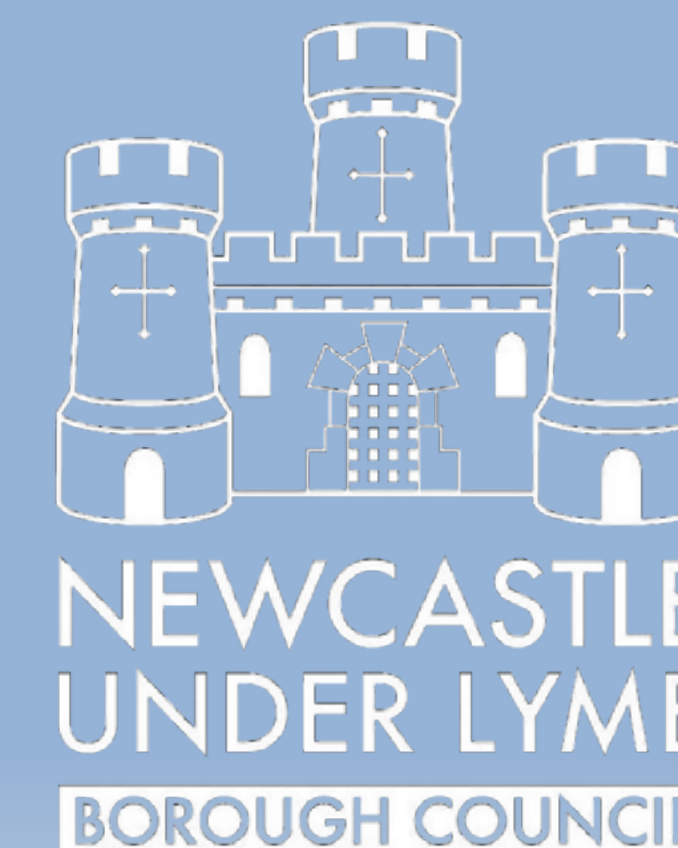


Newcastle-under-Lyme Borough Council Sustainable Environment Strategy & Delivery Plan



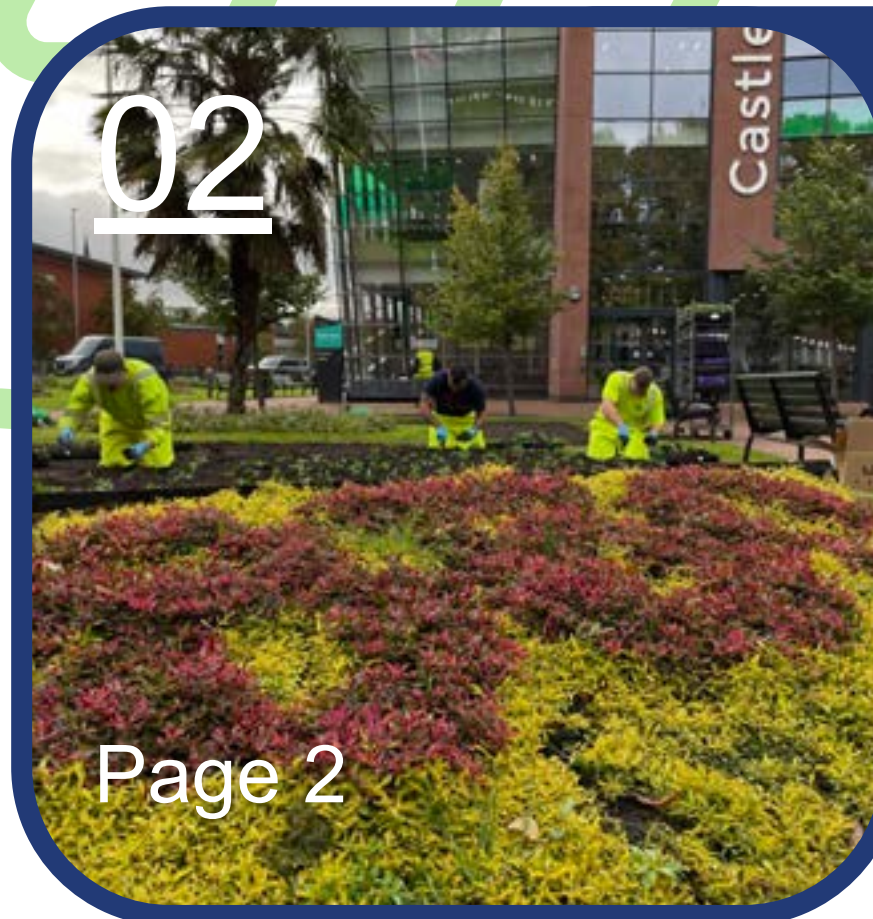
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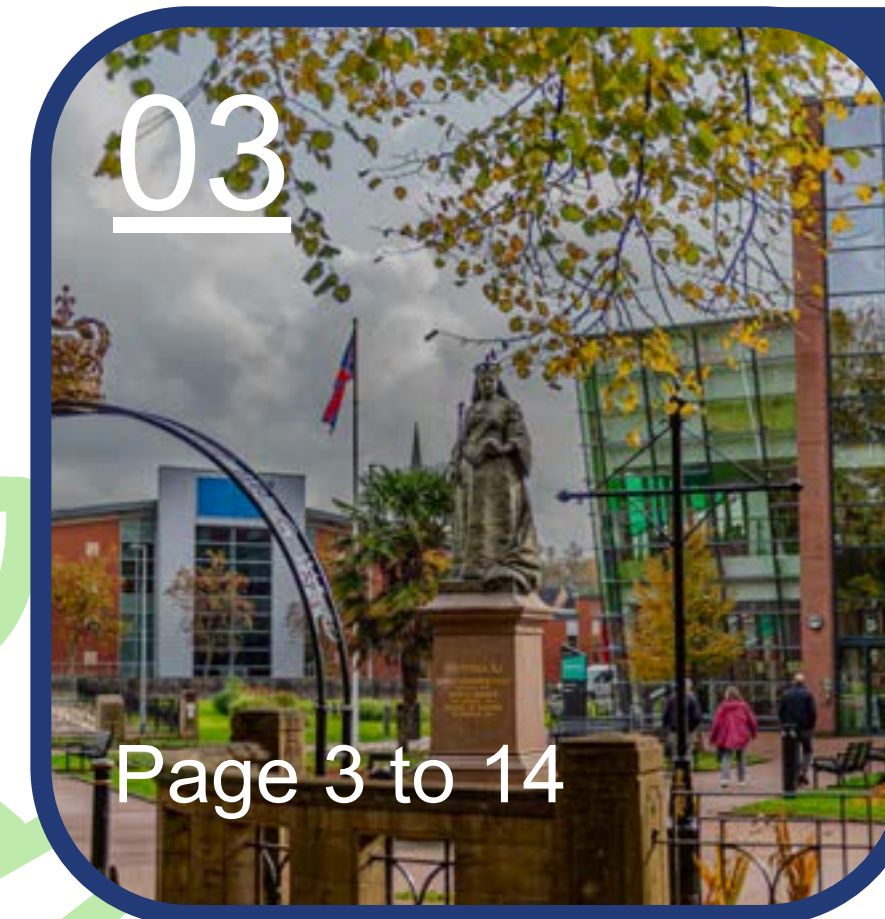
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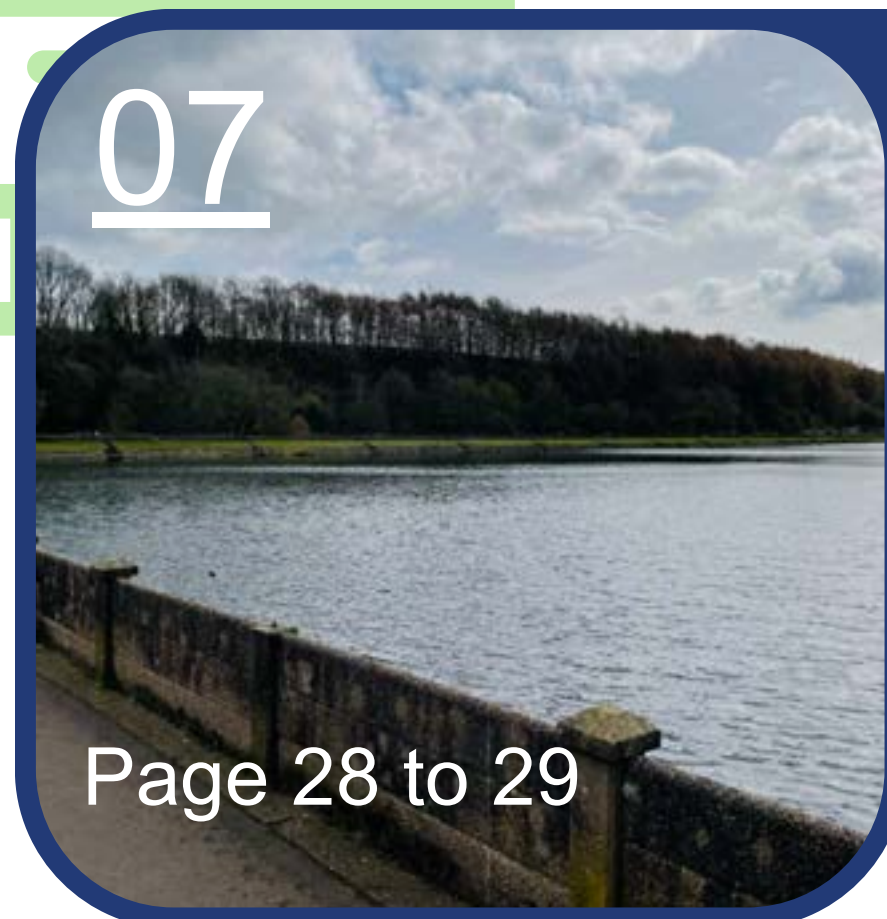
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Foreword

Newcastle-under-Lyme encompasses a wide range of beautiful natural environments, a proud and community focused society, and a local business focused economy. These are the 3 pillars that support and interconnect our borough which is why it's so important to develop these in an adaptive and resilient way for now and the future to combat climate change. Newcastle-under-Lyme Borough Council is dedicated to creating a safe and healthy future to protect and support the borough's environment, society and economy through taking sustainable measures and practices such as reducing our emissions to zero by 2030 and working towards a net zero 2050 for the entire borough. Together as a borough, we will be able to achieve our goals and protect the needs of our current and future generations.



Cllr Simon Tagg
Leader - Newcastle-under-Lyme Borough Council

In April of 2019 Newcastle-under-Lyme Borough Council passed a climate emergency motion and published the Sustainable Environment Strategy 2022-2023. Since then we have made lots of progress on our sustainable aims however must continue to deliver key developments to create a safer and healthier environment for all the Borough to live in. For this the Council have created the Sustainable Environment Strategy & Delivery Plan (SESDP) which is a holistic approach to eliminating pollution, dirty fossil fuels, extreme weather and climate, biodiversity loss which have a multitude of health and economic impacts on our society.

The borough cannot be clean and healthy by 2050 without the support and collaboration between the Council, residents, businesses and visitors to ensure that our parks, houses, work places, transport, energy systems and behaviours are sustainable for current and future generations in Newcastle-under-Lyme Borough.



Executive Summary

This Strategy and Delivery Plan for Newcastle-under-Lyme sets out a framework for collective action on climate change to achieve The Council's ambition to become net zero by 2030 and Newcastle's ambitions of becoming net zero by 2050. The Council, the residents, the businesses and the visitors all have a collective responsibility towards solving climate change.

In doing so, this strategy and plan benefits the health and wellbeing of the local environment, society and the economy in the borough. The borough will be able to reduce emissions and increase biodiversity through a set of actions tied to 4 different themes.

- **Built Environment & Energy**
- **Travel & Transport**
- **Natural Environment & Sequestration**
- **Engagement & Behaviour Change**

Each of the 4 listed themes within this strategy have proposed actions connected to solve issues that have been proven to contribute to climate change and the degradation of our local environment, community and economy. The actions listed in the delivery plan of this strategy range from actions that need to occur to reduce emissions, increase biodiversity, increase health and wellbeing and lower costs for the benefit of all.

This document will act to push the our organisation to drive foward the actions listed in this delivery plan. The document itself is a living document which means it will evolve and learn overtime as actions are achieved or new actions are created with a goal for a sustainable and net zero borough by 2050. We, Newcastle-under-Lyme Borough Council will endeavour to engage as much as possible with the community to ensure the actions that are taken are inclusive and holistic. The Council have a mission to meet the needs of our communities by empowering and enabling our people to deliver on shared goals which will be acheived through the empowering and enabling of our staff, performing well and getting things done and working together which is just what this strategy and plan holds most important at its core.

Introduction

More extreme weather and climate such as flooding and heatwaves has been increased and proven by climate science to be directly caused by the concentration of greenhouse gases in the atmosphere. The global warming or climate change we are currently experiencing will have increasingly severe impacts on weather patterns, water and food systems, communities, the economy and our natural environment. As we continue to burn fossil fuels and use the natural environment in an unrestricted way the effects of climate change will become worse and can cause a positive feedback loop where warming leads to an increase in greenhouse gases (from melting permafrost for example) which causes more climate change. As daunting as this problem may seem the Council as well as many other local authorities have the opportunity to drive sustainable change to eliminate emissions and lessen the impacts that climate change will have on our environment, borough and economy.

In 2018 the Intergovernmental Panel on Climate Change (IPCC)¹ warned that urgent action was needed to eliminate greenhouse gas emissions to limit global warming to 1.5°C to avoid the worst impacts of climate change. To secure a safer future and ensure this would not occur, 191 countries approved the Paris Agreement to keep global warming below 2°C compared to pre-industrial levels. The IPCC have more recently announced in 2021 that without immediate action 1.5°C and 2.0°C will be out of reach.

With these announcements from the IPCC Local Authorities around the UK began declaring climate emergencies, as did Newcastle in 2019 and planning for a cleaner and healthier future. As part of this declaration the Council put together a strategy to combat climate change and the loss of our natural environment. This plan has now expired and has been redeveloped into this new document to drive change until a sustainable Newcastle-under-Lyme by 2050.

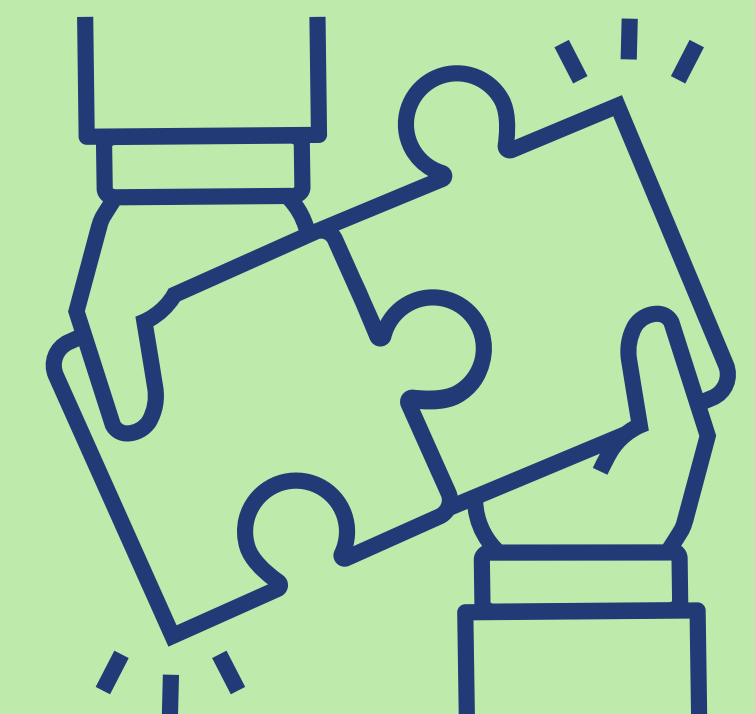
Climate Change & Sustainability

- What is it and how does it impact us?
- Scope Emissions
- The benefits of sustainability



Commitment & Collaboration

- Aims and Objectives
- Working with Newcastle Borough and developing opportunities



Delivering & Developing Actions

- Newcastle's baseline
- Action themes
- Governance and Upholding a Live Strategy

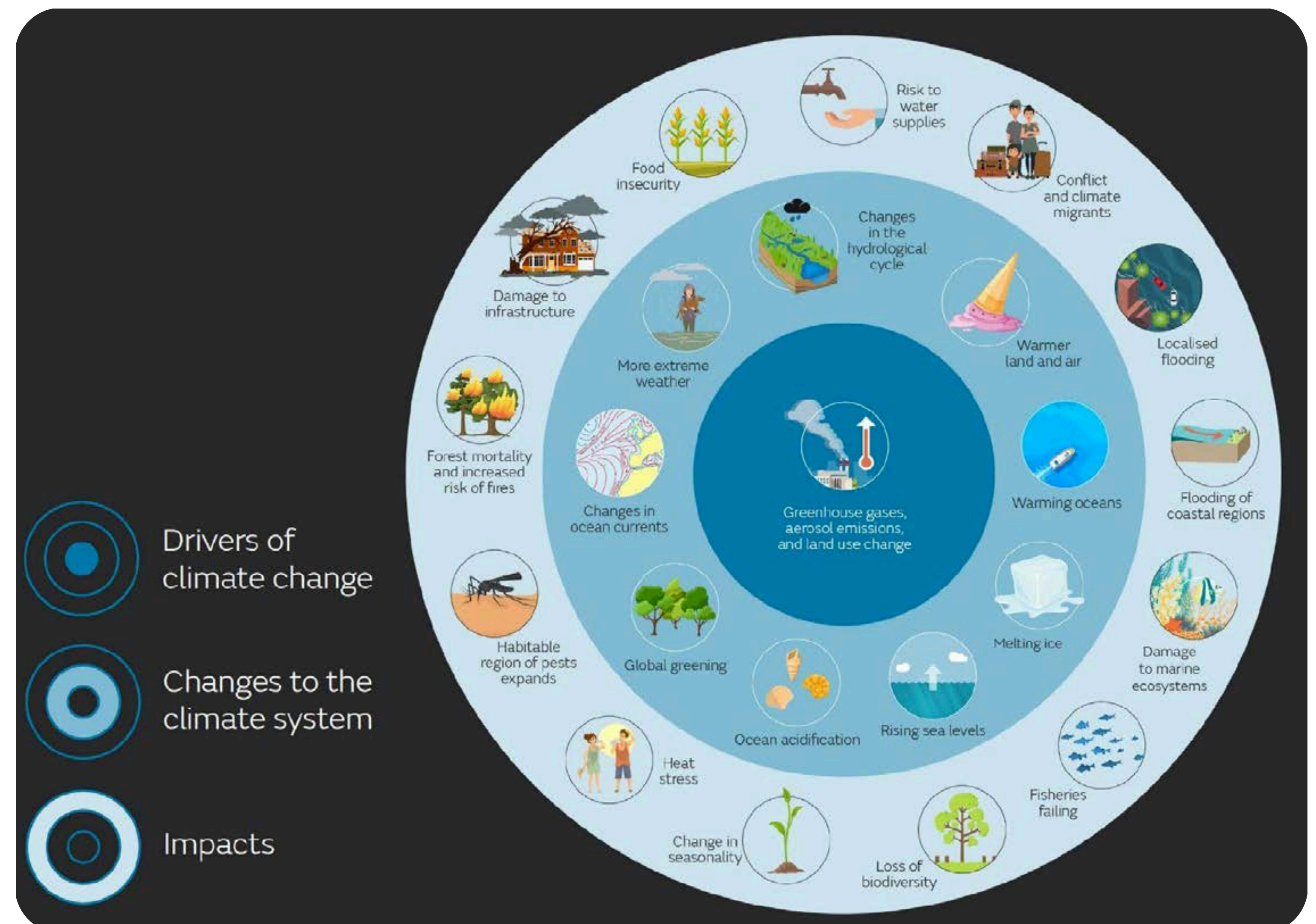


What is Climate Change?

