Climate Emergency Response Plan 2024-27

Foreword

Now, more than ever, we have to face up to the many challenges of climate change. Climate Change is very real, as has been made abundantly clear by the increase in severe weather events in the last decade and especially in the last few years. 2023 was the hottest year on record and is directly attributable to human induced climate change[1] and this is not my analysis but the analysis from organisations like the UK Met Office, NASA and the EU amongst others.

We therefore must ask ourselves how are we addressing our impact, how are we going to adapt to these changes and is County Durham going to be a place where residents, businesses, communities and the public sector can come together to change things for the better; to influence each other so we can all achieve a carbon neutral lifestyle?

To secure this positive and effective change in the climate agenda is ultimately our goal, and this, our third Climate Emergency Response Plan is the next step in making that vision a reality. However, we need to be honest about the scale of the challenge, radical interventions and a step change in resources and pace of delivery will be needed if we are to stay on track to meet our net zero targets. With the financial pressures we are all facing it is vital that we maximise all sources of external funding and recognise the importance of partnership working.

County Durham was at the forefront of the industrial revolution, with steel making and coal mining being some of the first industries to start the process of industrialisation. Whilst we are proud of our industrial past and heritage, we also let the CO_2 genie out of the lamp and have hundreds of years of CO_2 emissions and industrial legacy to deal with. It's time to recognise that we need to lead the way in going from a 'Black to Green' economic model. We need to be at the forefront of the clean, green, industrial revolution, whilst supporting our residents to adopt low carbon lifestyles. This plan will pave the way for doing this by investing in people, nature recovery, technologies, research, and development, leading the way in projects such as Local Area Energy Planning, minewater heat, ensuring that businesses we work with have net zero plans with meaningful engagement and information sharing between partners to enable us to achieve this goal. This is not just a Durham County Council ambition, this is an ambition that is shared by all our partners, and we want everyone to help to ensure we deliver.

[1] https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2024/2023-the-warmest-year-on-record-globally

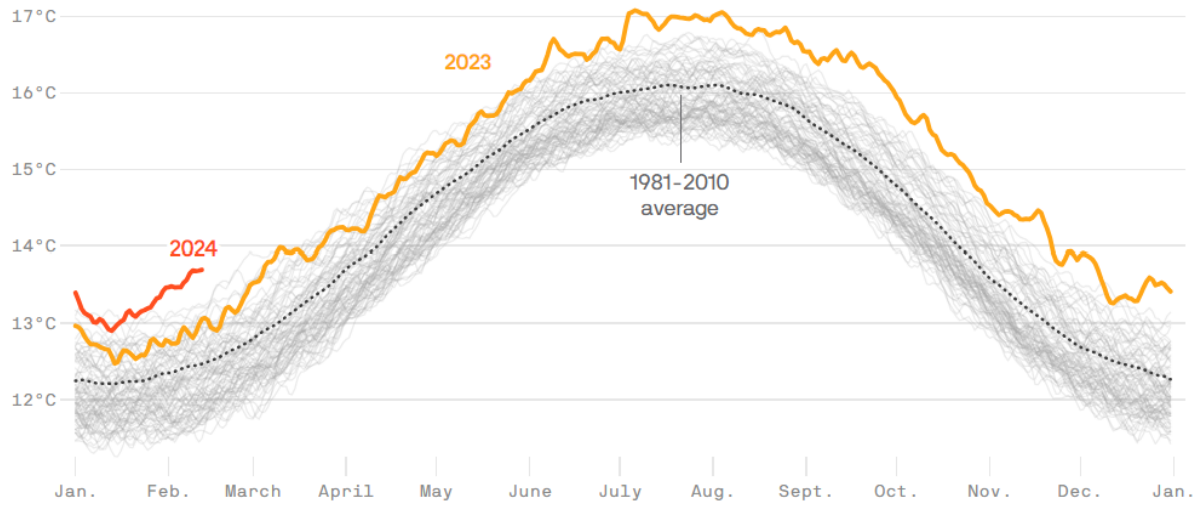
Contents

1. Background and Context

Why is this Important?

