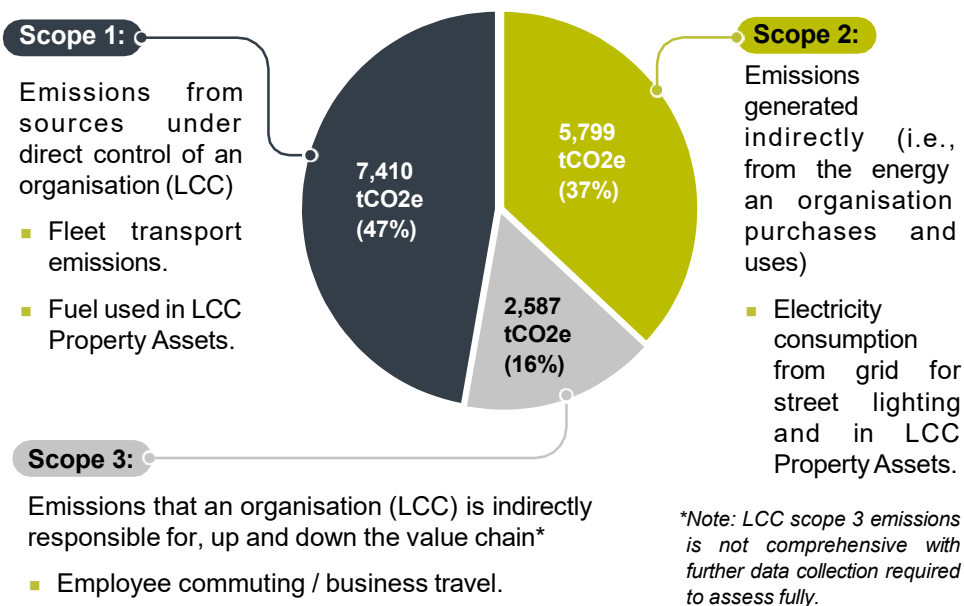


LCC PERFORMANCE: EMISSION SECTORS AND PROGRESS AGAINST TARGET

LCC emissions

Emissions sources are split by scope category (1, 2, 3). Definitions for each category are provided in figure 8 as well as primary activities included in reporting. Summary emissions within each scope category in 2022/23 are provided (the end of CMP3).

Figure 8 – LCC emissions by scope



Current Progress & Future Targets

Lincolnshire's net carbon neutral target year is 2050. Significant progress was made throughout the CMP3 period, exceeding the target to reduce emissions by 20% (against the 2016/17 baseline) and achieving a 44.9% emissions reduction at the end of 2022/23, as shown in Figure 9.

However, much of the reduction is attributable to grid decarbonisation and LCC's very successful LED street lighting program. In addition, some schools that were under LCC's responsibility in the baseline have transitioned to academy schools, meaning their emissions for all years have been taken out of the emission figures. These trends and their causes show that LCC will not be able to rely on a 'business as usual' approach to meet its targets. Rather, it will need to deliver strategic and impactful change across its estate and services.

For CMP4, the emissions baseline used is 5,800 tonnes CO₂e, based on 2022/23 emissions reporting. The target for the period of CMP4 is a 25% reduction on this baseline.