Climate change is the long-term shift in temperatures and weather patterns. Since the 1800s, human activities such as burning fossil fuels like coal, gas and oil have been the main driver of climate change. Through burning fossil fuels and undertaking other polluting activities we release greenhouse gas emissions like carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and chlorofluorocarbons (CFCs) that act like an extra blanket wrapped around the earth, trapping the sun's heat in and raising temperatures which causes the climate to change. The impacts from climate change will be felt globally and locally, mostly by the most vulnerable in our environment, society and economy.²

This is a graphic created by the Met Office³ that shows the drivers of climate change, changes to the climate and impacts of climate change on the planet and our society. Newcastle-under-Lyme borough may not experience some impacts such as damage to marine ecosystems or flooding of coastal regions however residents, businesses and visitors will and have already experienced some of the impacts listed below:

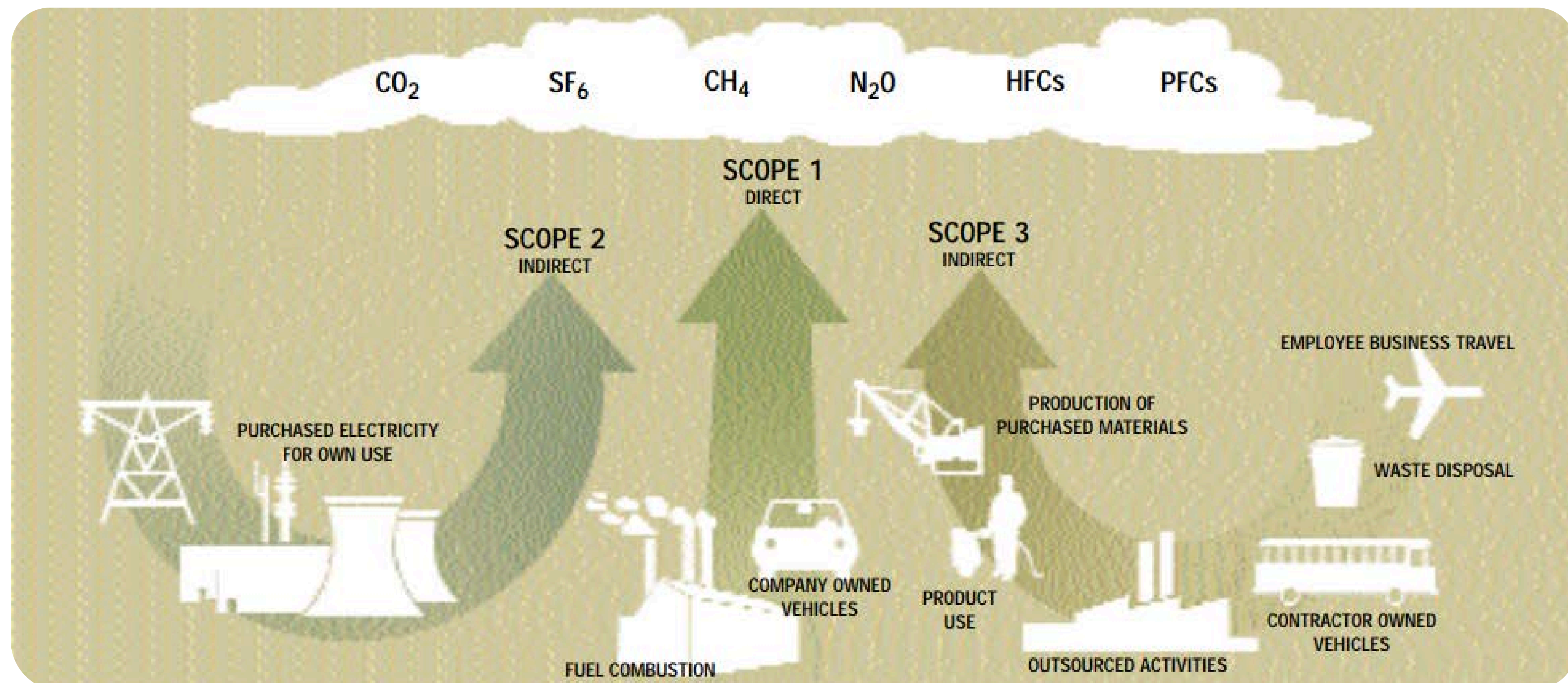
- localised flooding
- loss of biodiversity
- change in seasonality
- heat stress
- habitable region of pests expands (mosquitoes)
- forest mortality and increased risk of fires
- damage to infrastructure
- food insecurity
- risk to water supplies
- conflict and climate migrants



Scope Emissions - The Council

To identify and target greenhouse gas emissions more efficiently to achieve the organisation's net zero goal by 2030 and the borough's net zero goal by 2050, the Council uses a system of categorisation called scope emissions created by the *Greenhouse Gas Protocol* which organises the emissions created by the organisation, its suppliers and its customers. This system covers scope 1 (direct), 2 (indirect) and 3 (indirect) emissions and will help the Council understand and measure where most of its emissions come from.

The graphic below depicts the scope emissions standard for the Council as an organisation and the emissions that need to be targeted to reach net zero by 2030 including all the Council's own buildings and fleet. Scope 1 emissions are defined as emissions directly from sources the organisation owns or controls such as the fuel that is burned in the Council's vehicles or boilers for buildings. Scope 2 emissions are indirectly caused by an organisation through their purchased energy such as the electricity the Council purchases for its buildings. Scope 3 emissions are the emissions from the value chain of the activities of the Council such as the emissions from suppliers or employee business travel.⁴



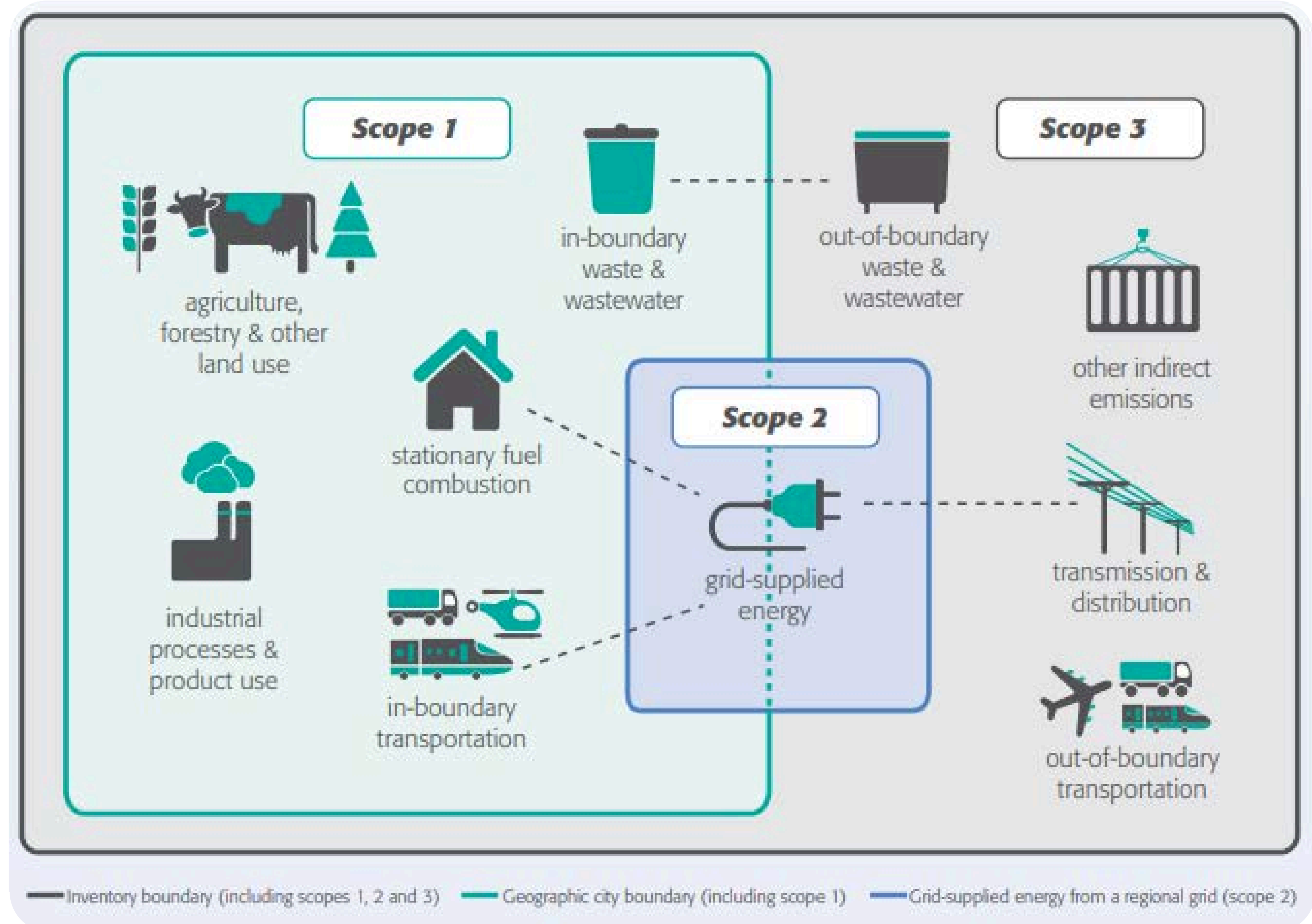
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Scope Emissions - Society

To understand how the borough can become net zero by 2050 the strategy must look at the city scope emissions standard rather than the corporate standards as these reflect the housing, businesses, transport, industry and more that produce emissions in the borough.

In this model from the *Greenhouse Gas Protocol*⁵ scope 1 emissions relate to direct emissions from the borough such as those from housing, industry, transport, land use and waste. Scope 2 emissions relates to the energy supplied by the grid to your houses, businesses and vehicles. Scope 3 emissions relates to waste outside the borough, the transmission and distribution from grid energy, out of borough transport and any other indirect emissions.

Newcastle-under-Lyme Borough Council not only has a responsibility to decarbonise itself but also the wider Borough in collaboration with residents, businesses and visitors.

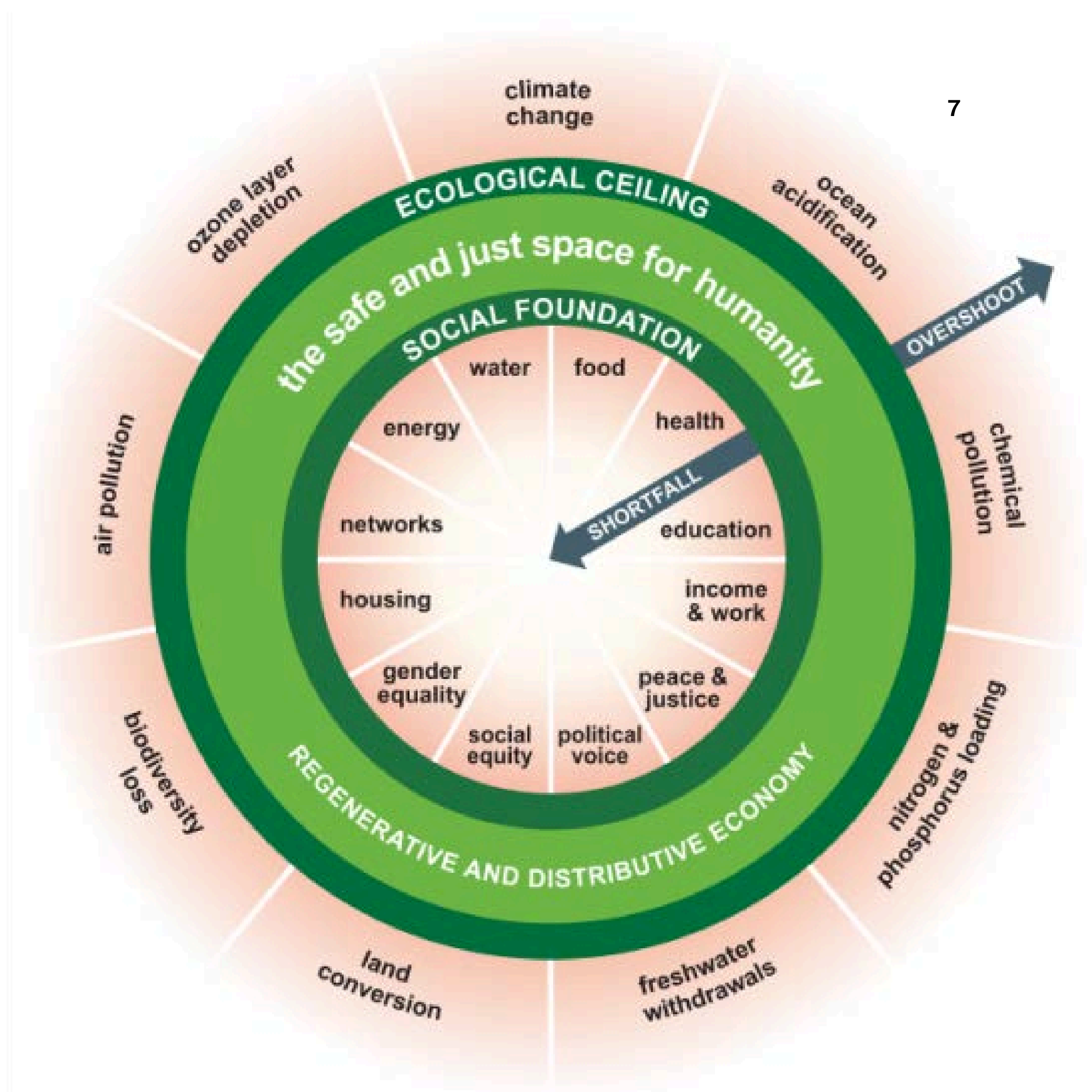


The Benefits of Sustainability

To solve the climate crisis we currently face, our society, economy and environment must become sustainable. What does this mean for the future and what will it look like?

The Sustainable Development Goals (SDGs) were created by the United Nations in 2015 and adopted by all UN Member States. These are the backbone of the 2030 Agenda for Sustainable Development which sets out 169 targets for member states for a more sustainable future. Additionally the idea of Doughnut Economics was created by academic, Kate Raworth to map out the environment where the planet and people are safe and healthy with the shortfalls that may occur in society and the overshoots that may occur in the environment.

The SDGs and Doughnut Economics both aim to end injustices in society, the economy and the environment to ensure everyone and everything can live well. All these objectives like no poverty, gender equality, affordable and clean energy, climate action and life on land all relate to a better future. A sustainable future for those in the current society and economy will not have to face difficulty in getting their next meal, will be able to upskill and find work, or not face any sort of discrimination. For the environment, the natural world will be protected and promoted, pollution will no longer impact the water or air, and human advancement will no longer impact the natural environment and people as it's clean and not powered by fossil fuels.



Aim & Objectives

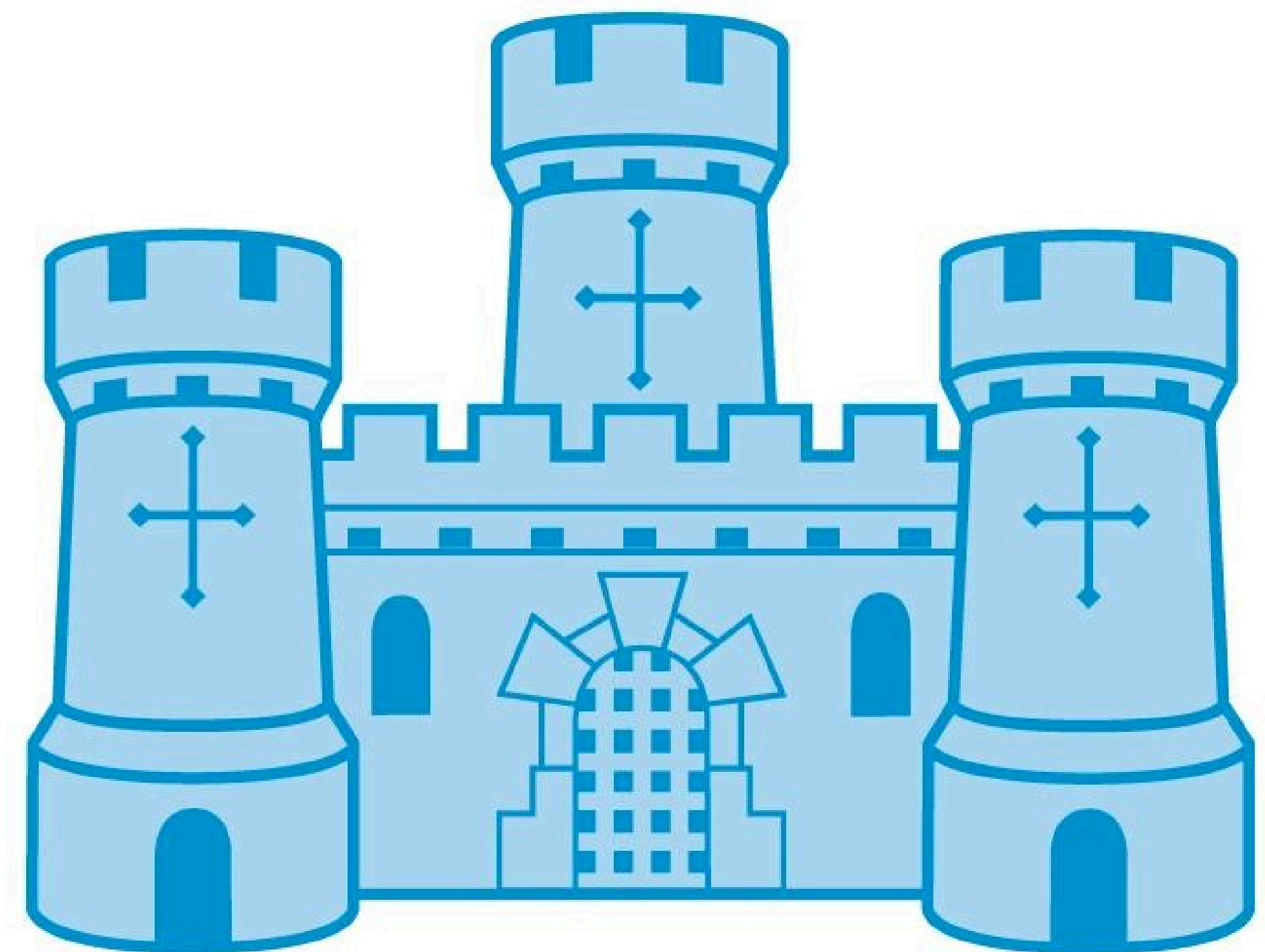
AIM

The aim of the Sustainable Environment Strategy and Delivery Plan is to drive forward a sustainable society, economy and environment in Newcastle-under-Lyme Borough for the benefit of residents, businesses, visitors and the natural environment by 2050, focusing on the built environment and energy, travel and transport, natural environment and sequestration, and engagement and behaviour change.

OBJECTIVES

The objectives listed below will drive the action needed to achieve the main aim of this strategy and delivery plan. Newcastle-under-Lyme Borough Council will:

- **Facilitate the development into a Net Zero Council by 2030** through the decarbonisation of the Council's built environment and fleet.
- **Facilitate the development into a Net Zero Borough by 2050** through the decarbonisation of housing, businesses and transport.
- **Promote the natural environment** in the borough to increase biodiversity, carbon sequestration, and storage.
- **Develop a service-focused strategy and delivery plan** in the Council to engage Council staff and deliver service owned actions.
- **Engage with residents, businesses and visitors** through online and physical communication networks to create sustainable behaviour change within the borough.



**NEWCASTLE
UNDER LYME
BOROUGH COUNCIL**

Working with Newcastle Borough

To achieve the aims and objectives laid out in this strategy and delivery plan and more specifically to ensure the borough is Net Zero and more biodiverse by 2050, the Council must work with the boroughs residents, businesses and visitors.