In the five years since the Council declared a climate emergency, there has been a worrying increase in extreme wildfires, floods, droughts, and storms, which have devastated many areas and habitats across the world, as climate change continues to threaten aspects of human and species existence. July 2023 was the world's hottest month on record and global warming exceeded 1.5 degrees Celsius across an entire year for the first time (between February 2023 to January 2024). Whilst the first year-long breach doesn't break the 2015 landmark Paris Agreement, it does bring the world closer to doing so in the longer term.[2]

The Intergovernmental Panel on Climate Change (IPCC) is the international body for assessing the science related to climate change. In their most recent report, they unequivocally cite human activities as the cause of global warming.[3] Stating that global greenhouse gas emissions have continued to increase from unsustainable energy use, land use change, lifestyles and patterns of consumption. The report states with high confidence that human-caused climate change is affecting many weather and climate extremes in every region across the globe which has led to widespread adverse impacts, losses and damages to nature and people. Vulnerable communities who have historically contributed the least to the problem are disproportionately affected.



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The graph above shows global average daily surface air temperature since 1979, and the trend that can be seen is incredibly concerning with a significant proportion of days in 2023 recording record daily temperatures. Global average air surface temperatures in 2024 are also currently surpassing those in 2023.

[2] World's first year-long breach of key 1.5C warming limit
[3] Source: IPCC Climate Change 2023 - Synthesis Report

Scientists agree that society needs to make radical reductions in greenhouse gas emissions over the next few years, so there is an urgency to this work that underpins everything we do. Whilst international and national collaboration is required, it is also recognised that work must take place with all sectors of our community to employ necessary, sustainable technologies and practices to achieve a net zero future as swiftly as possible. Accomplishing this requires a clear vision, underpinned by strong principles, taking a structured approach to the net zero journey with evidence-based targets and a detailed route map. Finally, the Council and all our partners and communities must work alongside each other to ensure County Durham is prepared for and resilient to the challenges and impacts of climate change.

National Context

The UK is a signatory to the Paris Agreement and has committed to contribute to global emission reductions to limit global temperature rise well below 2^0C and to pursue efforts towards 1.5^0C above pre-industrial levels. As part of this commitment, in 2019, the UK became the first major economy in the world to legislate through the Climate Change Act to reach net zero emissions by 2050. Greenhouse gas emissions must be reduced by at least 100% of 1990 levels (net zero) to contribute meaningfully to the Paris Agreement. The Climate Change Act also requires the government to set legally-binding 'carbon budgets' to act as stepping stones towards the 2050 target. The current fourth carbon budget requires a 52% reduction in emissions by 2027.

The Climate Change Committee (CCC) ensures the Government's emission targets are evidence based and independently assessed. In their 2023 Progress Report to Parliament the CCC reported increased confidence that the UK's 4th carbon budget will be met.[4] However, the same report highlights that despite new detail provided in the Carbon Budget Delivery Plan[5] the UK is not on track to meet its medium-term targets (by 2030 and 2037) and sets out several priority recommendations.

Whilst this report focuses on actions that we can influence and deliver locally, it also highlights the issues we think the Government need to address to help County Durham reach net zero, maximise the benefits of doing so and adapt to its impacts. Please refer to Appendix A for more information on national policy drivers.

Regional Context

At an average of 5.7 tonnes per person, the North East was ranked the fourth lowest emitter per capita by region and country in the UK in 2021.[6] London had the lowest emissions per capita (3.4 tonnes) and Northern Ireland the highest (10.6). The North East region has also experienced the largest percentage reduction in emissions between 2005 and 2021 due, in part to, industrial closures.

[4] Climate Change Committee (June 2023) Progress in reducing UK emissions - 2023 Report to Parliament
[5] Department for Energy Security and Net Zero (March 2023) Carbon Budget Delivery Plan
[6] Department for Energy Security and Net Zero: local authority ghg emissions stats summary update

Each local authority in the region has agreed to their own targets for tackling climate change. Devolution presents a unique opportunity to be much more joined up in the approach to decarbonisation and adaptation. Seven local authorities, including County Durham make up the North East Combined Authority (NECA) which came into effect in May 2024, following the election of Kim McGuinness as the new mayor.[7]

Devolution – The North East Combined Authority (NECA)

The North East devolution deal has 'reduced carbon, reduced inequality' at its heart and highlights a number of strengths and opportunities across the region for tackling climate change. To ensure achievement of positive economic, social and environmental outcomes the priorities of NECA are to

- Accelerate decarbonisation and the North East's contribution to national and global net zero targets.
- Enable clean growth and opportunities for more and better jobs, underpinned by innovation.
- Support environmental protection, restoration and improvement.
- Facilitate a 'just transition' leading to improvements in quality of life and growth that is inclusive for all in our region.