Figure 9 – LCC annual emissions 2016/17 – 2022/23

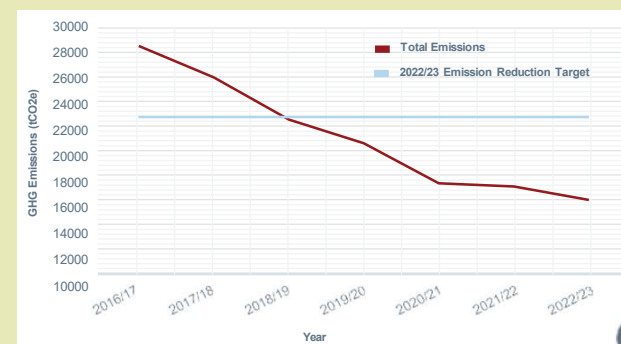
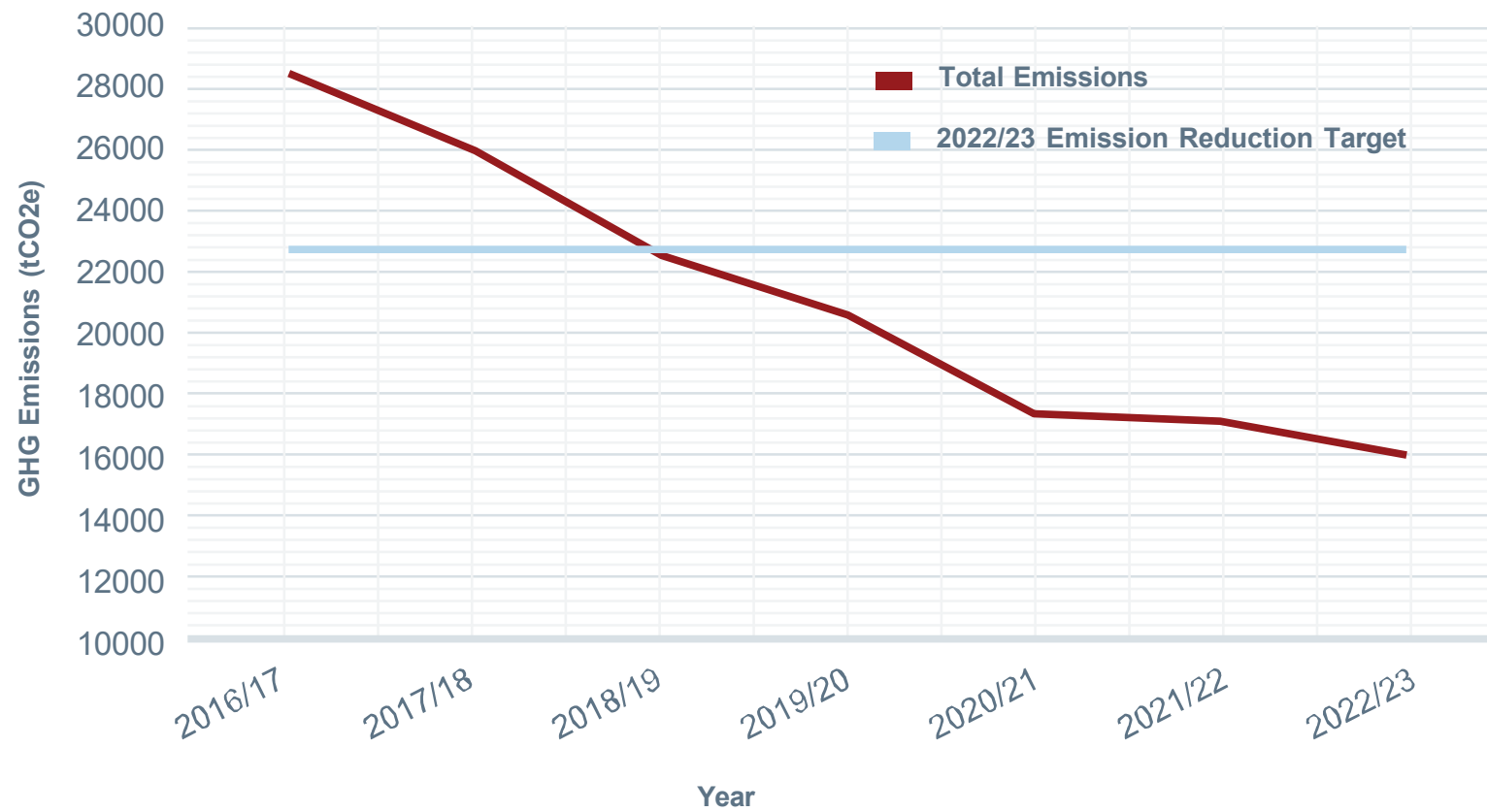




Figure 9 – LCC annual emissions 2016/17 – 2022/23



APPROACH TO ACTION IDENTIFICATION

The approach taken to identify and develop the actions in this CMP4 has followed multiple stages.

Stage 1: Technical insight and experience of sustainability staff have identified the areas of focus for CMP4. This step involved review of current emissions data across LCC, analysis of the emissions by type and by service area, as well as insights from benchmarking and best practice work undertaken earlier in the project.

Stage 2: Engagement with LCC staff from across key service areas that focused on identifying existing strengths, opportunities for the future across services to produce a long-list of potential actions for LCC. The workshop also considered what enabling features needed to be considered as part of the actions, such as partnership and funding. This process was supported by one-to-one engagement with key staff across the Council that were unable to attend the workshop. This ensured their input on key questions.

Stage 3: Actions analysed and refined through technical review and development by WSP with close engagement with LCC staff. The focus of this stage was to assess the carbon and cost benefits of actions. It also considered achievability, availability of technology and political and financial acceptability, as well as potential co-benefits and alignment with local plans and just recovery.

Stage 4: Packaging and prioritisation of actions drawing on the factors considered in stage 3. Actions have been grouped together as sets of packages aligned to service area. Actions have also been grouped as:

- **Primary actions** – specific actions, or programmes of action, that will have a tangible carbon reduction impact.
- **Enabling actions** – required to inform, scope, govern or resource primary actions.

A high-level assessment of cost and impact has been included in the actions. This

assessment is relatively straightforward to make for the project specific actions. However, for the strategy and plan type actions the assessment is indicative and will depend on the projects that emerge during the delivery stages in the latter years of CMP4. Further assessment of cost and impact will be incorporated through the use of business cases and assessment frameworks (such as PAS 2080).

Further detail on how these actions work together and their delivery programme are set out on the next page. To jump to a specific action area please click on the boxes in Figure 10.