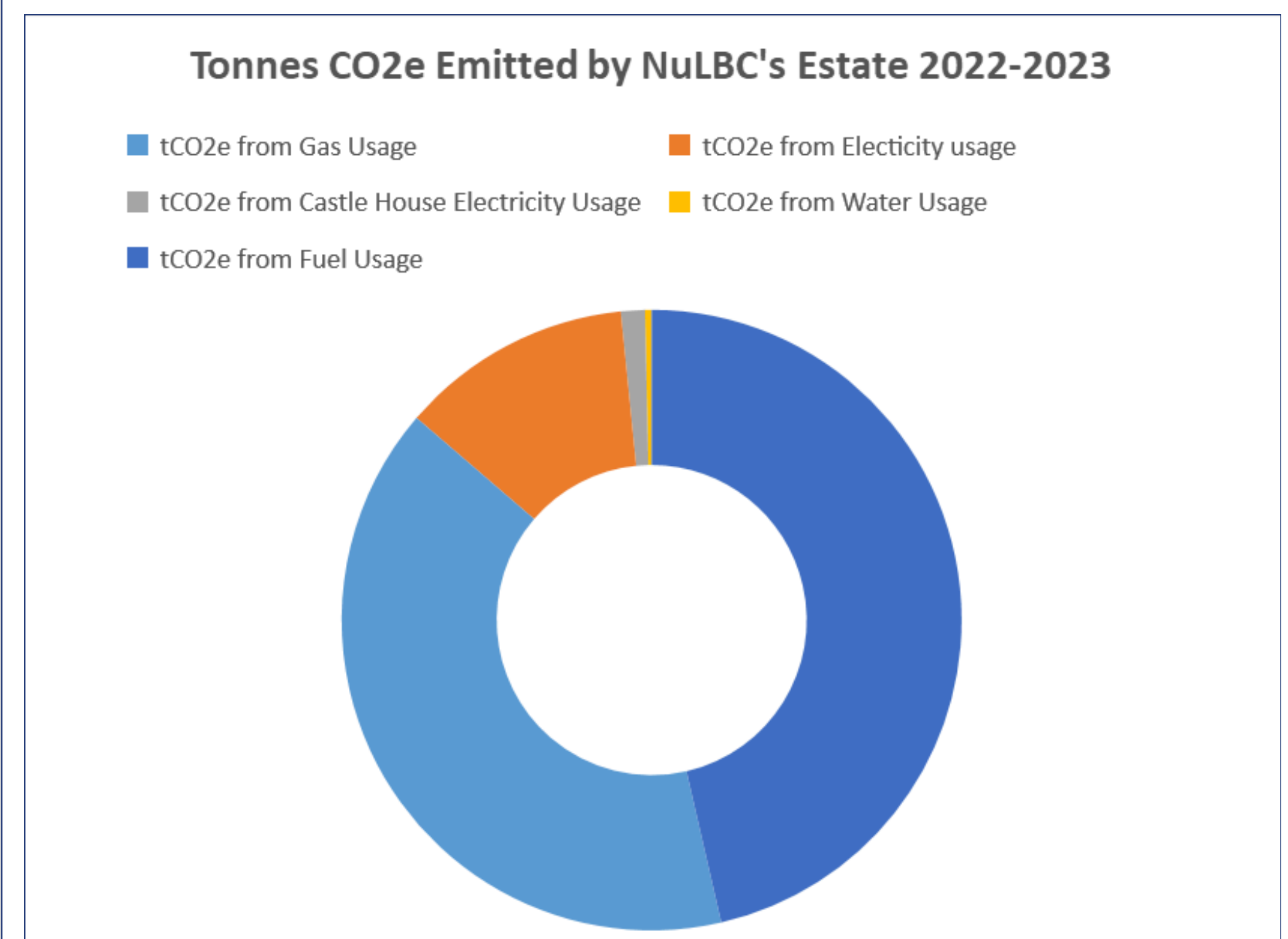
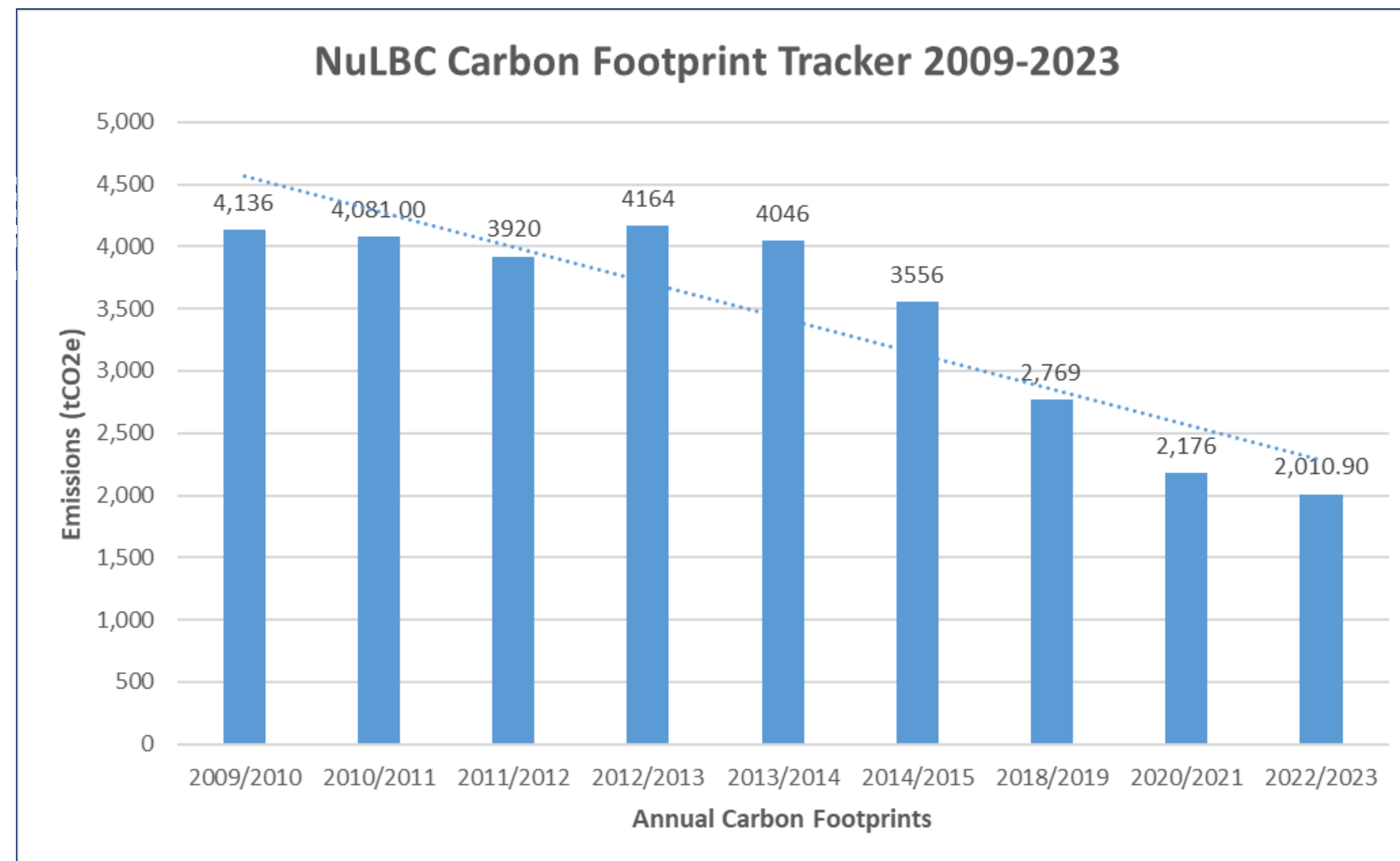
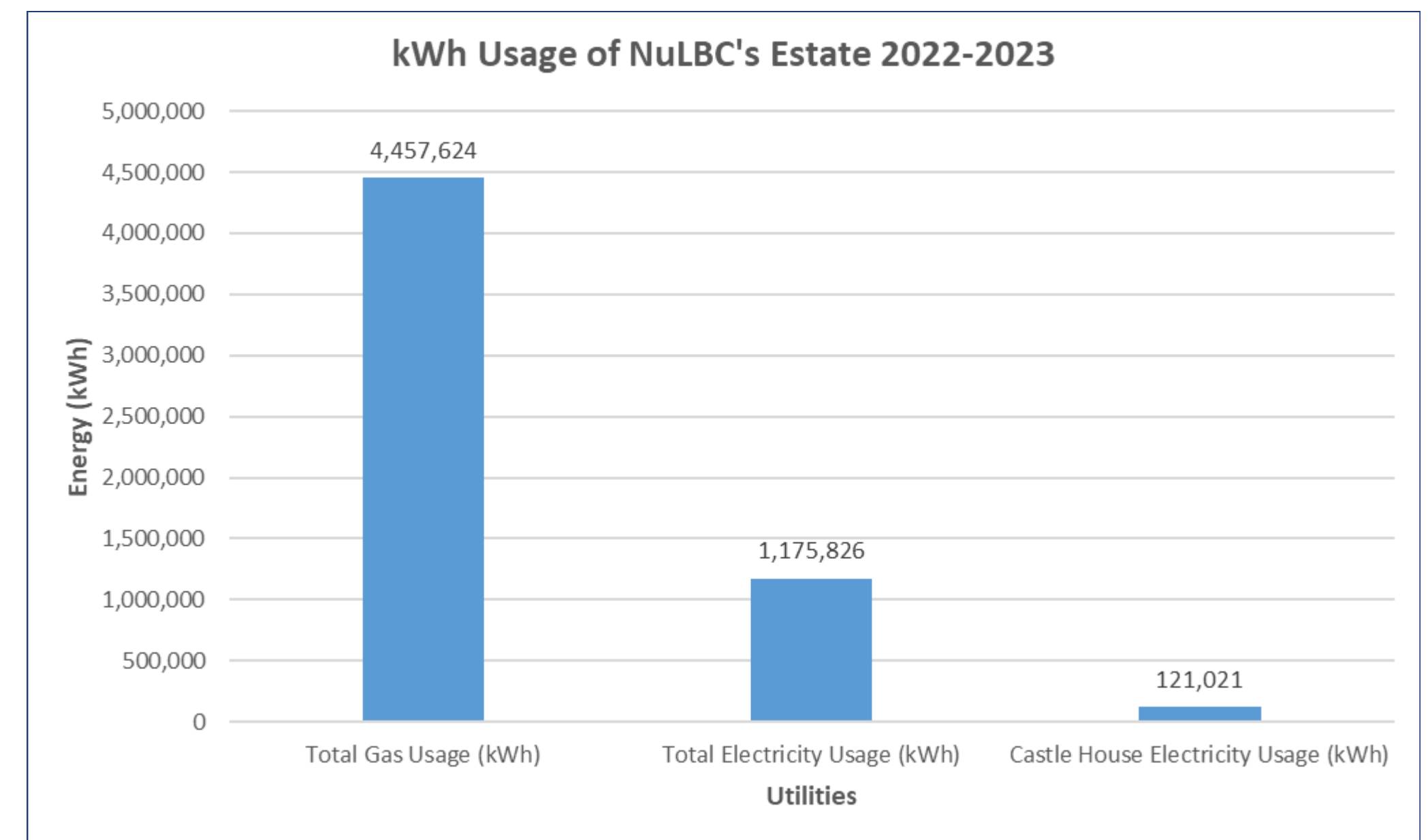
The Council will engage with residents, businesses and visitors through multiple different avenues to create a more sustainable Newcastle-under-Lyme borough. Through social media, the website, events, activities and other opportunities the Council can engage and work collaboratively with the community to create positive change. The Council also aims to begin providing opportunities for the public to decarbonise their homes and businesses through funded programmes. By engaging with the the public the Council aims to spread awareness and inform those in the borough about how to take action and where they can find opportunities to do so. The Council commits to ensuring we hear the voices of the communities in the borough and collaborate with them to tailor a sustainable future for everyone in the borough.



Newcastle Council's Baseline

Currently, Newcastle-under-Lyme Borough Council has been making great strides towards a more sustainable future, especially in reducing its own emissions from its buildings and fleet.

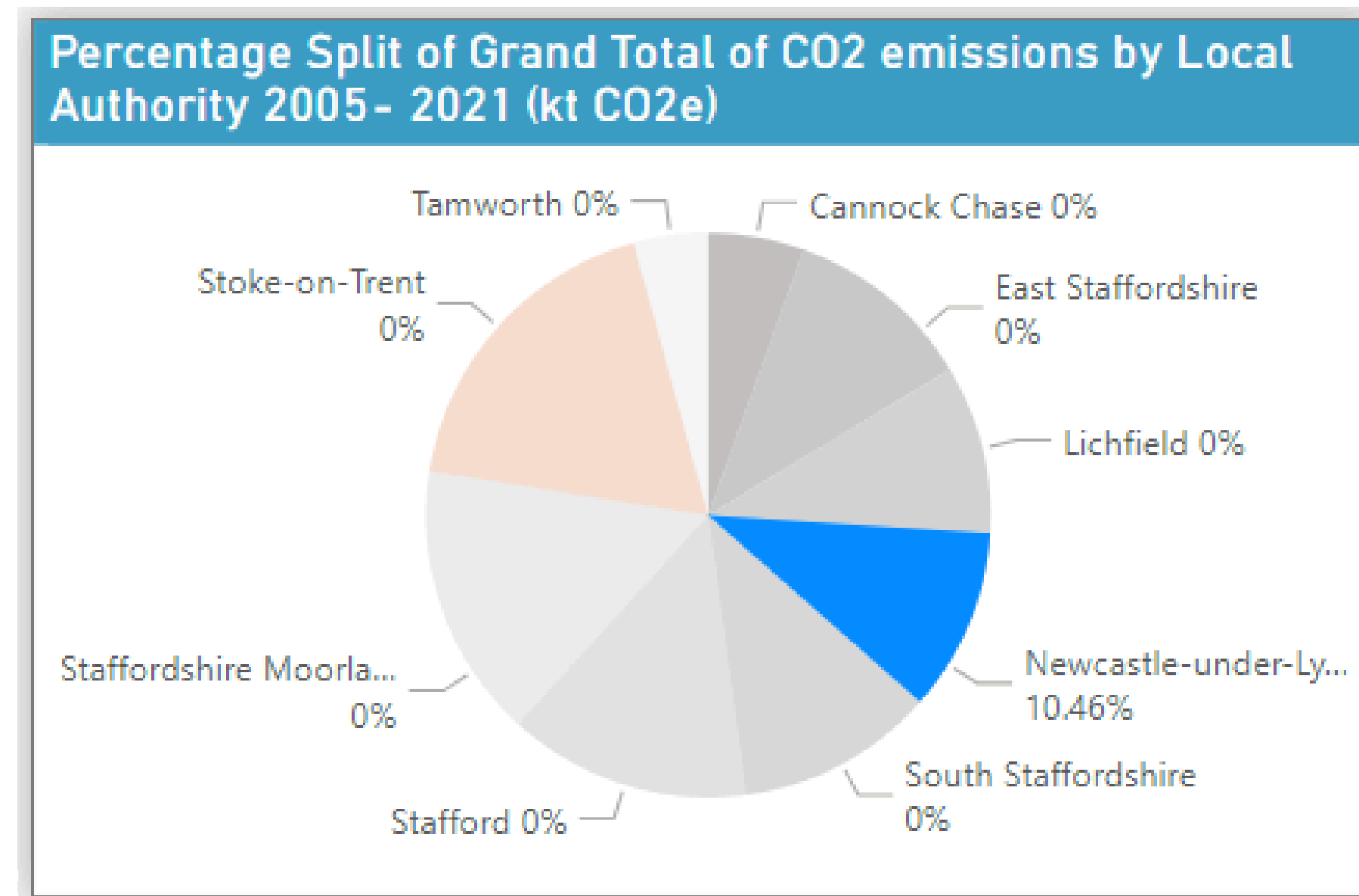
Since 2009 the Council has decreased our carbon footprint by around 50% from 4,136 tons of CO₂e to around 2,011 tons of CO₂e. This is due to electrification of some vehicles and the increased energy efficiency of new and redeveloped buildings in the Council's operations. Most of the Council's energy use comes from gas for buildings and fuel for the fleet, as shown this contributes a vast amount to our current annual carbon footprint. By reducing our use of fossil fuels the Council will be able to reduce the emissions it releases for the benefit of the environment and society. Additionally the Council has made great strides in the promotion of the local natural environment and biodiversity through a multitude of projects which will be discussed later in this strategy. The data provided is all internally generated and calculated within the Council.



Newcastle Borough's Baseline

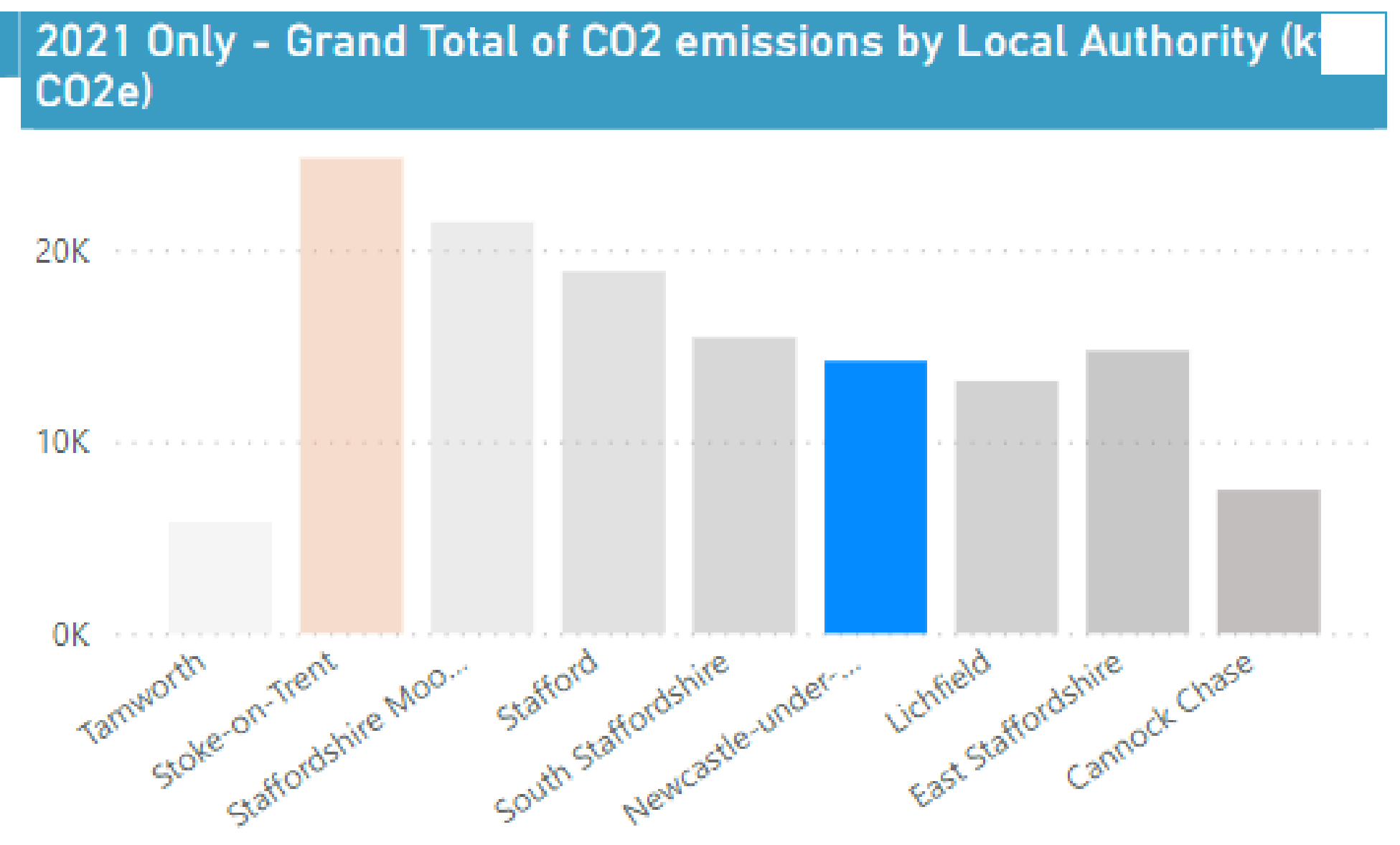
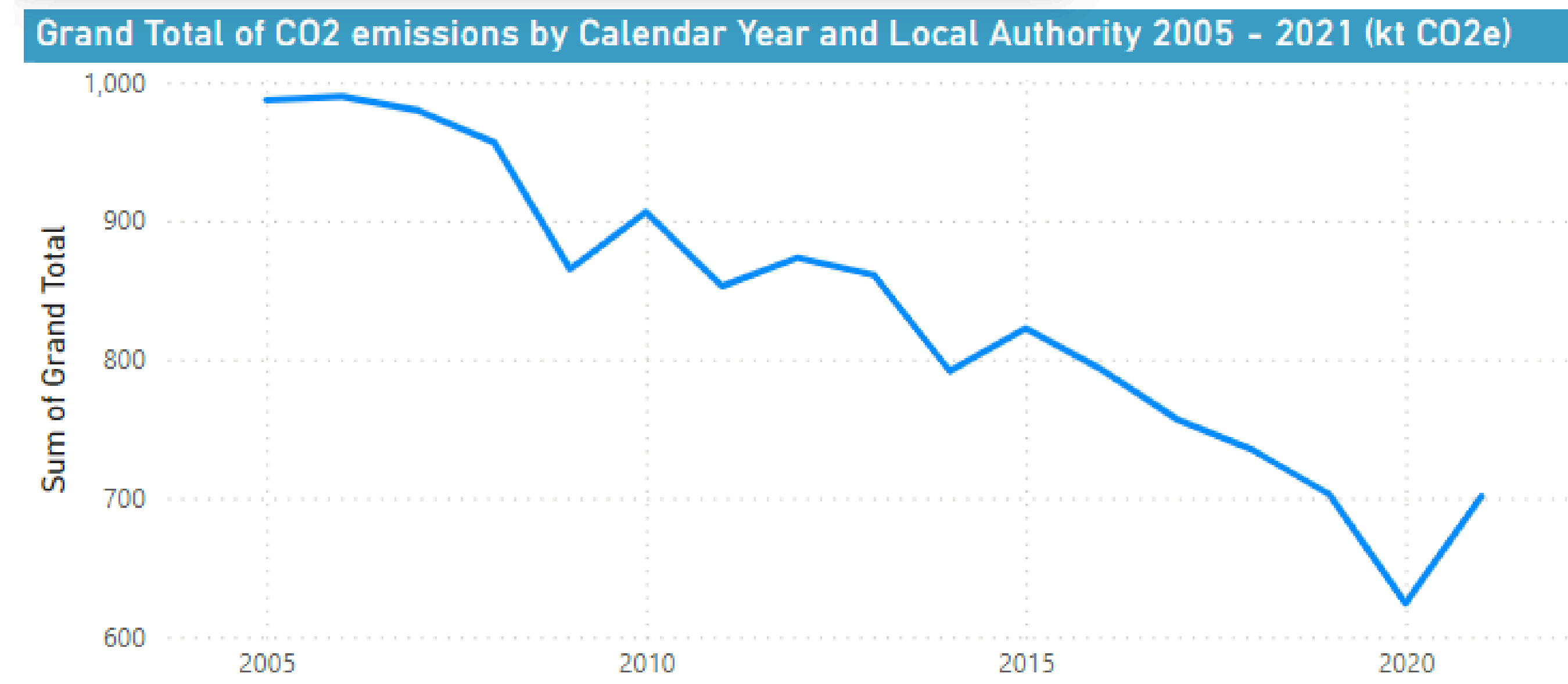
Compared to other local authorities in Staffordshire, Newcastle-under-Lyme borough is doing well in reducing its own emissions and makes up just 10.46% of all emissions in Staffordshire.