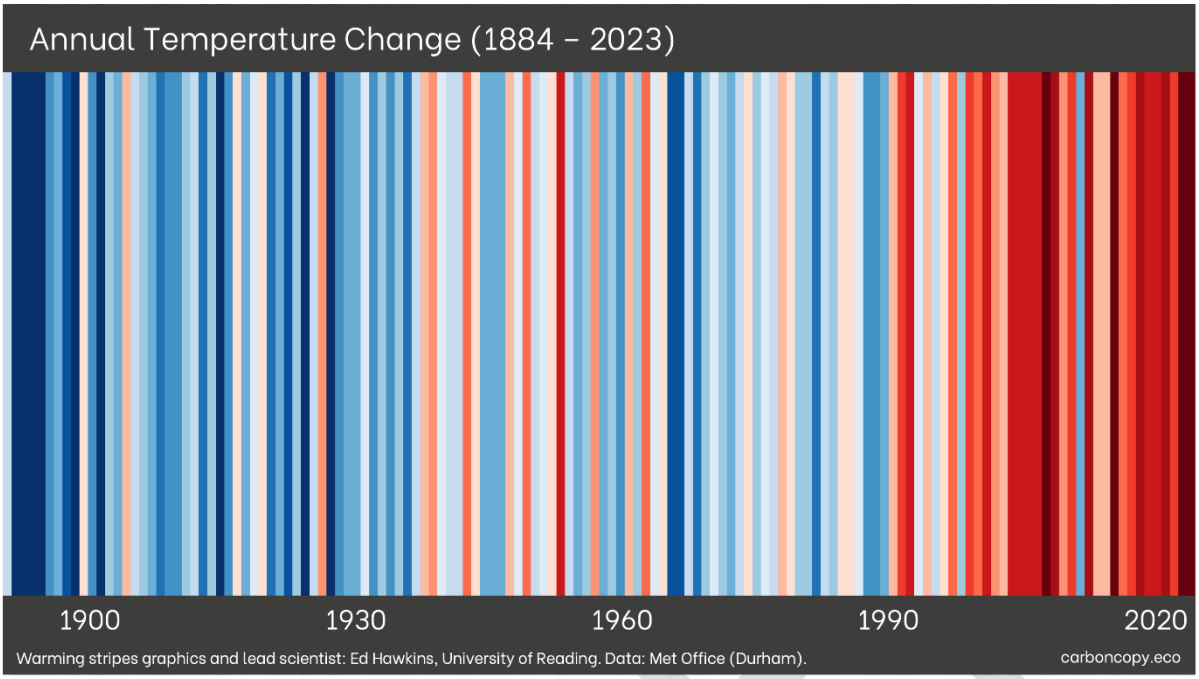
The Local Authority seven area (LA7), group of Senior Net Zero Officers, are helping to shape the NECA and provide peer to peer support.

Alongside our partners we will also be ensuring that Adaptation and climate resilience are more joined up across the region, with at scale partnership work critical to be able to adapt to more extremes of weather that will impact across the region.

Local Context

Climate Change is happening in County Durham too. These warming stripes, created by Professor Ed Hawkins (University of Reading), show the temperature change in County Durham, from 1884 to 2023. Each stripe represents the average temperature for a single year, relative to the average temperature over the period as a whole. Shades of blue indicate cooler-than-average years, while red shows years that were hotter than average. The stark band of deep red stripes on the right-hand side of the graphic show the rapid heating in recent decades.

[7] https://www.northeast-ca.gov.uk/



On 20th February 2019, the Council declared a Climate Emergency in recognition that unless action is taken, the window of opportunity to limit global warming to 1.5°C to avoid the most severe impacts of climate change on humanity and natural systems will be lost.[8] As part of this declaration the Council agreed to:

- Reduce carbon emissions from Durham County Council's operation by 60% (from 2008/09 levels) by 2030; and
- Investigate what further actions are necessary to make County Durham carbon neutral by 2050 and pledge to achieve this.