Figure 10 – CMP4 Key action areas overview



DELIVERY APPROACH AND TIMELINE

CMP4 presents a phased delivery of actions

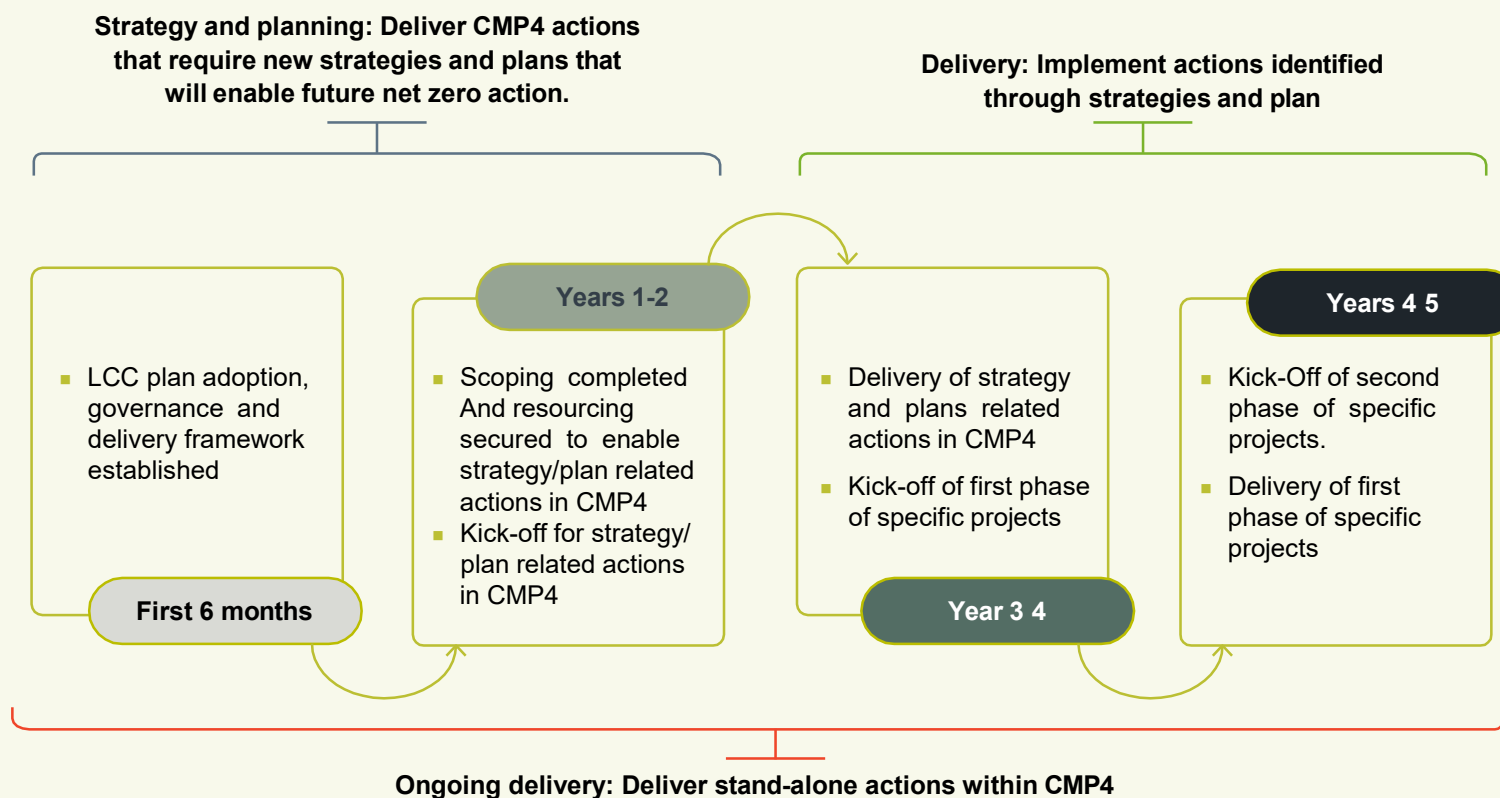
The delivery approach for CMP4 is presented in distinct phases

- Strategy and planning (which captures many of the enabling actions)
- Delivery of first and second phase actions
- Ongoing delivery

This approach is summarised in figure 11 and reflects that many of the actions in CMP4 are to establish a strategy or plan. This planning and strategy phase is required to inform and prioritise future delivery focussed actions.

Stand-alone delivery actions that are not dependent on a wider strategy or plan will continue to be delivered throughout the lifespan of the CMP.

Figure 11 – CMP4 action delivery approach over period of plan



ACTION AREA: BUILDINGS AND INFRASTRUCTURE

The key challenges for LCC to overcome

Emissions from buildings and infrastructure make up 58% of LCC's emissions.

LCC needs to be able deliver a strategic, planned, and funded approach to address the scale of the activity required to enable its buildings to meet net zero by 2050.

To date, LCC has been effective in its approach of exploring and phasing the implementation of low carbon technologies and action is underway to deliver fabric and energy efficiency measures through specific projects.