In 2021 the Borough contributed a total of 701.38 kt CO₂e to the atmosphere, around 300 kt CO₂e less than 2005 emissions. This emissions count continues to decrease every year except after the pandemic when operations began again. To reduce emissions and decarbonise our activities in the Borough we must collaboratively work together to electrify and make more efficient houses, businesses and transport as well as promote the local environment which can sequester carbon.



Grand Total of CO ₂	2005	2013	2014	2015	2016	2017	2018	2019	2020	2021
Tamworth	.27	366.34	329.95	316.09	291.32	273.26	272.92	250.30	221.55	239.89
Stoke-on-Trent	.13	1,467.55	1,504.04	1,452.40	1,400.63	1,153.66	1,119.33	1,050.46	932.28	1,023.14
Staffordshire Moorlands	.65	1,273.91	1,259.23	1,240.00	1,213.40	1,119.58	1,186.66	1,106.06	1,006.88	1,069.55
Stafford	.95	1,177.28	1,097.97	1,081.97	1,058.19	999.55	979.19	929.08	785.66	868.80
South Staffordshire	.58	925.90	881.34	855.86	855.00	874.89	843.18	820.47	735.17	816.94
Newcastle-under-Lyme	.44	860.83	791.75	822.40	792.68	756.49	734.35	702.67	624.00	701.38
Lichfield	.70	802.47	751.99	740.17	723.01	711.82	694.65	672.91	572.87	643.63
East Staffordshire	.44	913.24	829.20	794.72	768.54	746.38	737.27	679.59	602.64	655.99
Cannock Chase	.56	466.32	420.68	404.53	385.56	377.94	366.75	340.42	308.90	323.78

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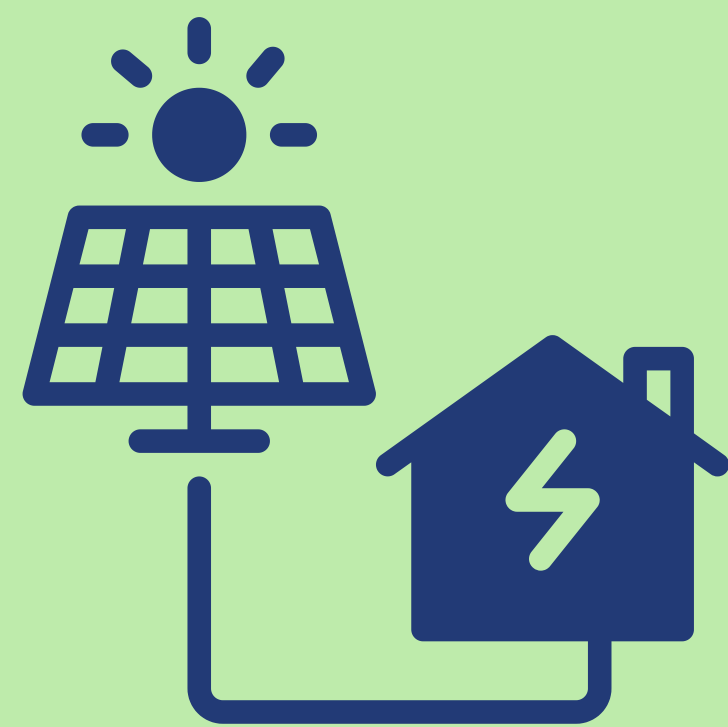


Action Themes

This plan will cover 4 specific themes to ensure that all different sectors of the borough are developed in a more sustainable way. Through focusing on 4 key themes the Council can ensure a healthy, clean and biodiverse borough for residents, businesses and visitors by 2050. These action themes are:

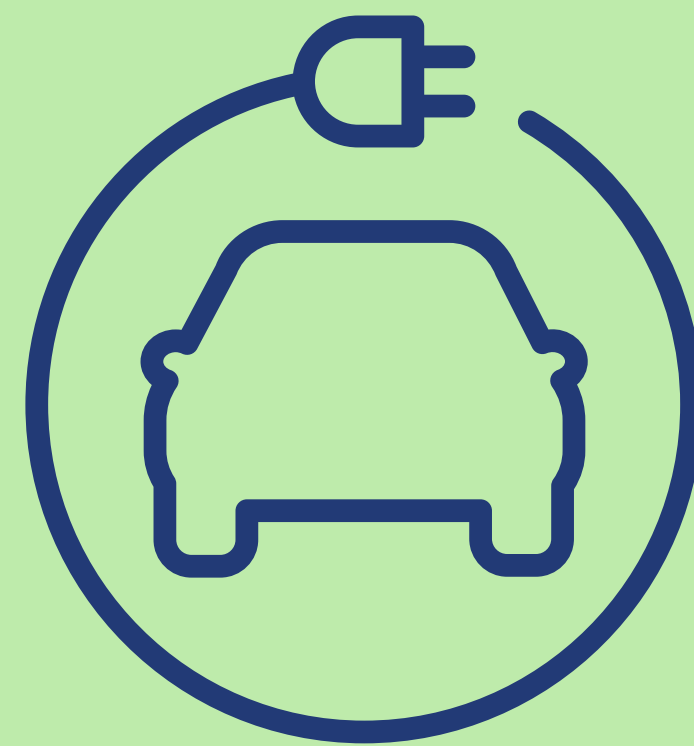
Built Environment & Energy

The Built Environment is a range of different infrastructure that we use on a daily basis such as our homes, businesses, roads, etc. All these consume energy, which a significant amount still comes from fossil fuels. To develop a more sustainable built environment and energy system we must focus on decarbonising our energy consumers and producers. Any development in this sector must be from a fabric (insulation) first approach.



Travel & Transport

We use different kinds of travel and transport every day from travelling by foot to travelling short and long distances by car, bus, train and plane. Transport and travel has one of the largest impacts on the planet so by converting vehicles to more sustainable energies like clean electric or green hydrogen we can stop the production of harmful greenhouse gases from the sector. Even better we can use more public and active travel.



Natural Environment & Sequestration

The natural environment balances our planet and allows for a stable climate and environment for us to live in. Secondly our natural environment is very efficient at sequestering and storing greenhouse gases like carbon. The Council and borough have a responsibility to promote the local environment to increase biodiversity both for the recovery of local species and habitats as well as the removal of carbon from our atmosphere for a cleaner borough for all.



Engagement & Behaviour Change

Most importantly is the collaboration between the Council and the borough through engagement and changing our behaviours to create a more sustainable future for everyone. To have any success in these core themes we must ensure all voices are involved in this process and that we work collaboratively for more sustainable infrastructure, energy, transport and environments.



Governance

The governance and accountability of this strategy and plan will be dependent on the sustainable environment working groups that feed into and form the plan as well as a bi-annual review of the plan by Health, Wellbeing & Environment Scrutiny Committee and an annual review by Cabinet. Each service will have a sustainable environment working group to drive forward the actions in the delivery plan to ensure different services are responsible for the transition towards a more sustainable future in the borough. Upon review, the strategy and plan will be updated with new information, action progress and other additions to ensure it is a live document and always relevant.

In total there are 8 working groups, each focused on different services in the Council. These include:

- Commercial Delivery
- Regulatory Services
- Neighbourhood Delivery
- IT & Digital
- Sustainable Environment
- Legal & Governance
- Strategy, People & Performance
- Planning

These working groups will identify relevant actions from the main delivery and service plan for the working groups to progress and achieve in collaboration with relevant service leads and the Sustainable Environment Services. Once done these will be reported, with progress being updated in the delivery plan during the next occurring bi-annual review. Working groups will meet monthly for every different service. Service leads will also have their own quarterly working group together as well to ensure good communication between different services and the implementation of actions by their deadline. Each service has their own focused delivery plan in the documentation.



Upholding a Live Strategy

To ensure this Strategy and Delivery Plan continues to stay relevant till 2050 it will be constantly updated and reviewed after being adopted by Cabinet. This includes updates to different actions as well as the addition of actions where the need is identified. This allows for an accountable and impactful document that can lead the Council and borough towards a more sustainable future.

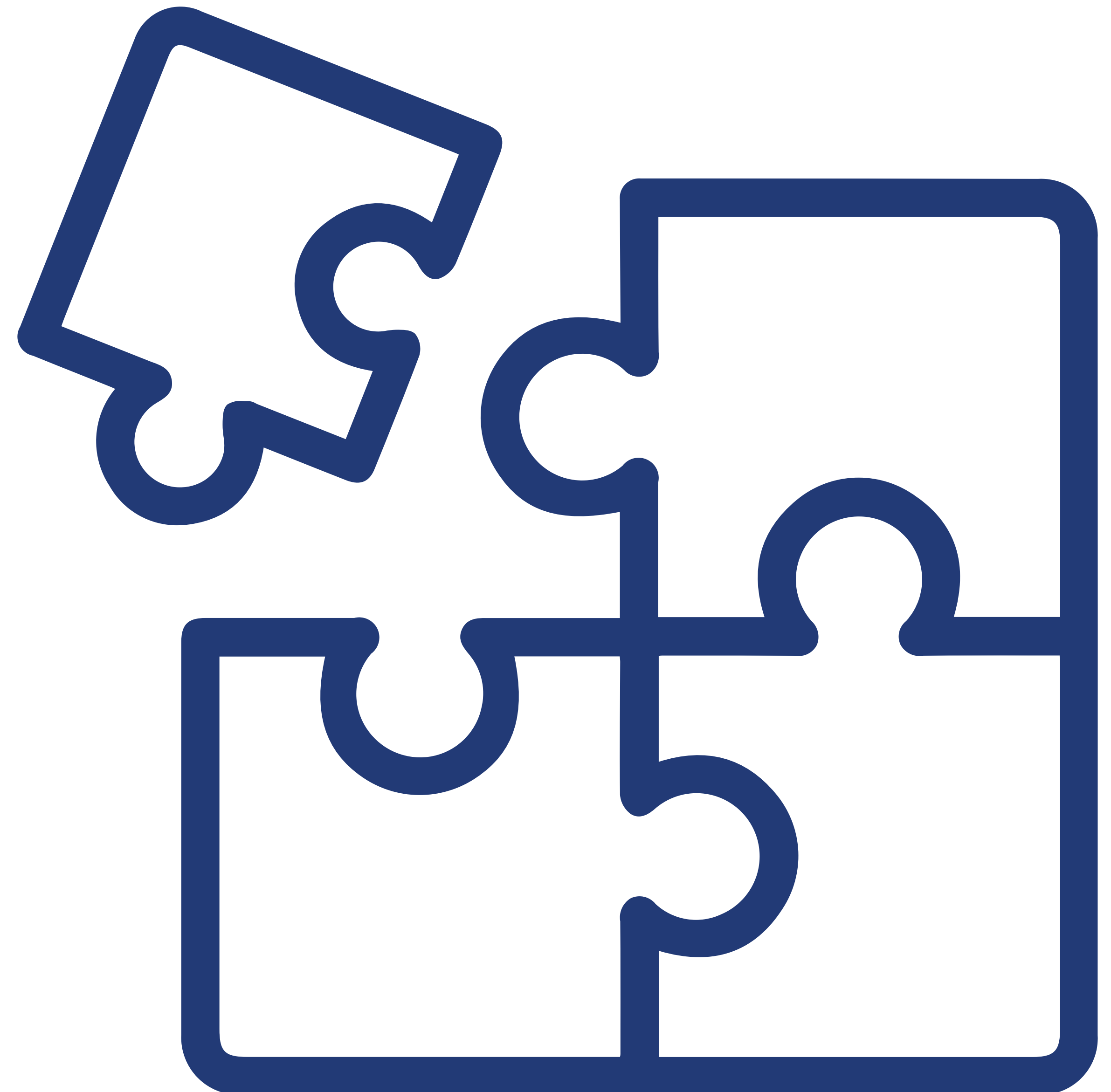
Just like a puzzle this strategy will have pieces continually added to it after publication to ensure its relevance and impactfulness. Below is a list of identified reasons why the Council may edit this strategy and delivery plan:

To update current actions with sub actions, new status/completion and leads for example.

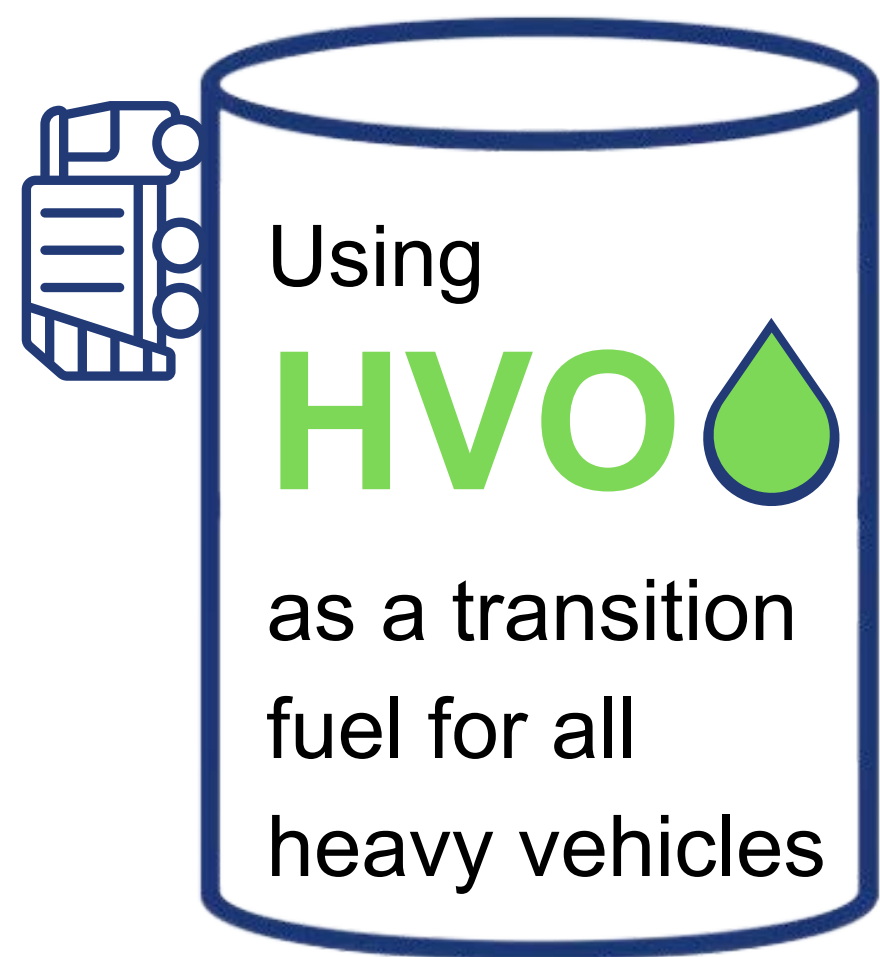
To add new action to different sections of the delivery plan to keep relevance which may be brought up by Council staff or community members.

To update the strategy and delivery plan where information has changed such as different scientific advancements or current photos.

This way the Council's plans for a sustainable future are always relevant and updated for the public and will serve as a key tool in future development. Actions in this plan sit within each different of the 4 action themes. Additionally a Council service focused delivery plan will be adopted and actions from a network of service focused meetings on sustainability called the Sustainable Environment Workings Groups will have their own set of actions linked with the service plan. **The Strategy and Plan will be bi-annually reviewed and adopted by Scrutiny Committee and annually reviewed and adopted by Cabinet to ensure it continues to develop until 2050.**



Some of our achievements...