Following a comprehensive public consultation, the Council adopted the first Climate Emergency Response Plan (CERP1) on the 12th February 2020 to cover the period up until 2022.[9] As part of the adoption of CERP1 a more ambitious target of an 80% reduction in emissions from the County Council's operations by 2030 was proposed and agreed.

CERP1 was followed by a revised and updated Climate Emergency Response Plan (CERP2) which was adopted by Cabinet on the 15th June 2022[10]. As part of the adoption of CERP2 the Council proposed and agreed to the following new targets:

- Achieve net zero by 2030 by retaining the CERP1 80% actual carbon reduction target for Council emissions by 2030 whilst offsetting or further reducing remaining emissions;
- Net zero by 2045 for countywide emissions (improved from 2050)

[8] Climate Emergency Declaration 2019
[9] Adoption of CERP1 (Item 7)
[10] Adoption of CERP2 (Item 4)

CERP2 contained a costed two-year action plan detailing over 150 projects that the council and its partners could take towards achieving these targets. CERP2 also confirmed that the carbon budgets that would be worked towards for countywide emissions would fall between the science based and national targets. This was in recognition that whilst it is imperative to decarbonise quickly (in line with the science based budget), the Council and its partners need to ensure a fair and just transition.

Much has been achieved since the 2019 Climate Emergency declaration, from the decarbonisation of Woodland Primary School in 2021, continued restoration of our peatlands and woodland creation programme, to the retrofit and launch of the Council's first Low Carbon Depot at Annfield Plain in 2023. Projects progress at pace and with enthusiasm to deliver low carbon solutions and opportunities. County Durham is recognised as a national leader in delivering Electric Vehicle charging infrastructure and is also nationally renowned for its Business Energy Efficiency Project (BEEP). For more information, please see our annual progress reports and visit www.durham.gov.uk/climatechange.

From a planning perspective, the County Durham Plan was adopted which reflects national policy requirements relating to climate change and several other planning documents are being prepared which will contribute towards net zero.[11]

Our Climate Emergency Response Plan not only reduces our carbon emissions, it also saves the Council money. The improvements to our streetlights mean they are only using a fraction of the energy they were when we started counting carbon in 2009. This alone will have saved the Council about seven million pounds last year. Our renewable energy installations generated over two and a half million kWh of electricity last year, reducing our bills and provided over £200,000 income through Feed in Tariff payments. The money saved can be used to assist front line services. The CERP is also helping to save County Durham residents and businesses money on their energy bills and provides a whole host of social, economic and environmental co-benefits.

This third Climate Emergency Response Plan (CERP3) will cover a three year period up until 2027 and aims to build on the successes of previous Plans, whilst helping us to stay on track towards the net zero targets.

2. Vision and Principles

The vision for our climate emergency response is to ensure that:

- We are working together towards a just transition to a Net Zero County Durham as soon as possible.
- All the energy that is used in the County will be generated from renewable sources, including the way we heat our comfortable, energy efficient buildings.

[11] For example, the Minerals and Waste Policies and Allocations document, Solar Energy Supplementary Planning Document (SPD), Energy Efficiency Renewables and the Historic Environment SPD, Trees Woodlands and Hedges.

- All of County Durham's transport will be ultra-low carbon and everyone will have access to safe and reliable public transport, while cycling and walking by choice whenever possible.
- Our natural environment will be thriving and will play an important contribution towards offsetting residual carbon emissions.
- Our strong local economy will support sustainable and highly skilled jobs.
- Rural communities will be connected, supported and sustainable.
- Our circular economy ensures almost all waste is reused or recycled with only a minimum amount sent for disposal.
- Our residents and businesses will be safe from the worst impacts of extreme weather events that currently threaten us.

The vision is built on 4 key principles that underpin the approach we are taking:

A Fair and Just Transition

Our climate is changing. That is beyond any doubt, and the impacts are now being felt around the world including here in County Durham. Fossil fuels must no longer be used wherever possible, and the transition must be as quick as possible.