For the medium term, the delivery of actions to enable net zero buildings are stalled due to uncertainty about the future use of the estate. LCC is also facing challenges in how it incorporates actions that will deliver carbon reduction into its capital program. This will require incorporating net zero action into LCC's planning and funding decision making capital project planning. This incorporated

approach will also need to be implemented into LCC's maintenance activity.

The approach to address the challenges

LCC will continue to deliver the existing programmes of building and infrastructure work underway already.

Key actions to overcome the medium-term challenges for the first 1-2 years will include: rationalising the estate to give certainty to its future use and priority; developing a strategy, funding approach and programme of works for building improvements; and an approach to net zero / decarbonisation in the construction sector, and a green refurbishment plan. From here, LCC will be able to progress with a phased approach to delivery across the lifespan of CMP4.

[PAS2080:2023](#) provides a specification for managing whole-life carbon in buildings and infrastructure, while responding to the urgency of the climate emergency and consideration of the wider built environment.

Embedding PAS2080:2023 within LCC's approach to managing and developing its buildings and infrastructure will support it to achieve best value carbon reduction decisions.

Below are the high-level focus areas for each category of building and infrastructure within the LCC estate.

LCC Corporate Property

We will identify and deliver carbon reduction actions across our estate and develop clear approaches to prioritise our programme of works, property rationalisation and funding mechanisms for improvements.

Schools

We will maximise opportunities to implement measures to reduce carbon emissions, improve energy efficiency and develop a clear approach to implementing these improvements.

Historic Buildings

We will identify and deliver low-carbon technologies to support our historic infrastructure and their surrounding sites whilst ensuring we preserve Lincolnshire's rich cultural heritage.

Fire & Rescue

We will investigate utilisation opportunities to optimise our existing assets and improve their efficiency without compromising the key service activities that serve our community.

ACTION AREA: BUILDINGS AND INFRASTRUCTURE

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
Specific Actions							
1	Identify and secure external buildings and infrastructure funding opportunities with a focus on priority development areas.	Sustainability Team	Lifespan of CMP4	Internal Staff	N/A	N/A	-
2	Identify and deliver carbon reduction actions (with a focus on building retrofit, heat and energy actions) across the schools estate via the LCC's capital works programme (aligned to estates prioritisation approach – Action 11).	Head of Facilities Management Capital Works Sustainability Team	Lifespan of CMP4	Additional Funding – may be required where net zero actions create additional costs	H (Impact varies by project)	H (Impact varies by project)	-
3	Utilise the new/capital estates programme to deliver buildings and infrastructure that achieves net zero standards using PAS2080:2023 guidance.	Capital Works	Lifespan of CMP4	Internal Staff	H	Project Dependent	Strategy Team Corporate Estates Team
4	Identify and deliver net zero building improvements in line with PAS2080 (with a focus on building retrofit, heat and energy actions) across council properties and assets through ongoing maintenance (aligned to estates prioritisation approach – Action 11).	Head of Facilities Management	Lifespan of CMP4 - Rolling programme dependent on funding level	Additional Funding (Internal & External) required	H (Impact varies by project)	H (Impact varies by project)	-

ACTION AREA: BUILDINGS AND INFRASTRUCTURE

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
5	Incorporate whole life carbon appraisals (following best practice such as PAS2080 and Green Book Supplementary Guidance) into business cases for all projects.	Capital Works Sustainability Team	Lifespan of CMP4	Internal Staff. Additional funding and expert resource may be required.	H	L	-
6	Identify and deliver appropriate low-carbon solutions for listed/historic buildings and curtilage by drawing on sector expertise (e.g., Historic England) to support with experience and technical expertise.	Culture Head of Facilities Management	Lifespan of CMP4	Internal staff to identify opportunities. Internal funding with some additional funding required for delivery of specific projects.	M (Impact varies by project)	M (Impact varies by project)	-
7	Implement identified decarbonisation measures in the Decarbonisation Report across the 20 priority properties. Building-specific measures include installation of ASHPs, Roof Replacements, Glazing and External Wall Insulation.	Capital Works Head of Facilities Maintenance	Lifespan of CMP4	External funding required to deliver programme actions.	H	H	Communications Team

ACTION AREA: BUILDINGS AND INFRASTRUCTURE

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
8	Deliver the Lincolnshire Net Zero Secure Childrens Home and incorporate lessons learned from project into future capital projects.	Capital Works	Lifespan of CMP4	External funding secured from Department of Education	M	H	Department for Education
9	Deliver the Orchard House B Refurbishment and incorporate lessons learned from project into future decarbonisation of the LCC estate.	Capital Works	Lifespan of CMP4	Internal funding secured	M	M	-
10	Scope and deliver an ASHP pilot scheme to better understand the feasibility and delivery implications for the LCC estate	Head of Facilities Maintenance Capital Works	1- 2 years	Funding required	M	L	-
Enabling Actions							
11	Develop an approach and delivery plan for LCC property to optimise and rationalise the estate with a focus on whole life carbon frameworks to inform actions are best focused.	Corporate Property	1 – 2 years	Strategy Team Staff Resource Internal Funding	TBC (Dependent on opportunity)	TBC (Dependent on opportunity)	Strategy Team Corporate Property
12	Develop a clear strategy, high-level programme of works and associated potential funding approaches for building improvements across the LCC estate. Consider how the strategy incorporates targets to enable the LCC estate to align to Government EPC ratings and sector-wide targets.	Head of Facilities Maintenance	1 – 2 years	Internal staff resource	L	L	Sustainability Team Capital Works / Development Team FM Team