Using **HVO** as a transition fuel for all heavy vehicles



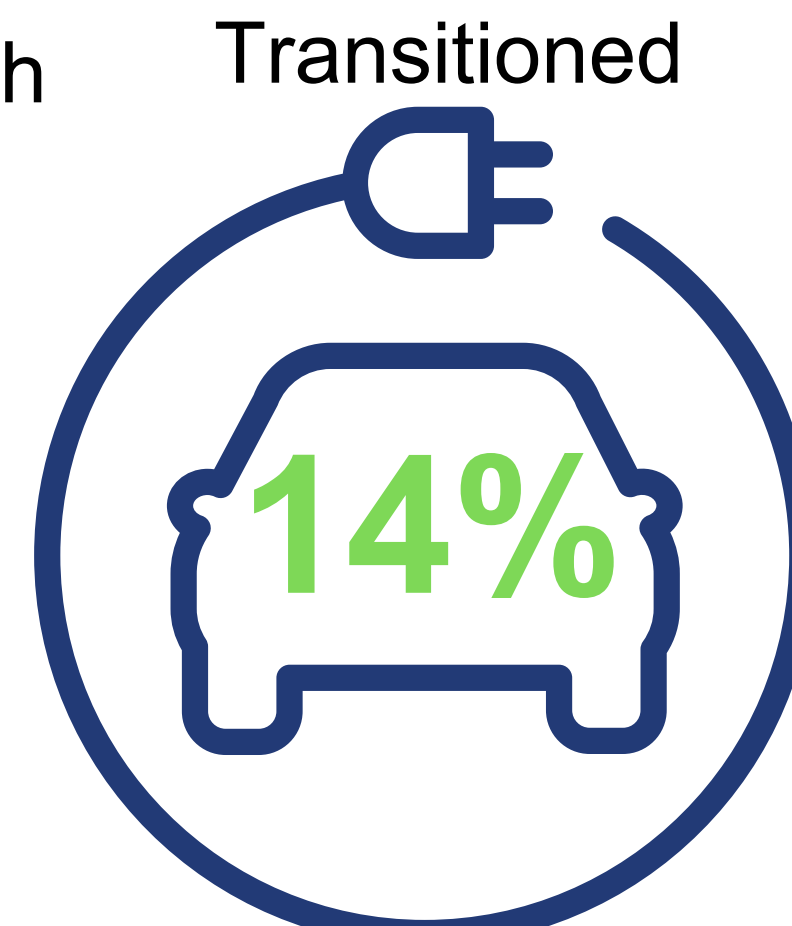
Provided **sustainability training** for all Council staff



Encouraging **meadows** in the borough with the Grassland Management Strategy

10% BNG

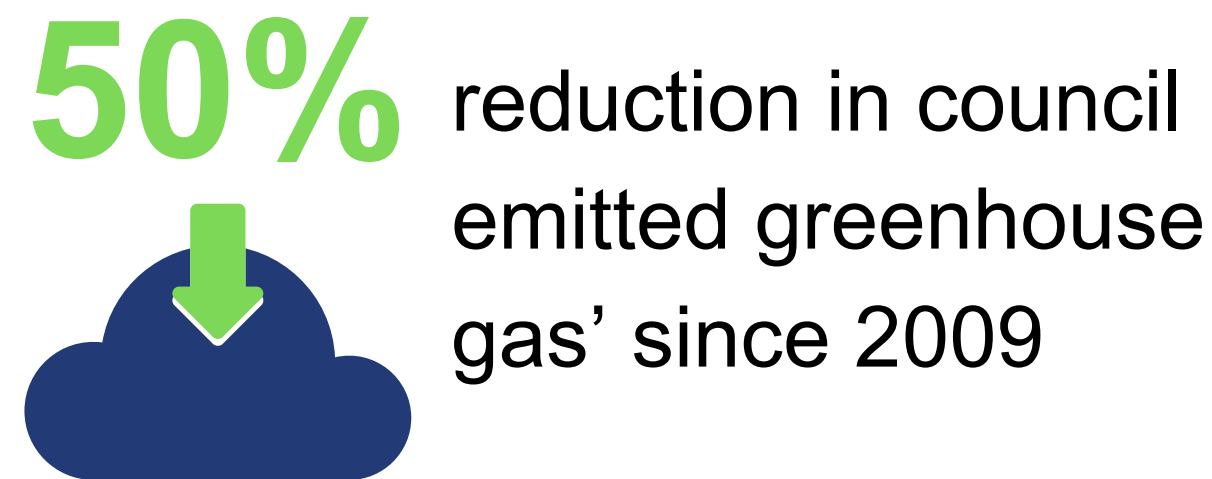
has been included in the Local plan as a requirement for all new developments

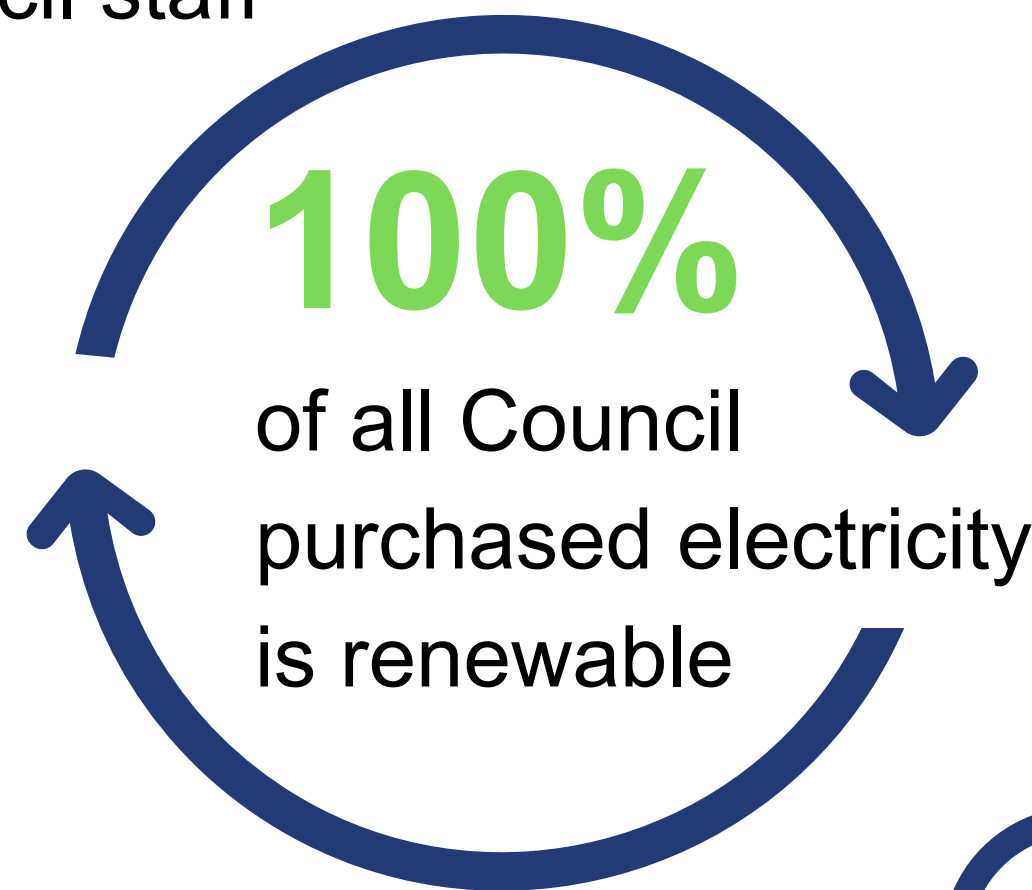
Transitioned **14%** of all light vehicles to electric



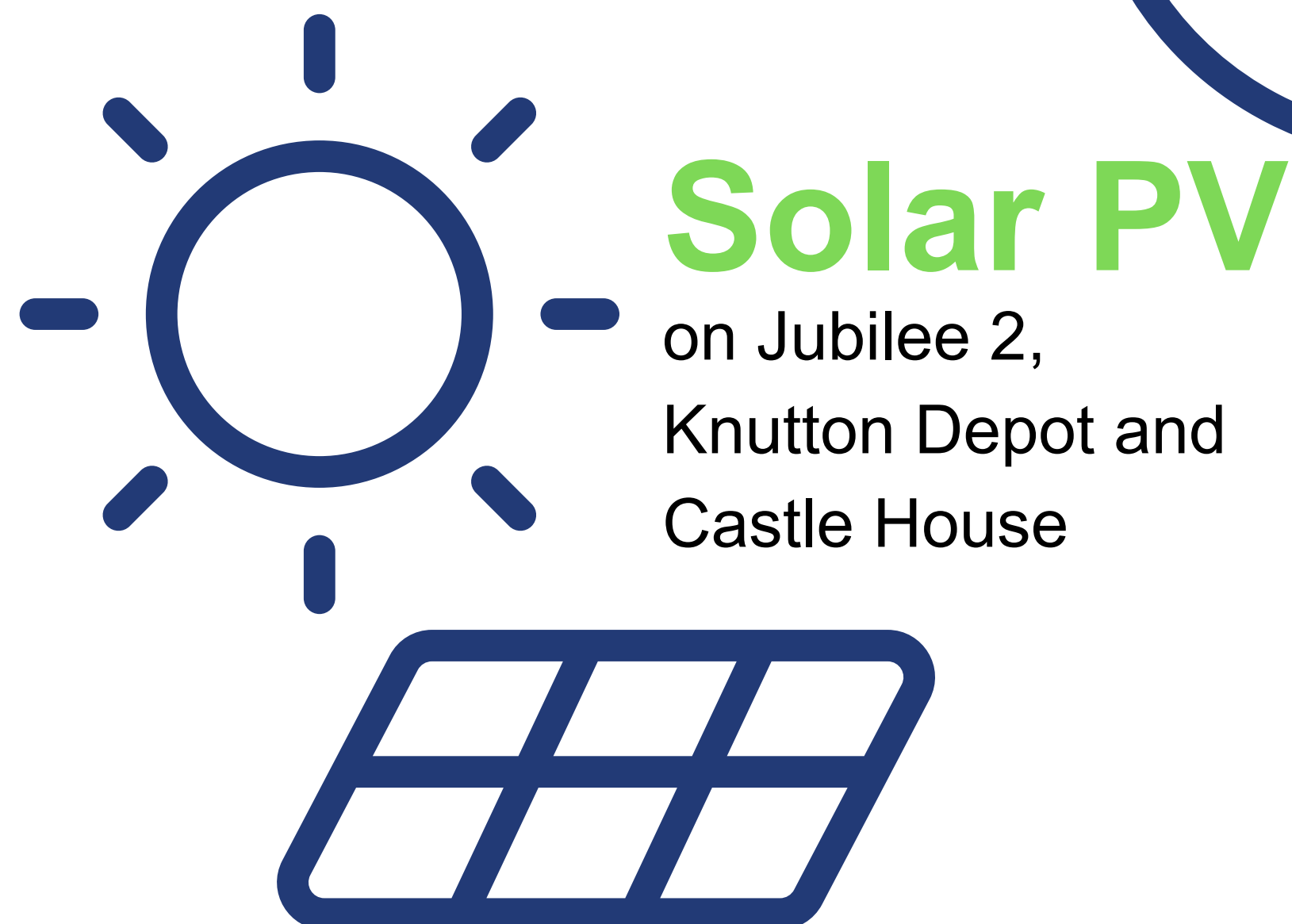
36 houses have been decarbonised with external funding



50% reduction in council emitted greenhouse gas' since 2009



100% of all Council purchased electricity is renewable



Solar PV on Jubilee 2, Knutton Depot and Castle House



Planted over **15,000** trees in 21 green spaces as part of the Urban Tree Planting Strategy



Transitioned all streetlighting into **LEDs** and currently transitioning Council owned buildings

Net Zero Council by 2030

Introduction

One of the Council's most ambitious targets is the development of a Net Zero Council, including buildings and fleet by 2030. To underpin this work and create a baseline for actionable developments, the Council had delivered a Net Zero Roadmap through multiple external consultancies. The findings and data from the Roadmap will be outlined in this section.

To become Net Zero is to reduce greenhouse gas emissions to a net zero amount, which means the emission of little to no greenhouse gases by operations. The Council needs to decarbonise all of its operations from electrifying the fleet, electrifying buildings and making them more energy efficient and installing renewable energies like solar. These are all within scope 1 of the Council's emissions. Scope 2 is ensuring the energy sourced for buildings and the fleet is clean, and for scope 3 the Council will need to ensure that all staff travel and all production, distribution and disposal of resources we order in, is low or zero emissions. The Council's scope 3 emissions will be mapped for action, mostly through an independent service focused plan.

What happens if the Council cannot reach exactly net zero greenhouse gas emissions? Well one way to ensure that we can reduce the remaining emissions is through the sequestration and storage of carbon. This is done through promoting the natural environment which can take carbon out the atmosphere and store it. This will be outlined in more detail in section 7 Natural Environment.

The drive to create this strategy and delivery plan was adopted through Cabinet in October of 2023 which also included more in depth information regarding the Council's estate and fleet energy use and decarbonisation. Please go to the Review of Environment Strategy & Roadmap to Net Zero Cabinet Report⁸ in the Glossary at the end of this document to view this data in more depth.

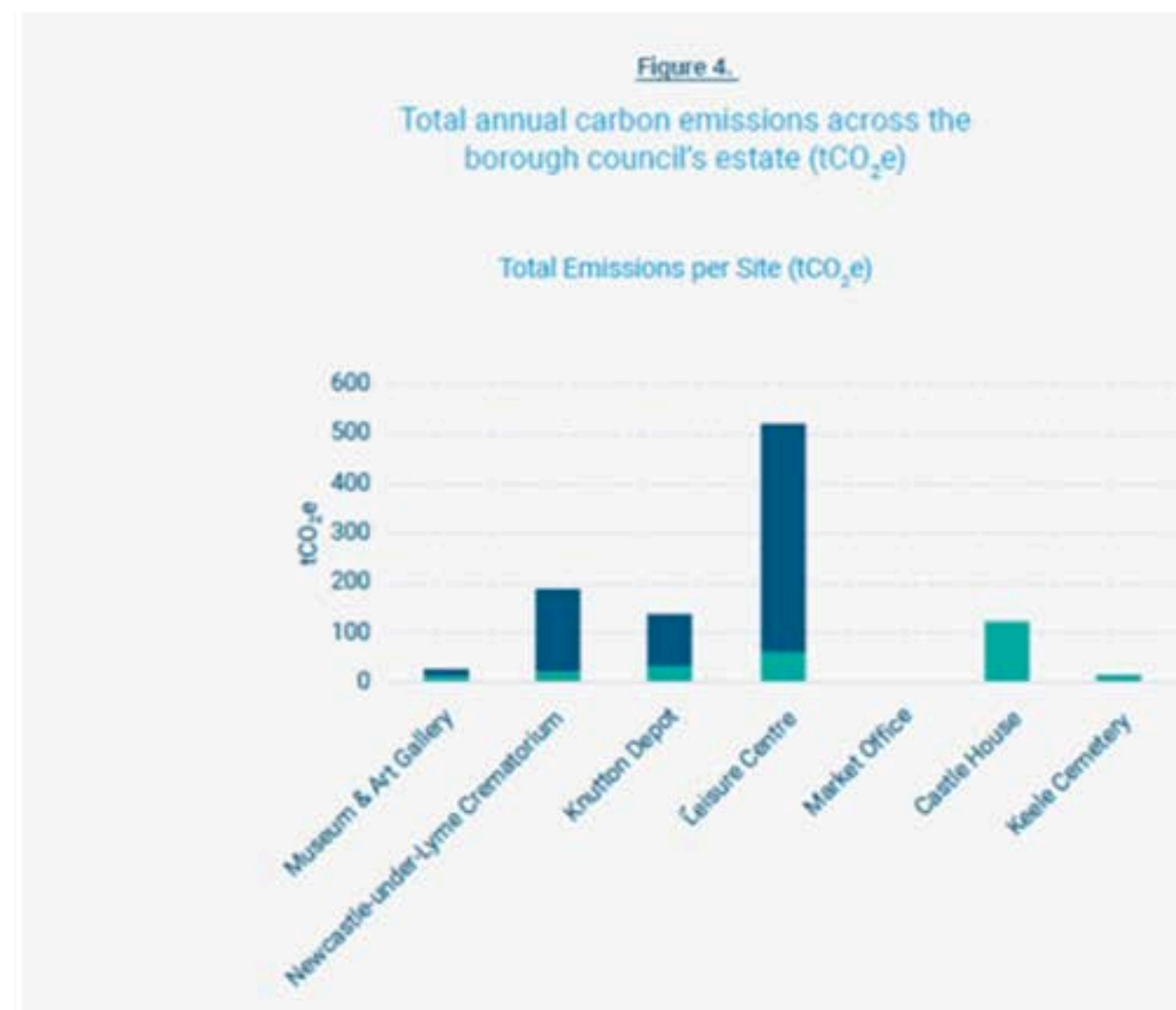
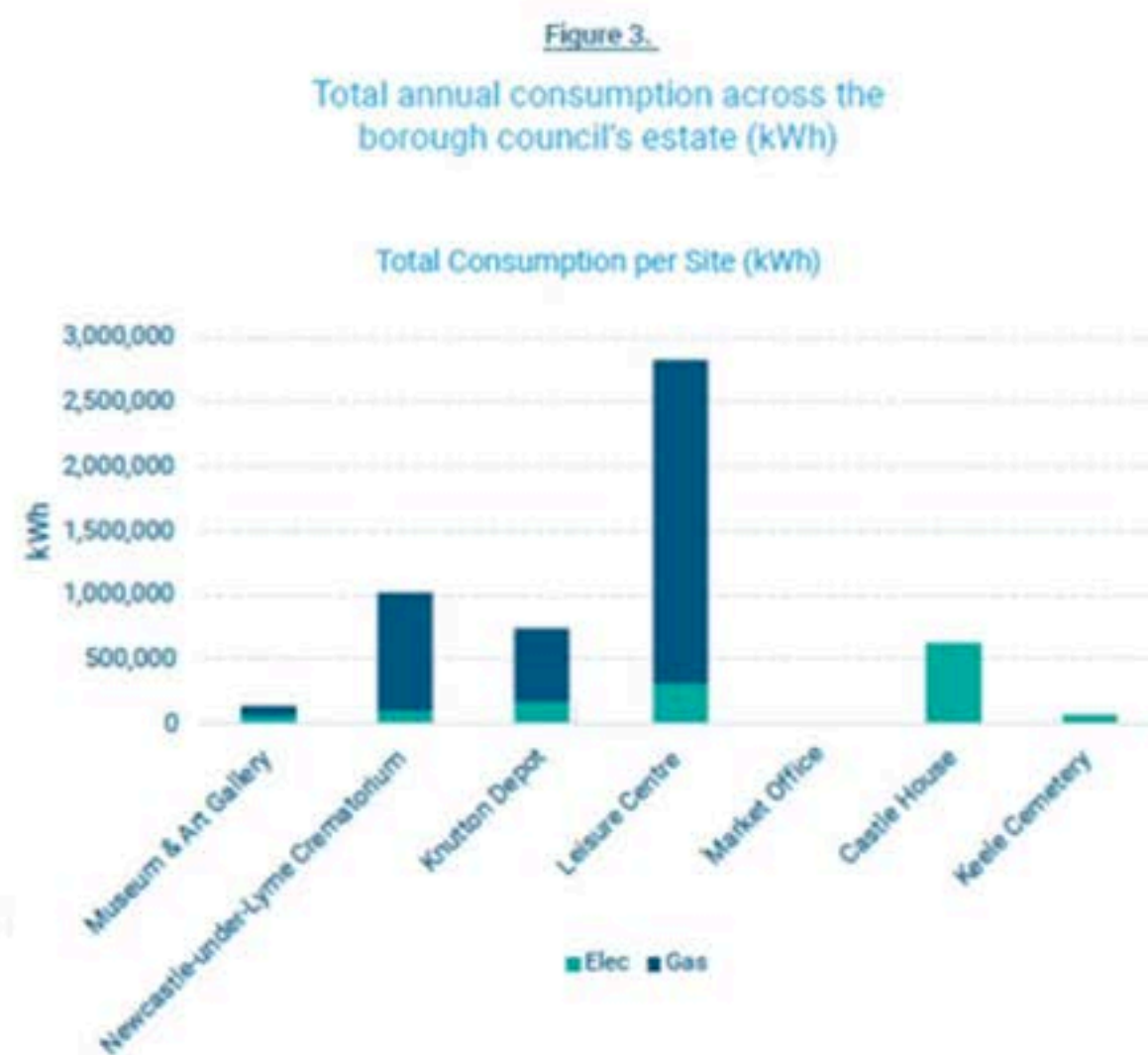
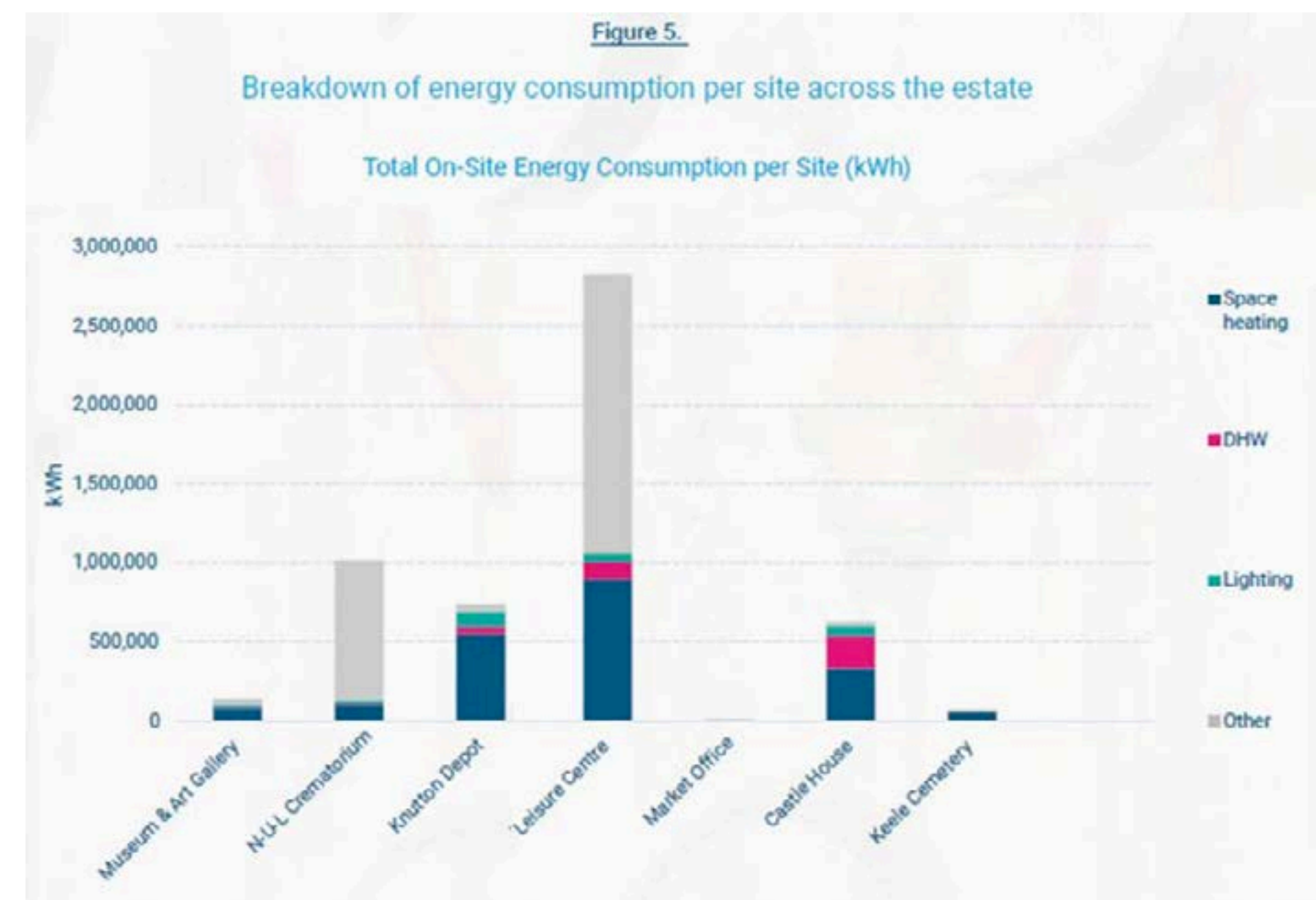


Council Built Environment Baseline

The Council’s ambition for a net zero organisation by 2030 must include its buildings as they contribute to a significant amount of emissions that come from the operations of the Council. The data from Faithful and Gould presented in this report outlines the actions needed from Newcastle-under-Lyme Borough Council to decarbonise its entire stock of buildings.