ACTION AREA: BUILDINGS AND INFRASTRUCTURE

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
13	Scope and define the maintenance and improvements budgets to ensure clarity about how improvement programme is delivered by staff and budgets.	Sustainability Team	12 months	Internal staff resource	L	L	Facilities Maintenance Capital Works
14	Develop an approach to net zero / decarbonisation in the construction sector, alignment with Action 12, that aligns best practice frameworks (PAS2080), and LCC capital works program.	Sustainability Team Corporate Property Team	12 months	Internal staff resource	L	L	Strategy Team Capital Works
15	Develop a long-term plan and delivery approach for schools' improvements.	Sustainability Team Corporate Property Team	1 – 2 years	Internal staff resource. Maintenance revenue	M (Impact varies by school)	H	Academy Trusts
16	Investigate and, if feasible, deliver a utilisation plan for on-call fire stations in Lincolnshire.	Corporate Property Fire & Rescue	1 – 2 years	Internal staff resource	L	L	-

ACTION AREA: ENERGY & LIGHTING

The key challenges for LCC to overcome

Emissions from energy and lighting make up 15% of LCC's emissions.

The council has made significant progress in the energy and lighting sector in CMP3 and has identified opportunities to reduce energy use within buildings through engagement with users.

The delivery of the actions in buildings and infrastructure will reduce LCC's overall energy demand. Future energy systems planning is required to understand the impact of a transition to decarbonised heat and energy sources as well as potential electricity grid network upgrades. Opportunities also exist to work with local partners to unlock area-wide investment and to incorporate local energy generation opportunities.

The approach to address the challenges

In the immediate term, LCC will continue to convert the remaining lighting stock to LEDs and explore new innovative technologies to continue reductions. It will work to engage

with building users and the wider community (utilising schools) to encourage energy saving and sustainable practices.

Initial work has been undertaken to identify energy decarbonisation measures across 20 priority properties and a delivery programme to roll out these measures will be undertaken. Alongside this, work will be undertaken to identify the future network requirements to support decarbonised heat and energy across the estate. This action will also consider how to make the most of wider potential energy generation opportunities across the county. Importantly it will look at delivery options through partnership that can support delivery at scale and most effectively leverage investment.

Below are the high-level focus areas for energy and lighting.

Community Efforts

We will continue to work with schools and the wider community to deliver engagement sessions focused on sustainable practices to maximise the carbon savings in everyone's daily activities.

Technological Upgrades

We will continue to implement LED technology. This will continue from our previous CMP where it was a priority action and has seen large improvements in our carbon reduction.

Planning for the future

We will undertake key activities to scope and determine if it is feasible to implement new or more advanced technology in our street lighting and properties. We will identify potential local opportunities for the development of heat generation networks.

ACTION AREA: ENERGY & LIGHTING

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
Specific Actions							
17	Develop and deliver programme of student and community engagement in schools to promote energy saving and sustainable practices.	Sustainability Team Education Contact	Lifespan of CMP4	Existing stakeholder network. Additional resource to expand impact.	L	L	School Contacts
18	Convert the remaining 10 percent of lighting ballasts to LED across the LCC estate.	Street Lighting Team	Lifespan of CMP4	Internal and additional external funding.	M	M	-
19	Undertake scoping and, if feasible, deliver solar provisions into street lighting.	Sustainability Team Street Lighting Team	1 – 2 years (scoping) Lifespan of CMP4 (delivery)	Internal and additional external funding.	M	M	-
Enabling Actions							
20	Implement identified energy decarbonisation measures across the 20 priority properties. Actions include LED lighting and solar panel provisions.	Head of Facilities Maintenance Capital Works	Lifespan of CMP4	External funding required to deliver program actions.	H	H	Communications Team

ACTION AREA: ENERGY & LIGHTING

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
21	Develop a clear energy strategy that considers the use of green energy to supply LCC estates and operations.	Commercial Services Infrastructure Procurement	Ongoing	Internal staff resource	L	L	-
22	Review estate to identify potential local heat generation opportunities and the related network requirements, and options for potential upgrades in line with the UK Government Heat Networks Zoning Pilot.	Corporate Property Team Sustainability Team	1 – 2 years	Internal and additional external funding.	H	L	-

ACTION AREA: TRANSPORT

The key challenges for LCC to overcome

Emissions from transport (fleet vehicles and lease and rental vehicles) make up 20% of LCC's total emissions. Emissions from staff travel have not reduced since the baseline year (which is consistent with national trends).