In total, there were 7 sites that were examined as part of the consultancy: Brampton Museum, Bradwell Crematorium, Knutton Depot, J2 Leisure Centre, the Market Office, Castle House and Keele Cemetery. The technology, fabrics, energy efficiency, energy use and emissions of each site were evaluated by external consultants and summarised in a report.

As seen in Figure 2, the Council, to achieve our 2030 goal in the most effective way must first upgrade site insulation and lighting to LEDs, then transition heating systems like boilers to heat pumps, then install renewable energy on or off site for the Council’s sites and finally offset any remaining emissions through offsite developments and green infrastructure. As seen in Figure 5 the largest consumers of energy are Jubilee 2 Leisure Centre (Pools) and Bradwell Crematorium (Furnaces). As the largest consumers they also emit the most carbon as they are majority powered by gas instead of renewable electricity.



Council Built Environment Baseline

Through introducing net zero buildings the Council can greatly reduce our greenhouse gas emissions through the increase in energy efficiency and reduction in fossil fuel use as shown in Figure 11. For gas usage the Council used 4,073,051 kWh in the 2022-2023 economic year and estimates that with the introduction of more efficient and renewable technology a reduction to about 666,236 kWh for gas usage by 2030. For electricity the Council used 1,364,278 kWh during the year 2022-2023 and estimates an increase of usage to 2,282,476 kWh by 2030. Even though there is a perceived increase in electricity usage due to an increase in electrified technologies the overall energy being used and emissions generated reduces due to the elimination of almost all gas (fossil fuelled) powered systems and the installation of more energy efficient and renewable technologies. In total the current energy consumption of the Council’s buildings is reduced by 2,488,617 kWh, from 5,437,329 kWh to 2,948,712 kWh which will continue to reduce as technology develops and becomes more efficient. Figure 17 shows the individual and total costs of each technology at each site as well as the carbon savings by 2030 after installation. The significant cost of the installations to become net zero will be fabric upgrades and heating and DHW installations which will cost more than three-quarters of the total needed to decarbonise these sites. The most costly however also most carbon saving and impactful developments will be the decarbonisation of the Leisure Centre and Knutton Lane Depot. The sites studied in this consultation will be used as case studies to decarbonise the rest of the Council’s built environment.

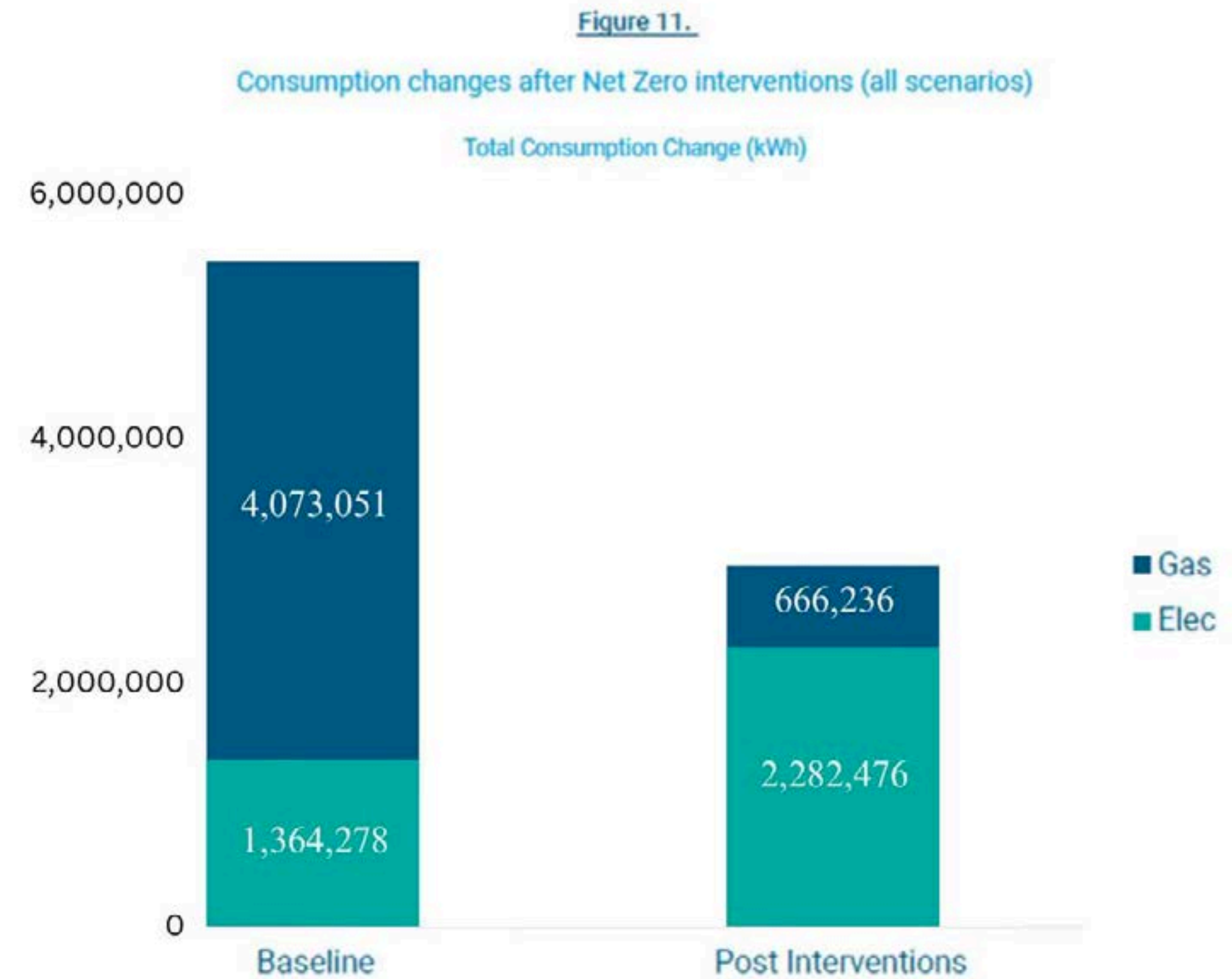


Table 17. Site and Cost Breakdown of Recommendations

Site Name	Behaviour Change	Fabric Upgrades	LED Install	Heating & DHW Install	PV (Solar) Install	BMS/Controls Upgrade	Cooling Upgrade	Vent Upgrade	Total Cost (£)	Total Carbon Saved (tCO _{2e} 2024 factors)
Brampton Museum	£178	£395,518	£17,056	£143,324	£0	£63,688	£0	£3,750	£622,514	14
Bradwell Crematorium	£626	£283,633	£32,755	£211,564	£36,700	£52,632	£0	£7,500	£625,411	31
Knutton Lane Depot	£632	£1,420,936	£44,664	£525,920	£42,000	£129,410	£0	£3,000	£2,166,561	96
Jubilee 2 Leisure Centre	£1,786	£0	£119,392	£3,438,300	£0	£106,600	£170,000	£10,000	£3,846,078	280
Market Office	£10	£1,335	£971	£4,853	£2,310	£607	£0	£750	£10,835	1
Castle House	£1,465	£0	£5,952	£0	£49,600	£0	£0	£0	£57,017	14
Keele Cemetery	£172	£0	£13,720	£0	£33,400	£20,580	£0	£0	£67,872	9
Total	£4,869	£2,100,420	£234,510	£4,323,961	£164,010	£373,517	£170,000	£25,000	£7,396,287	445 tCO_{2e}


2030 Built Environment Delivery Plan

To ensure the Council are able to decarbonise their own built environment, the Council will have set out a delivery plan for 2030 with actions assigned by a certain deadline, to different staff and services and finally with a summary of the action and its cost. This will allow an accountable process for the decarbonisation of the Council’s built environment. See the relevant actions below for the Council to achieve a net zero built environment by 2030:

Scope 1

Scope 2

Scope 3

<p>To assign £7,396,287 of Council capital to the decarbonisation of flagship sites.</p> <p>£7,396,287 (£££)</p> <p>February 2024</p> 	<p>To deliver the decarbonisation of all Council owned flagship sites which includes:</p> <ul style="list-style-type: none"> • Brampton Museum & Park • Bradwell Crematorium • Knutton Lane Depot • Jubilee 2 leisure Centre • Newcastle Market Office • Castle House • Keele Cemetery <p>£7,396,287 (£££)</p> <p>December 2030</p>
<p>Assign appropriate capital for remaining Council owned sites.</p> <p>£££££</p> <p>January 2026</p>	<p>Consult on the decarbonisation of remaining Council owned sites in the borough according to the flagship sites.</p> <p>£££</p> <p>December 2030</p>

To power the uncovered demand of the Council’s built environment on 100% clean/renewable electricity

££

August 2024

To ensure all contractors and resources used in decarbonising the Council’s built environment are net zero and ethical or have plans in place to be so by 2030.

£££

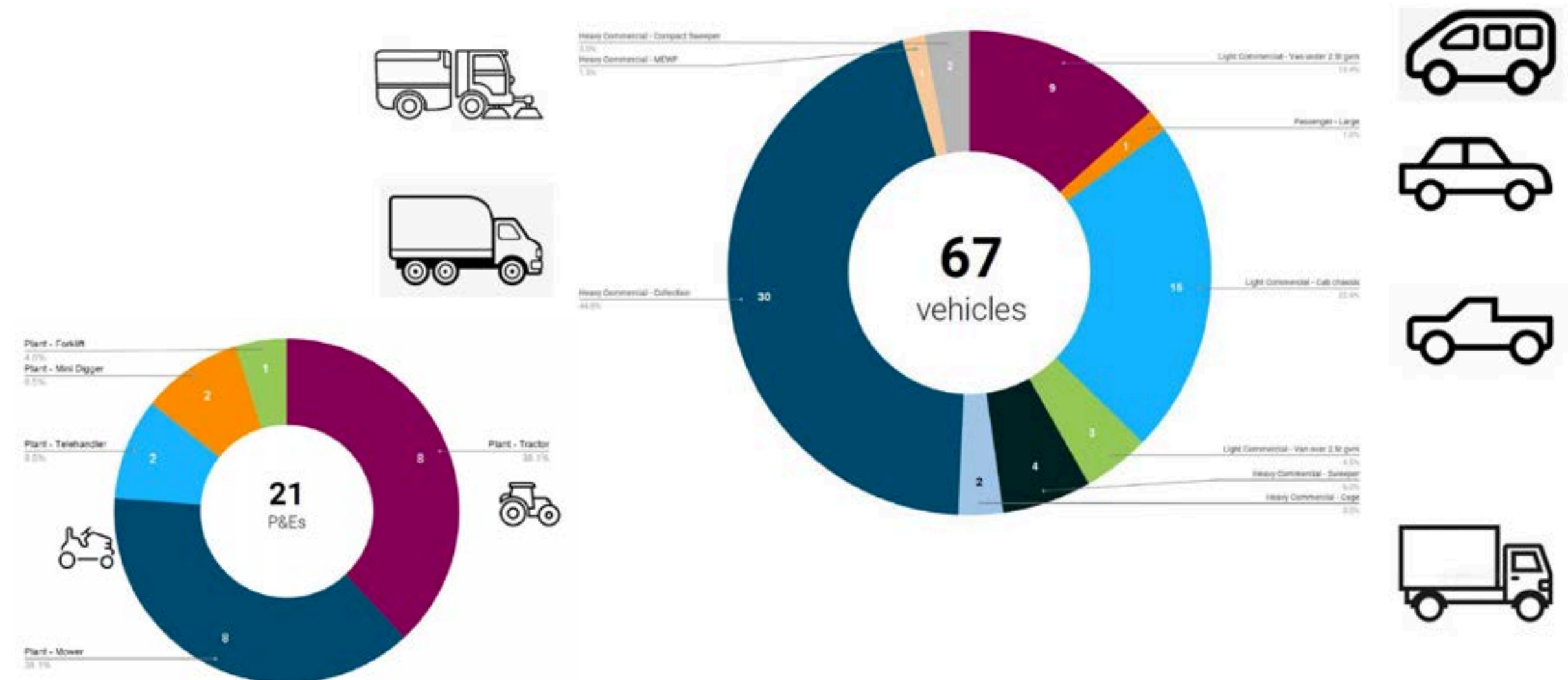
April 2026

By decarbonising the Council by 2030 the organisation can reduce its carbon emissions and reduce costs of energy significantly. The actions on this page reflect what needs to be achieved and by when to be able to create these significant savings. To ensure accountability and the free flow of this document there is an additional SESDP Actions Policy Document located on the Council’s website which details all actions in more depth and has updates on each action, such as if they have been achieved. To achieve these goals the Council have set aside £7.4M in capital until 2030 for flagship buildings in the estate.

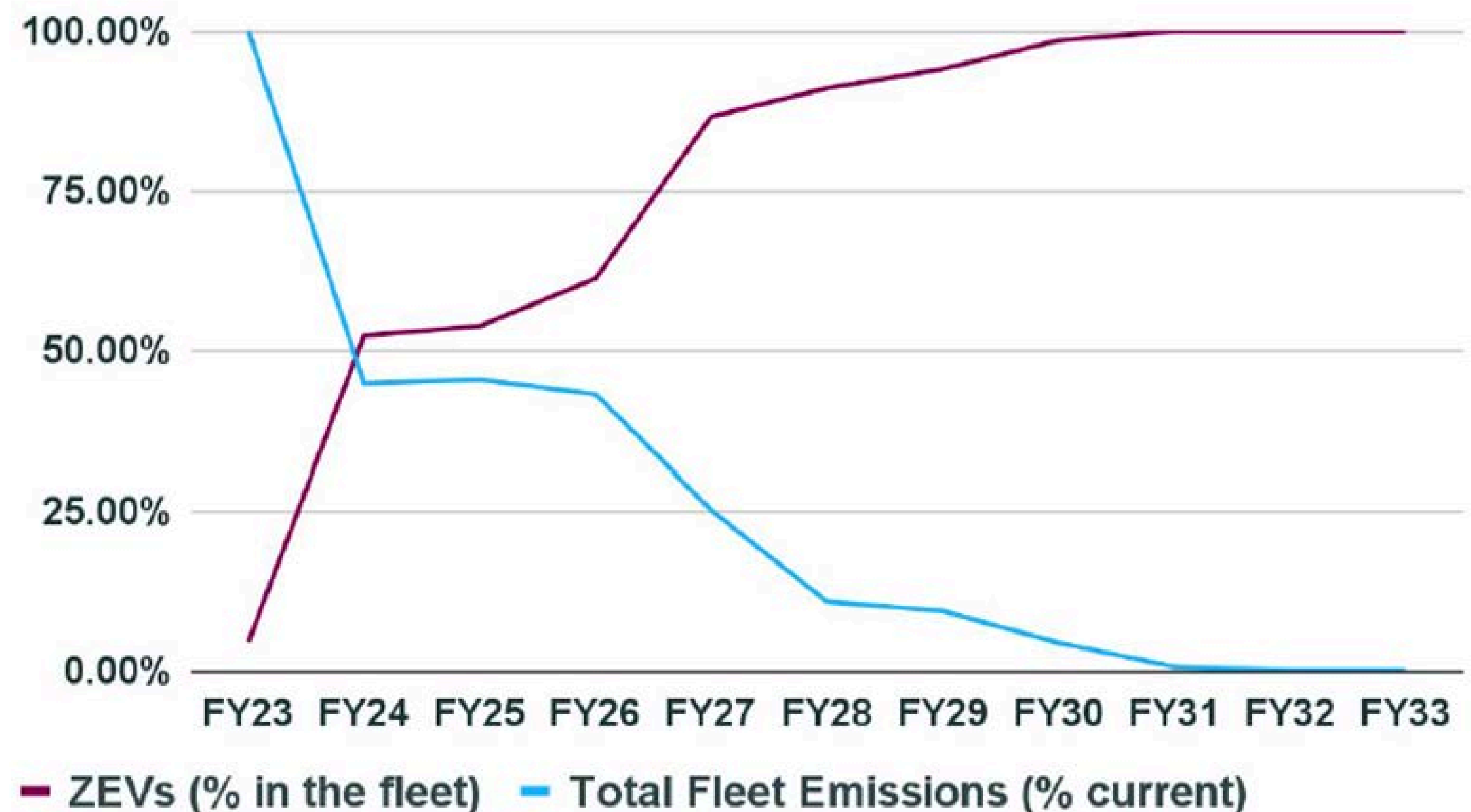
Council Fleet Baseline

Additionally the Council must decarbonise its own fleet to become a net zero organisation by 2030. This entails the electrification of all light, heavy vehicles and assets. This will ensure the Council's fleet is powered from clean energy sources. Hydrogen and other clean energies may be used where electrification is not a viable option. Everergi have provided the fleet decarbonisation data present.

The Council has 67 vehicles and 21 assets in their fleet. The 67 vehicles consist of 39 heavy vehicles and 28 light vehicles. Most of the Council's emissions from the fleet come from our Heavy Commercial Vehicles (84% of total fleet emissions), especially the vehicles used to collect recycling and waste from the Borough (71% of total fleet emissions). For light vehicles cab chassis are the most impactful in emissions. This gives us an idea about what should be prioritised to be decarbonised or as the report mentions seek transition fuels until they are decarbonised, for example using Hydrotreated Vegetable Oil (HVO) instead of fossil fuels. As seen in the leadership transition graph as the Council increases the transition of fossil fuelled vehicles to Zero Emission Vehicles (ZEVs) the total amount of emissions from the fleet will drastically decrease as they will release no emissions and be powered by clean energy from the Council's energy supply and external energy supply.



LEADERSHIP TRANSITION



Carbon emissions combined

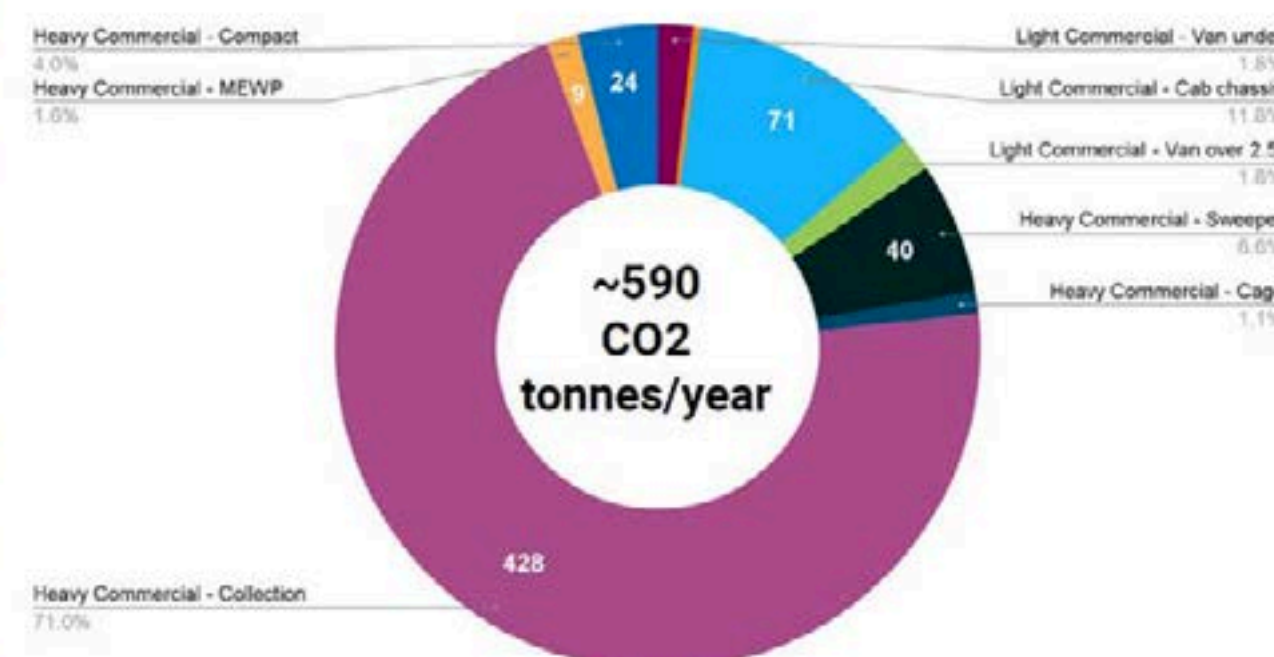
Collection freighters, Sweepers and Cab Chassis collectively account for around 89% of the Council's fleet CO₂ emissions.

Collection freighters, Sweepers and Light commercial cab chassis are the largest emitters of CO₂ emissions in the Council's fleet, collectively contributing around 89% of total emissions as seen on the chart. This is due to their predominance in the share of total vehicles and their relatively higher levels of utilisation.

Transitioning these three vehicle types to EVs will therefore be key for the Council to mitigate a large share of the fleet's CO₂ emissions.

Looking at the share between light and heavy vehicles, it is seen that heavy vehicles are contributing to around 84% of total fleet emissions (~496 tonnes out of ~590 tonnes of total fleet CO₂ emissions annually).

It should be noted that 23 heavy vehicles are indicated to use HVO as the main fuel. The carbon emissions of HVO can be up to 90% lower than diesel.



Council Fleet Baseline

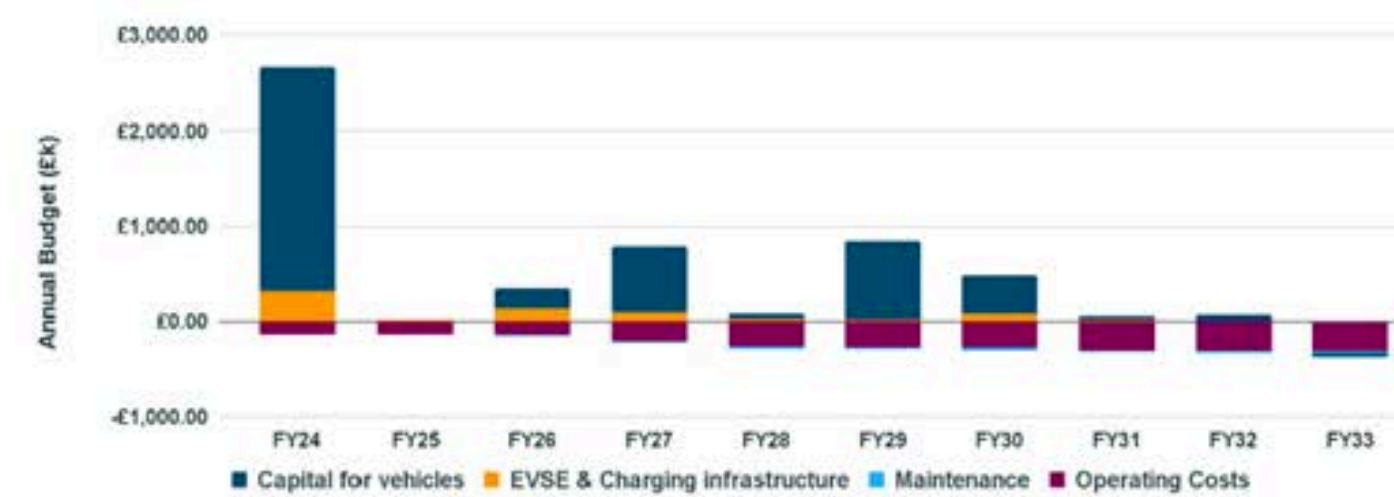
The total cost in a leadership scenario in decarbonising the Council's fleet will cost around £10.76M which includes the operating costs, maintenance, capital expenses and capital expenses. As seen in the figure on this page, most of the charging infrastructure and new ZEVs will be purchased in 2024 where other vehicles like many of the Council's heavy fleet will be purchased in later years before 2030. Most of the infrastructural upgrades will be done over the first couple years of this strategy, however the electrical upgrades to ensure that the clean energy the Council's installed can be freely transmitted throughout different sites to charge vehicles.



Scenario Analysis - Leadership transition FY 24 to FY33

The leadership scenario requires £2.86M extra over the period to FY33. Higher upfront vehicle purchases and the need to deploy infrastructure are only partially offset by operating and maintenance savings during the period to FY33.

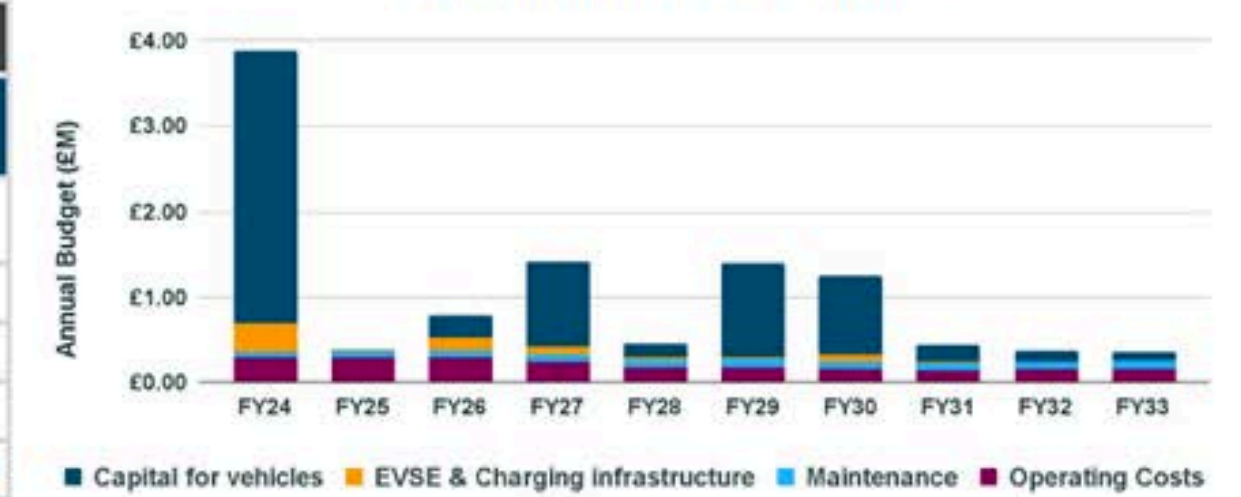
YEAR ON YEAR COST DIFFERENCE COMPARED TO BAU



BUSINESS AS USUAL



LEADERSHIP TRANSITION



Overall financial summary NPV 2023 to 2032			
Capital costs	BAU (£M)	Leadership transition (£M)	Difference
Vehicle operating costs	£4.41	£2.08	£2.34 M savings
Vehicle maintenance	£1.00	£0.84	£0.15 M savings
Vehicle capital expenses	£2.49	£7.11	£4.62 M additional
EVSE & charging capital expenses	£0	£0.73	£0.73 M additional
Total	~£7.90	~£10.76	~£2.86 M additional

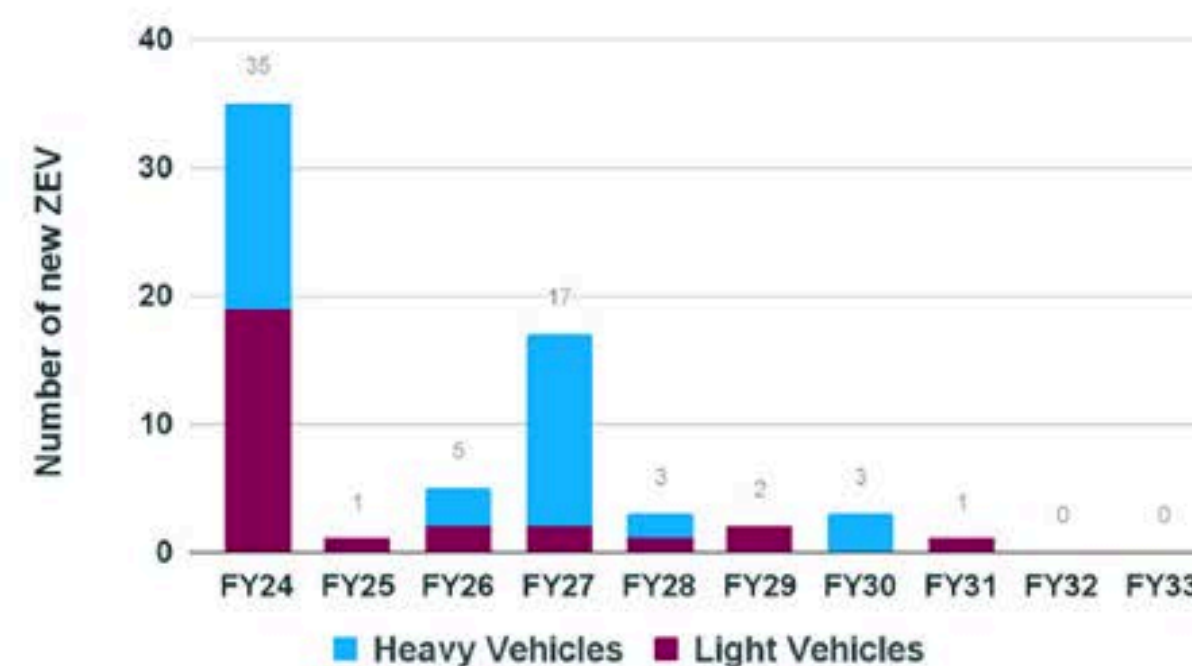
Scenario Analysis - A leadership transition

Under a leadership scenario all of the light and heavy vehicle fleets will transition by 2033 and this will require sites to be ready in 2024. Many more light vehicles transition in this scenario.

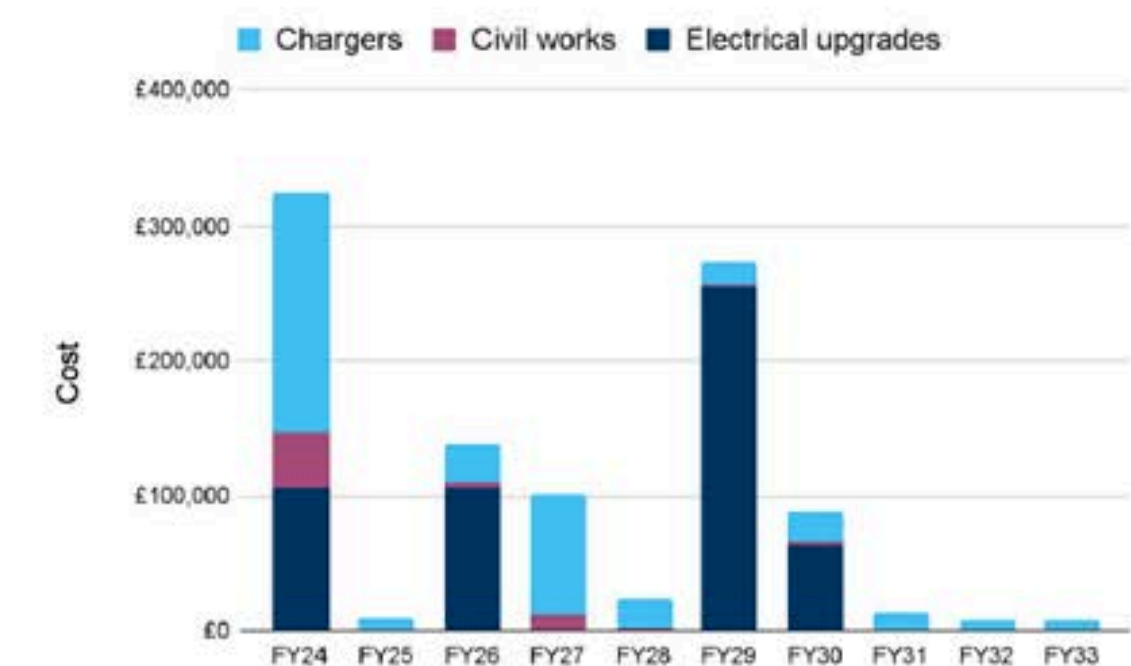
In this scenario EVs are selected based on a superior TCO or forced at the last transition prior to 2030. As in the previous scenario a fitness for purpose check rules out vehicles that can not meet the duty requirements from transitioning.

In this scenario all 67 vehicles (28 light vehicles and 39 heavy vehicles) are electrified before 2033. This scenarios sees many more light vehicles transitioning than in the economic scenario. Many of the early transitions between FY24 and FY27 are light commercial cab chassis. Major infrastructure upgrades at the depot site are required from 2024 to support the increase of EVs in the same year. The spillover to 2033 is due to the replacing period of vehicles, where some vehicles only see their first (suitable) replacement after 2030.

TRANSITION OF FLEET TO ZEV



INFRASTRUCTURE UPGRADES



2030 Fleet Delivery Plan

To ensure the Council are able to decarbonise their own fleet, the Council will have set out a delivery plan for 2030 with actions assigned by a certain deadline, to different staff and services and finally with a summary of the action and it's cost. This will allow an accountable process for the decarbonisation of the Council's fleet. See the relevant actions below for the Council to achieve a net zero fleet by 2030:

Scope 1

To assign £10.76M of Council capital to the decarbonisation of the Council's fleet.

£10.76M (££££)

February 2024



To deliver the decarbonisation of all Council owned vehicles and equipment through the fleet transition plan.

£10.76M (££££)

December 2030

Scope 2

To power the uncovered demand of the Council's fleet on 100% clean/renewable electricity

££

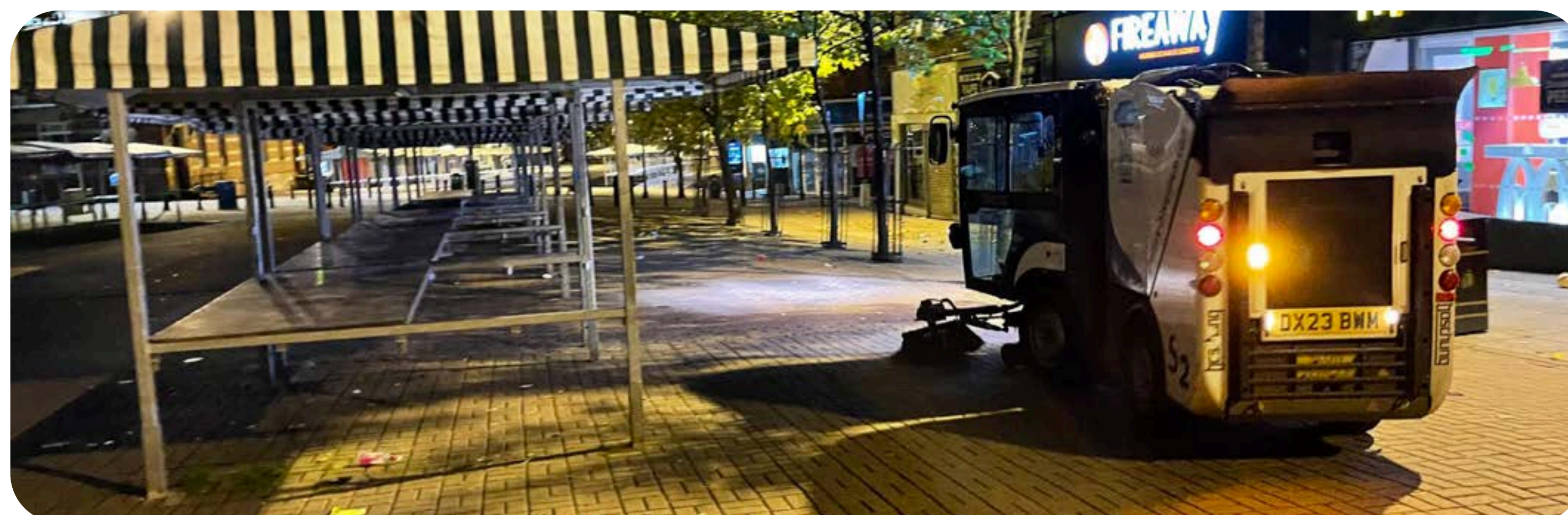
August 2024

Scope 3

To ensure all contractors and resources used in decarbonising the Council's fleet are net zero and ethical or have plans in place to be so by 2030.

£££

April 2026



By decarbonising the Council's fleet by 2030, the organisation can reduce its carbon emissions and reduce costs of energy significantly. The actions on this page reflect what needs to be achieved and by when to be able to create these significant savings. To ensure accountability and the free flow of this document there is an additional SESDP Actions Policy Document located on the Council's website which details all actions in more depth and has updates on each action such as if they have been achieved. To achieve these goals the Council have set aside £10.76M in capital until 2030.

Net Zero Borough by 2050

Introduction

The Council has a duty to facilitate the creation of a net zero borough by 2050. This includes the evolution of our homes, businesses, travel and transport, agriculture, industry, waste and infrastructure to produce and consume renewable energy like solar, as well as develop interventions (insulation, heating, ventilation, cooling, lighting and smart controls) to increase their energy efficiencies. A net zero borough means the decrease in air pollution, decrease in energy costs and increase in social, economic and environmental sustainability.

Not only do we have to ensure all our built environment and transport systems are net zero but also the energy that powers them as a scope 2 emission and the waste, emissions, transport and the production and distribution of products that may come into the borough as scope 3 emissions. The problem may seem vast, however the Council, as well as many other local authorities, have the drive to achieve this goal and will be conducting consultations to inform actions that will be able to begin work towards a sustainable 2050.

What happens if the borough cannot reach exactly net zero greenhouse gas emissions? Well one way to ensure that we can reduce the remaining emissions is through the sequestration and storage of carbon. This is done through promoting the natural environment which can take carbon out the atmosphere and store it. This will be outlined in more detail in section 7 Natural Environment & Sequestration.