LCC recognises the importance of decarbonising its fleet, influencing staff travel and supporting other service operators in Lincolnshire to do the same. Decarbonising transport and travel will require investment in both fleet and infrastructure to support the change. Several challenges exist, with limited current options for decarbonised heavy vehicles for use in specific services such as fire and rescue appliances and gritters.

In delivering EV infrastructure, opportunities exist to partner across Lincolnshire (such as with the wider public sector, NHS, Academy Schools and key businesses) to develop networks of EV infrastructure via shared

investment. LCC needs to have a clear plan about how it goes about this, which it can then use to inform priorities and investment decisions.

LCC is responsible for developing and managing the transport network and opportunities exist to apply whole life carbon assessment. This will provide a better understanding of the emissions impact across the project and improve decision making.

The approach to address the challenges

Primary actions for CMP4 will include exploration of options (including technologies, procurement options and funding sources) to deliver the transition to low carbon vehicles across the fleet. In addition, LCC will scope and develop key policies and plans to inform action. These will cover sustainable travel for staff, an EV infrastructure plan and an approach for incorporating whole life carbon assessment into transport business cases.

Below are the high-level focus areas for each area for transport

Our Fleet

We will utilise opportunities to procure, **switch and upgrade** our vehicles to the most suitable technologies that will maintain our key operations across the county.

Fire & Rescue

We will **assess** the ability to use vehicles with alternative fuels, whilst maintaining key services for our community. Once, feasible and applicable, we will implement technologies to reduce our carbon.

Wider Community

We will **collaborate** with businesses and other public sector agencies to electrify their transport operations and offer support to encourage decarbonisation where possible.

Planning and decision making

We will develop plans to inform our future decisions, including corporate sustainable travel and approach for EV Infrastructure. We will incorporate whole life carbon assessments into our infrastructure decision making.

ACTION AREA: TRANSPORT

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
Specific Actions							
23	Explore use of alternative fuels (vehicles) for LCC fleet.	Transport Team	Ongoing	N/A	H	L	-
24	Assess the feasibility of decarbonised technologies for gritter (i.e. EV or hydrogen vehicles) to better understand applicability for LCC and to incorporate into net zero fleet plan alongside a funding approach.	Highways Team	1 – 2 years	Internal and external funding	L	L	Fire & Rescue Transport Fleet
25	Enabling bus operators to utilise alternative low carbon vehicles (i.e. EVs or hydrogen).	Transport Team	Lifespan of CMP4	External funding required	M - H	H	-
26	Assess the feasibility of decarbonised technologies for fire and rescue fleet vehicles (i.e. EV or hydrogen) and incorporate into a net zero fleet plan alongside a funding approach.	Fire & Rescue	Lifespan of CMP4	Internal and external funding	M	L	-
27	Utilise procurement and supplier engagement to introduce suitable decarbonised vehicles into the LCC fleet via a phased fleet replacement approach.	Transport Team	Lifespan of CMP4	N/A	L	L	Highways

ACTION AREA: TRANSPORT

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
28	Undertake a review of the Mobile Library Service and identify a pathway to enable a transition to decarbonised EV vehicles.	Transport Team Culture Team	1 – 2 years	Internal and additional external funding as required.	L	M	-
29	Scope a delivery programme and obtain funding to electrify the Home to School Travel Programme (Buses / Taxis).	Transport Team	1 – 2 years for program development	External funding required.	M - H	M - H	Service Suppliers
Enabling Actions							
30	Develop a Corporate Sustainable Travel Policy that aligns with LCC's transport strategies, the sustainable travel hierarchy and transport related net zero targets.	Sustainability Team Environment Board Members of CLT	1 – 2 years	Internal funding and internal staff resource	M	M	Transport Team Corporate Property Team
31	Develop EV Infrastructure Plan for delivery across LCC's estate (that includes funding and delivery approaches). This to be consistent with the corporate sustainable travel plan and fleet decarbonisation plans. This plan should also consider how EV infrastructure delivery could be aligned with the plans of county partners (such as the NHS, wider public sector, Academy Schools and key businesses) to enhance impact and value for money.	Corporate Property Team	1 – 2 years	Internal funding and internal staff resource	L	L	Head of Facilities Maintenance

ACTION AREA: TRANSPORT

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
32	Delivery of phased roll out of EV infrastructure across the LCC estate.	Corporate Property Team	3 – 5 years	Internal and external funding	H	M	-
33	Incorporate whole life carbon appraisals into transport network management and development to ensure low carbon decision are taken.	Highways Sustainability Team	Lifespan of CMP4	Internal Staff. Additional funding and expert resource may be required.	H	L	-

ACTION AREA: GOVERNANCE, DELIVERY AND COMMUNICATION

The key challenges for LCC to overcome

CMP4 actions present an ambitious and strategic work programme which takes a different approach to prior plans. To deliver the strategy and planning 'enabling actions', LCC will need to undertake prioritisation and alignment with wider Council activity, while establishing governance and resource requirements.

LCC's Green Master Plan and its principles provides an overarching framework for net zero action across LCC. However, these principles do not currently provide sufficient strategic guidance to inform how LCC should go about delivering net zero action. Areas where guidance would be beneficial include:

- Setting medium- and long-term direction
- Setting and balancing priorities
- Approaches to overcome strategic challenge (such as funding, skills and capacity).

Successful delivery of CMP4 will also require action on a series of cross-cutting challenges, such as staff, community and business engagement, procurement and data and reporting to remain aligned to best practice.

The approach to address the challenges:

The actions set out in this section provide a pathway to successful delivery of CMP4 and are all classed as enabling actions. Lead actions include ensuring senior leadership team oversight, establishment of delivery groups and work plans to meet the 1–2-year delivery timeframes actions and progress reporting.

Further strategy work is required to set principles and objectives to be incorporated into the strategy and planning actions for CMP4. In addition, a review of LCC's net zero trajectory will benefit LCC in its emissions reduction journey, as will incorporation of whole life carbon management such as PAS 2080:2023.

Identified actions focus on engagement and communications with staff, looking to use procurement to enhance net zero decisions across LCC, and clarifying carbon accounting as well as application of the net zero target.

Below are the high-level focus areas for each area for governance, delivery and communication.

Communication

We will increase and improve our communication, both internally and externally, to ensure that we are working collaboratively and efficiently to reach our goals whilst remaining transparent on our progress with the residents we serve.

Technological Upgrades

We will review existing plans to support the establishment of a clear delivery approach that prioritises key actions and any associated funding opportunities.

Data and Reporting

We will review our carbon accounting processes to align with best practice and introduce enhanced reporting measures over the lifespan of CMP4 to ensure we remain on track to meet our targets. We will also look to introduce interim targets in our journey to 2050.

GOVERNANCE, DELIVERY, AND COMMUNICATION

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
Specific Actions							
34	LCC senior leadership team and elected members to review and endorse CMP4 (including ensuring budget and resource is made available in a phased approach).	Environment Board Sustainability Team	6 months	N/A	N/A	N/A	All Service Areas
35	Establish a delivery group(s) as appropriate with a clear work programme and reporting framework to ensure delivery and alignment, and communication across related service areas.	Sustainability Team	Lifespan of CMP4	N/A	N/A	N/A	All Service Areas
36	Introduce an annual monitoring and reporting approach for CMP4.	Sustainability Team	Lifespan of CMP4	Internal staff resource	N/A	N/A	All Service Areas
37	Review Green Master Plan with intent to define how the principles apply to delivering those within CMP4 and to support the Sustainability Board in ensuring is delivered most effectively for LCC.	Environment Board Sustainability Team	6 months	Internal staff resource	L	L	All Service Areas

GOVERNANCE, DELIVERY, AND COMMUNICATION

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
38	Develop a programme of net zero communications and staff engagement that is delivered alongside CMP4 with a focus on - Communicating and empowering staff on how they can deliver net zero in carrying out their roles. - Developing carbon literacy across LCC staff.	Sustainability Team	Lifespan of CMP4	Internal staff resource	H	L	All Service Areas
39	Implement public education initiatives across Council buildings with public interfaces (e.g. archives / historic buildings, schools) to educate visitors and staff about action LCC is taking to achieve net zero and what action citizens can take to support.	Culture Maintenance Communications	Lifespan of CMP4	Internal staff to identify opportunities. Internal funding with some additional funding required for delivery of specific projects.	L	L	Sustainability Team
40	Incorporate enhanced net zero decarbonisation requirements within future procurement exercises.	Commercial Services Infrastructure Procurement	Ongoing	Internal staff resource	H	M	All Service Areas

GOVERNANCE, DELIVERY, AND COMMUNICATION

Action No.	Action	Lead	Delivery Timeframe	Resources	Carbon Benefits (HML)	Cost Impact (HML)	Wider Services Impact & Relationship
41	Consider and encourage carbon literacy training for LCC staff and suppliers.	Sustainability Team	Lifespan of CMP4	Internal staff resource and expert support for carbon literacy materials	L	L	All Service Areas
42	Utilise outreach opportunities with schools and the public when work has been undertaken to decarbonise buildings they utilise and generate social value in the process.	Sustainability Team Education Team	Lifespan of CMP4	Internal staff resource	L	L	School Contacts
43	Review LCC net zero target definition and internal emissions accounting (including inputs and scope classification) to ensure it aligns with best practice. Incorporate interim targets to track progress against 2050 target.	Sustainability Team	6 months	Internal staff resource	L	L	All Service Areas
44	Introduce climate indicators and targets as part of LCC annual performance reporting.	Sustainability Team	Lifespan of CMP4	Internal staff resource	L	L	All Service Areas
45	Embed carbon management and adaptation into outline business cases (OBCs) and throughout projects by developing a clear set of questions to be considered on projects. This may involve consulting best practice including the Green Book Supplementary Guidance on energy use and greenhouse gas emissions in business case development.	Sustainability Team	Lifespan of CMP4	Internal staff resource	L	L	All Service Areas