As we move closer to 2050, this strategy and plan will continue to develop as the Council and borough work together to create and implement action that will aid in achieving our 2050 net zero ambitions.



Net Zero Borough by 2050 Baseline

Built Environment & Energy

Our Built Environment and Energy are responsible for a significant amount of the emissions from the borough and includes everything from our buildings, travel infrastructure, industry, waste, agriculture and of course the energy we generate.

In the UK our built environment and the energy we use is responsible for around 70% of all Greenhouse Gas Emissions. This is a tremendous amount of emissions with our building and product use being the largest emitter in this category, which means our focus must be on the transition to buildings that are smarter and more energy efficient whilst also ensuring the energy they use is renewable. To achieve net zero it is incredibly important to decarbonise the built environment and energy that we use everyday.



Travel & Transport

Our Travel & Transport are responsible for the highest increase in emissions and emissions intensity. This continues to increase as we continue to burn fossil fuels to travel and can contribute significantly to a range of different issues.

The various vehicles we use to travel around the UK and the borough contribute to more than 25% of the UK's total Greenhouse Gas Emissions. Just through the vehicles that we use to travel we produce a significant amount of air pollution that contributes to the acceleration of climate change. Travel and transport is just as important to decarbonise as well as the fuel used for our vehicles, to ensure the system is completely sustainable.



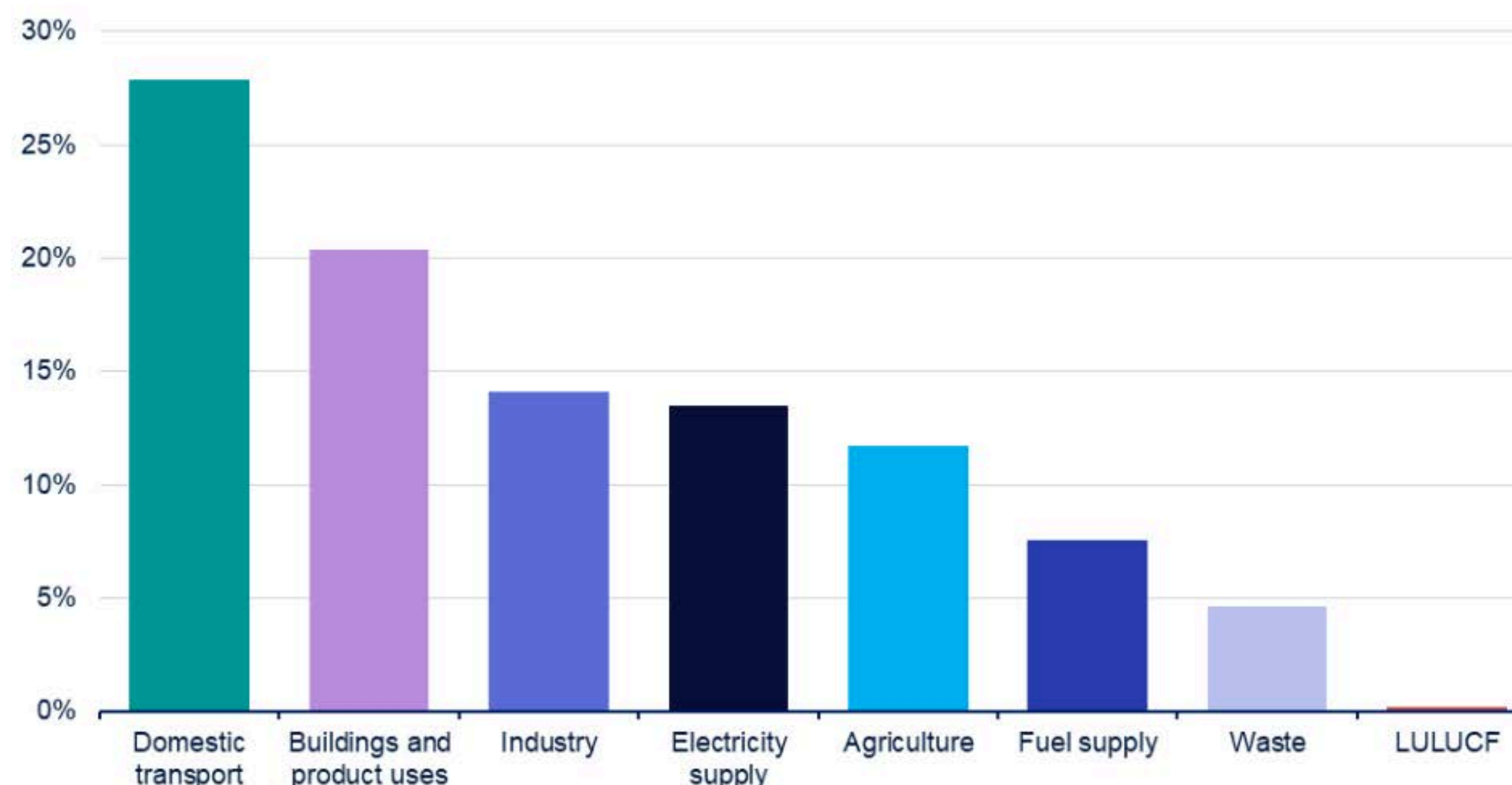
Net Zero Borough by 2050 Baseline

In the UK domestic transport is responsible for the majority of our emissions, over 25% of all UK emissions. These are from the cars, trains, planes and other vehicles we use to travel. Otherwise our highest emissions value also come from the buildings and products we use on the daily from the things we buy, our workplace and our homes.

Table 1.2 produced from the Footprint Impact Tool shows the UK baseline however averaged for the borough of Newcastle-under-Lyme. Similarly to the UK total emissions, road transport significantly contributes to the emissions from the borough contributing to around 37% of the borough's total emissions plus another 8% from out-of-boundary transport like aviation and shipping. The built environment and energy systems in the borough make up around 54% of all our emissions. Even though this number is higher than travel and transport, this is broken down into different sectors that need tailored actions. These sectors are broken down to housing which is the largest emitter, industry and commercial, agriculture and waste.

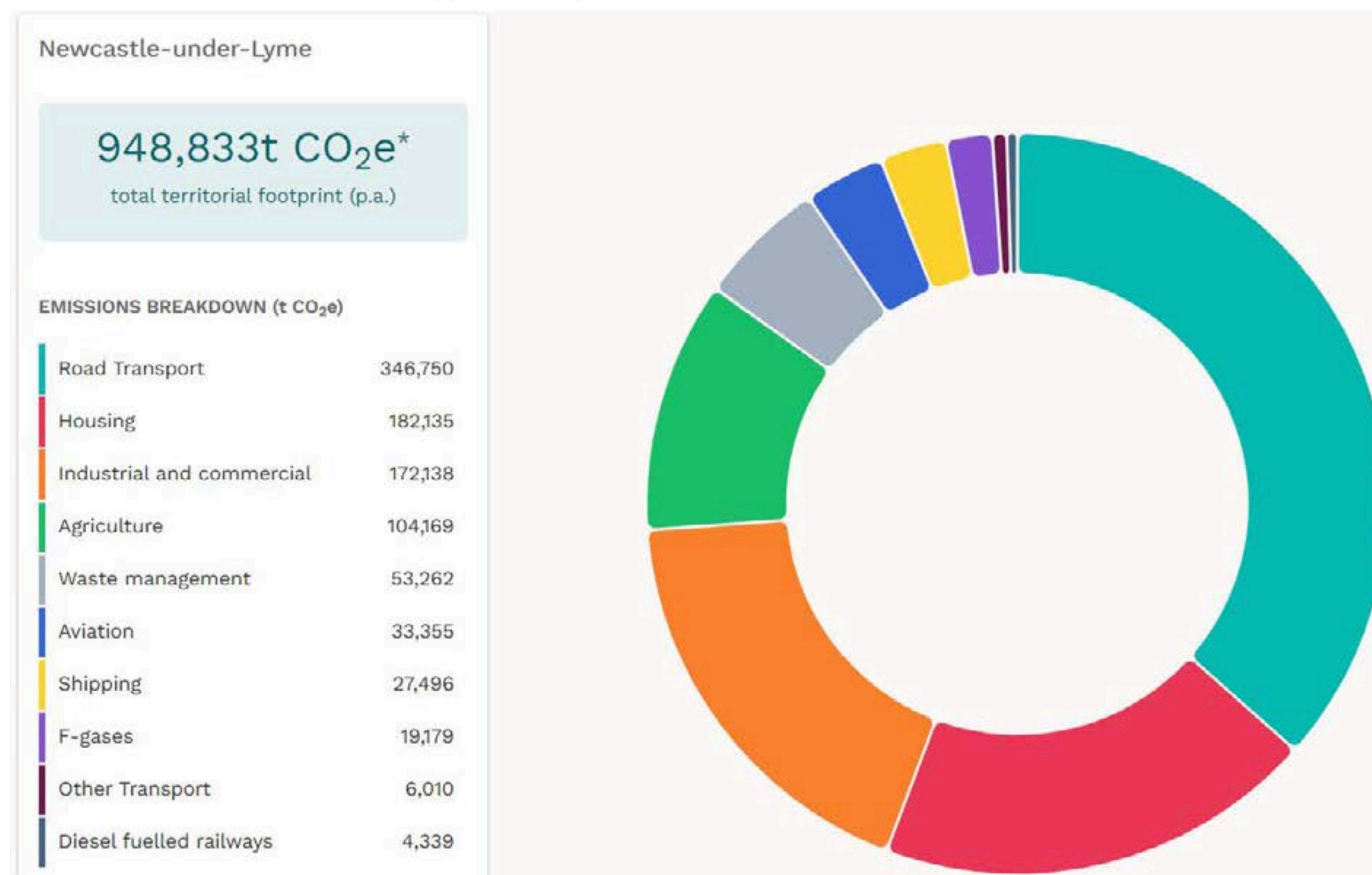
We know where our emissions are coming from in the borough. Next steps will be to understand these better and study different sectors to identify tailored actions for each to bring about a net zero and more nature-based future. This can only be done with the public and local organisations which is why the Council will ensure their engagement in this process.

Figure 5: Net territorial UK greenhouse gas emissions by TES sector, 2022 (%)



Source: Table 1.2, Final UK greenhouse gas emissions national statistics 1990-2022 Excel data tables
Note: LULUCF is land use, land use change and forestry.

9



10

2050 Built Environment & Energy Delivery Plan

With the majority of our emissions originating from the built environment and energy, it is vastly important to deliver decarbonisation efforts as a Council and borough to reduce the greenhouse gases that are produced from this sector and create innovative solutions. Many of these actions have yet to be consulted, which will be addressed by this plan and strategy. However there are actions that the Council have already progressed or will do in the near future to begin decarbonising Newcastle-under-Lyme’s built environment and energy systems to achieve a net zero borough by 2050.

Scope 1

To develop and achieve a net zero built environment and energy system in Newcastle-under-Lyme borough by 2050.

Cost and achievement date to be identified through consultation.

To develop a consultation on the borough’s agriculture, housing stock, and industrial and commercial stock to develop actions for 2050

Cost and achievement date to be identified through consultation.

To identify and implement areas for renewable energy generation.

Cost and achievement date to be identified through consultation.

To create and implement a waste reduction strategy.

Cost and achievement date to be identified through consultation.

Scope 2

To power the energy demand of the borough’s built environment on 100% clean/renewable energy/electricity.

Cost and achievement date to be identified through consultation.

Scope 3

To ensure all contractors and resources used in decarbonising the borough’s built environment are net zero and ethical or have plans in place to be so by 2050.

Cost and achievement date to be identified through consultation.



2050 Travel & Transport Delivery Plan

To ensure the Council and borough are able to decarbonise the borough’s own travel and transport, the Council will have set out a delivery plan for 2050 with actions assigned by a certain deadline, to different staff and services and finally with a summary of the action and its cost. This will allow an accountable process for the decarbonisation of the borough’s travel and transport systems. See some of the relevant actions from the Delivery Plan the Council has achieved or is currently working on to achieve a net zero borough by 2050:

Scope 1

To decarbonise all in-boundary travel and transportation.

Cost and achievement date to be identified through consultation.

To develop a consultation on the borough’s transportation stock to develop actions for 2050.

Cost and achievement date to be identified through consultation.

To develop the borough’s active travel routes so all residents have access to be able to actively travel.

Cost and achievement date to be identified through consultation.

Decarbonise all taxi vehicles in the borough according to the Staffordshire County Taxi Decarbonisation Strategy.

Cost and achievement date to be identified through consultation.

Scope 2

To power the energy demand of the borough’s travel and transport systems on 100% clean/renewable electricity.

Cost and achievement date to be identified through consultation.

Scope 3

To ensure all contractors and resources used in decarbonising the borough’s transportation are net zero and ethical or have plans in place to be so by 2050.

To ensure that all out-of-boundary transportation into the borough is decarbonised or working towards decarbonisation.

Cost and achievement date to be identified through consultation.



Natural Environment & Sequestration Introduction

The Council has the duty to facilitate the promotion of our natural environment for local biodiversity and the sequestration and storage of atmospheric carbon. This includes the creation and promotion of grasslands, woodlands, rivers, lakes and any other green and blue spaces in the borough. You may be asking yourself why it's important for us to protect and promote the natural environment in the borough. By ensuring the natural environment is healthy we can increase the amount of local species and biodiversity in the area, which can help store more carbon, make the borough more resilient to flooding and adverse climate, cool areas of high density, provide great spaces for personal health and wellbeing, and overall is of great value to the borough socially, economically and environmentally.

The natural environment is especially important for the Council's 2030 and 2050 net zero goals as more diverse expanses of natural environment in the borough can increase the rate and amount of carbon sequestration and storage which can greatly aid in reducing the Council's and borough's emissions.

As we move closer to 2030 and 2050, this strategy and plan will continue to develop as the Council and borough work together to create and implement action that will aid in creating a more diverse and prosperous natural environment in the borough.



Natural Environment & Sequestration Delivery Plan

To ensure the Council and borough will be able to protect the natural environment and offset any remaining carbon emissions from the borough, we must set out a delivery plan for the natural environment and sequestration to be achieved by 2050. This includes promoting biodiverse habitats to flourish in the borough whilst ensuring they are accessible by the local public to use and enjoy at the same time. These biodiverse habitats can also very effectively act as carbon sinks to help us achieve our 2030 and 2050 net zero goals within the built environment, energy, and travel and transport. Some of the main actions from the Delivery Plan are shown below.

<p>To develop Newcastle-under-Lyme Borough into a natural rich area that is biodiverse and resilient.</p> <p>Cost to be identified through consultation.</p> <p>2050</p>	<p>To develop and adopt a long-term forestry and tree management plan for Council owned resources.</p> <p>Cost to be identified through consultation.</p> <p>2026</p>	<p>To decarbonise the borough's land use operations.</p> <p>Cost to be identified through consultation.</p> <p>2050</p>	<p>To partner with the County wide Local Nature Recovery Strategy and deliver their objectives.</p> <p>Cost and achievement date to be identified through consultation.</p>
<p>To work with the County Council, District Councils and the Midlands Net Zero Hub (MNZH) to commission the creation of a carbon sequestration and storage tool for natural resources.</p> <p>Cost to be identified through consultation.</p> <p>2026</p>	<p>To partner with Staffordshire Wildlife Trust and other natural environment experts in Staffordshire.</p> <p>Cost to be identified through consultation.</p> <p>2024 - Ongoing</p>	<p>To ensure out-of-boundary waste and wastewater is contained to outside the borough or treated upon entry.</p> <p>Cost and achievement date to be identified through consultation.</p>	<p>To adopt a Grassland Management Strategy</p> <p>No Associated Cost</p> <p>April 2024</p> 

Engagement & Behaviour Change Introduction

How will everything set out in this strategy and delivery plan actually be achieved? Through the engagement with staff, the public and the professional sector is the answer to that question, all in collaboration to achieve these goals in a way that benefits society, the economy and the environment. The only way we can achieve a net zero, more biodiverse and resilient society is through working together, which is why this strategy has a whole section focused on engaging with key people like yourselves and introducing changes in behaviours in the borough through education and action.

The Council aims to consult professional partners to ensure the action being taken and implemented is best practice. However most importantly the Council will be consulting the public on this strategy and delivery plan to reflect the issues you face that relate to sustainability in the actions we take. That way the actions we take are the best they can be and will positively benefit the borough socially, economically and environmentally.

Additionally in this action theme the Council aims to work with local and national organisations and groups to facilitate awareness and implementation campaigns to inform the borough about sustainable change and supply opportunities to create change.

As we move closer to 2030 and 2050, this strategy and plan will continue to develop as the Council and borough work together to create and implement action that will aid in achieving our sustainable ambitions.



Engagement & Behaviour Change Delivery Plan

To ensure all actions are well informed and to ensure we involve yourselves, one of our biggest priorities is engagement and behaviour change. This ensures that all actions taken throughout the timeline of this plan are well informed by expert organisations and the public so they reflect best practice and what you want. As a Council we will also aim to raise awareness around these issues and engage members of the public in different campaigns, projects and initiatives to create sustainable behaviour change and implement sustainable solutions in our borough's homes, businesses and environment by 2050. Some of the main actions from the Delivery Plan are shown below.

<p>To create and publish social media networks for the environment and sustainability for the Council.</p> <p>No Associated Cost</p> <p>June 2024</p>	<p>To create and publish a new webpage for the environment and sustainability for the Council.</p> <p>No Associated Cost</p> <p>June 2024</p>	<p>To consult the public and relevant Council staff with all upcoming strategies and plans.</p> <p>Cost to be identified through consultation.</p> <p>June 2024 - Ongoing</p>
<p>Create a quarterly sustainability people's assembly for public consultation of the SESDP.</p> <p>Cost to be identified through consultation.</p> <p>June 2024 - Ongoing</p>	<p>To campaign online and in person on various subjects in the SESDP to raise awareness and facilitate action with local communities.</p> <p>Cost to be identified through consultation.</p> <p>June 2024 - Ongoing</p>	<p>To facilitate an EV and Net Zero Workshop Event for residents and businesses to support their fleet and site net zero transition.</p> <p>Cost to be identified through consultation.</p> <p>2026</p>



Conclusion

The Sustainable Environment Strategy and Delivery Plan drives forward key changes that Newcastle-under-Lyme Borough Council and the borough need to reduce the impacts of climate change and to be resilient and healthy in a future that will be significantly impacted by climate change. This Strategy and Plan isn't the solution to only environmental issues that we face as residents, businesses and as a borough but also solves issues faced within our economy and society by creating more efficient and healthier action through the built environment and energy, travel and transport, the natural environment and sequestration, and engagement and behaviour change.

Climate Change and its various social, economic and environmental impacts are vast and are felt by all in the borough however with a plan that is accountable, ever evolving and realistic we can achieve anything.



References

1. About the IPCC <https://www.ipcc.ch/about/>
2. What is Climate Change?
<https://www.un.org/en/climatechange/what-is-climate-change>
3. Effects of climate change
<https://www.metoffice.gov.uk/weather/climate-change/effects-of-climate-change>
4. The Greenhouse Gas Protocol A Corporate Accounting and Reporting Standard
<https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>
5. Global Protocol for Community-Scale Greenhouse Gas Inventories
https://ghgprotocol.org/sites/default/files/standards/GPC_Full_MASTER_RW_v7.pdf
6. United Nations The 17 Goals
<https://sdgs.un.org/goals>
7. About Doughnut Economics
<https://doughnuteconomics.org/about-doughnut-economics>
8. Review of Environment Strategy & Roadmap to Net Zero Cabinet Report
<https://moderngov.newcastle-staffs.gov.uk/ieListDocuments.aspx?CId=118&MId=4237&Ver=4>
9. Department for Energy Security & Net Zero 2022 UK greenhouse gas emissions: Final figures.
<https://assets.publishing.service.gov.uk/media/65c0d15863a23d0013c821e9/2022-final-greenhouse-gas-emissions-statistical-release.pdf>
10. Footprint Impact Tool
<https://impact-tool.org.uk/footprint/footprint?regionId=E07000195&geography=local-authority&footprintType=territorial&scale=absolute>
11. UK Local Authority GHG Emissions
<https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics-2005-to-2021>