GLOSSARY

Term	Definition
Adaptation	In human systems, the process of adjustment to actual or expected climate and its effects, to moderate harm or exploit beneficial opportunities. IN natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.
Carbon Baseline	The amount of carbon dioxide or greenhouse gas emissions that a business or organisation emits before any activity to reduce its emissions it undertaken. This baseline would include an inventory of the carbon emissions produced from a chosen year and serves as a starting point from which the journey to carbon neutrality or net zero begins (Carbon Trust, ND).
Carbon Dioxide (CO ₂)	A naturally occurring gas, CO ₂ is also a by-product of burning fossil fuels (such as oil, gas and coal), of burning biomass, of land use changes (LUC) and of industrial processes (e.g., cement production). It is the principal anthropogenic greenhouse gas (GHG) that affects the Earth's radiative balance.
Carbon Literacy	An awareness of the carbon costs and impacts of everyday activities, and the ability and motivation to reduce emissions, on an individual, community and organisational basis (Carbon Literacy Project, 2024).
Carbon Neutrality	Carbon neutrality means having a balance between emitting carbon and absorbing carbon from the atmosphere in carbon sinks. Removing carbon oxide from the atmosphere and then storing it is known as carbon sequestration. To achieve net zero emissions, all worldwide greenhouse gas (GHG) emissions will have to be counterbalanced by carbon sequestration (European Parliament, 2023).
Climate	In a narrow sense is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organisation. The relevant quantities are most often surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system.

GLOSSARY

Term	Definition
Climate Change	Refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use.
Co-benefits	The positive effects that a policy or measure aimed at one objective might have on other objectives, thereby increasing the total benefits for society or the environment. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors.
Decarbonisation	The process by which countries, individuals or other entities aim to achieve zero fossil carbon existence. Typically refers to a reduction of the carbon emissions associated with electricity, industry and transport.
Enabling Mechanisms	Enabling mechanisms are management and other approaches that engender execution in accordance with policy and planning intent (Peltz, Eric, et al, 2012).
Greenhouse Gases (GHG)	Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of radiation emitted by the Earth's ocean and land surface, by the atmosphere itself, and by clouds. This property causes the greenhouse effect. Water vapour (H ₂ O), carbon dioxide (CO ₂), nitrous oxide (N ₂ O), methane (CH ₄) and ozone (O ₃) are the primary GHGs in the Earth's atmosphere.
Green Book Supplementary Guidance	The Green Book is the government's guidance on options appraisal and evaluation. The supplementary guidance contains more detailed specific guidance on specific issues and applying the Green Book in particular contexts (UK Government, 2023).
Interim Reduction Targets	Targets that refer to specific milestones or goals set within a larger framework to reduce carbon emissions. Ensures that companies / organisations are on track to meet their stated goals.
Mitigation	A human intervention to reduce emissions or enhance the sinks of greenhouse gases.

GLOSSARY

Term	Definition
Net Zero	Reduction of anthropogenic greenhouse gas emissions to zero or to a residual level that is consistent with reaching net zero emissions in eligible 1.5 °C pathways (hence time-bound) and neutralizing the impact of residual emissions (if any) by removing an equivalent volume of carbon
PAS2080	A globally applicable standard for managing carbon in buildings and infrastructure. It looks at the whole value chain and aims to reduce carbon and cost through intelligent design, construction and use (ICE, 2023).
Resilience	The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation.
Retrofit	Providing an asset with new or modified parts to upgrade existing systems. Improve functionality or in the case of carbon reduce the emissions associated with an asset.
Roadmap	A climate change roadmap is an ever-evolving document, which seeks to push the agenda for further action on climate change.
Scope 1 Emissions	Direct emissions that an organisation owns or controls.
Scope 2 Emissions	Indirect emissions that come from the generation of purchased electricity.
Scope 3 Emissions	All other indirect emissions that occur in a company's value chain. They are not produced by the company itself and are not the resolute of activities from assets owned or controlled by them, but by those that it is indirectly responsible for up and down its value chain.

GLOSSARY

Term	Definition
UK Government Heat Networks Zoning Pilot	The zoning pilot aims to develop heat networks in zones where they provide lowest cost, low carbon heat to the consumer through regulation mandating powers and market support (UK Government, 2023).
Whole Life Carbon	Refers to the total amount of carbon emissions associated with a product or service throughout its entire lifecycle. This includes all stages from the extraction and processing of raw materials, through manufacturing, distribution, use, repair and maintenance to disposal or recycling.

LIST OF ABBREVIATIONS

Abbreviation	Description
GHG	Greenhouse Gas
LCC	Lincolnshire County Council
CMP	Carbon Management Plan
LED	Light Emitting Diode
EV	Electric Vehicle
ASHP	Air Source Heat Pump
EPC	Energy Performance Certificate
OBC	Outline Business Case