Whilst we can do this, we do not want to disadvantage those most vulnerable in our society. A fair and just transition is about ensuring investment in new clean, green jobs, about making sure that people have access to safe, clean and green methods of transport and that people can live in warm comfortable homes without fossil fuel heating and without fuel poverty. Better internet access and speeds will keep us all connected regardless of our individual circumstances or physical ability.

There is also the social cost of carbon to consider, and which areas of society will be worst hit by the effects of the climate emergency, as many carbon emissions come with added effects which most often harm the most vulnerable people. No-one should be left behind as society changes to mitigate climate change, and no-one should be left to bear the brunt of our changing climate.

Achieving a Green Economy

The term 'green economy' refers to products and services from across the economy which actively enable a shift towards net zero and/or improve the environment. The Council and partners will work to facilitate County Durham's green economy by supporting the growth of green skills, encouraging the development of green enterprise and by embedding low carbon principles into business development activities.

We will ensure that sustainability and climate change are key considerations in all decisions relating to investment, production, development, transport, the economy, society, food and the environment to facilitate a truly green economy.

This principle is closely linked to the deployment of the Inclusive Economic Strategy (IES) which establishes a vision for 'more and better jobs in an inclusive and green economy', in which Planet is a priority. The IES performance framework aligns with our local net zero

targets. Carbon reduction must also be central to the 'Levelling Up' and shared prosperity fund agendas and other funding bids across the County that are central to the regeneration agenda.

Being Community and People Centred

If County Durham is to successfully tackle climate change, everyone will have to have an opportunity to have their say and be heard, no matter their circumstances, age, ability, race, beliefs, sex, or gender. Collaborating with communities, individuals, and partners to ensure that there is a consensus for this plan, will enable the Council to build the best net zero county for our residents and communities. We aim to tackle climate change in a way which aligns with the 'Approach to Wellbeing Principles' which support the County Durham Vision.[12]

Continued communication with individuals, communities, and partners is essential to the delivery of this Plan and for it to be transparent to enable scrutiny. The Climate County Durham website was developed and launched in County Durham on the opening day of COP 26 in Glasgow. It is designed to be a place where any member of the community can find ways to do their bit or have their say on what we're doing as we work together towards a net zero future.

Addressing the Ecological Emergency

County Durham's natural environment has a vital role to play in tackling climate change. Healthy ecosystems can absorb and store a significant amount of carbon in soils, sediments, and vegetation. However, the destruction and degradation of habitats results in the direct loss of carbon stored within them, threatens the survival of our unique wildlife, and makes it harder for people to adapt to the impacts of climate change.

In 2022 the Council declared an Ecological Emergency in recognition of habitat and species decline in County Durham. Nature based solutions will therefore need to be implemented which address both the ecological emergency and climate emergency in an integrated way, whilst upholding key principles identified by Natural England. The Council has adopted an Ecological Emergency Action Plan and a Local Nature Recovery Strategy is being prepared which will need to be cognisant of climate change and vice versa.

3. Ways of Working

Working in Partnership

Local partnerships are vital in tackling County Durham's journey towards net zero. Whilst Local Authorities are well placed to drive and influence emissions reductions in their wider areas, the Council only emits approximately 2% of the county's total carbon footprint. By

[12] https://countydurhampartnership.co.uk/county-durham-together-partnership/approach-to-wellbeing/

bringing together local strategic partners to develop joint projects and share knowledge, we can make a bigger impact.

Durham County Council has strong working relationships with many strategic partners across the county and the UK, through many different channels including the County Durham Partnership and the Climate Emergency Strategic Board, the Department of Energy Security and Net Zero, Net Zero North East, the Northeast & Yorkshire Net Zero Hub, and the Local Authority Net Zero Knowledge Sharing Network. The Council also sit on working groups and boards for partners, including Northern PowerGrid; Co Durham & Darlington NHS Trust and Durham University's Energy Institute.

As devolution continues, regional relationships will become increasingly important. The Council already has strong existing relationships with the other local authorities that are covered by the North East Combined Authority. The council is also working with regional partners through Net Zero North East, which brings together local government, business, education, the public sector, and civil society to drive a comprehensive regional approach to tackling the climate emergency. Sharing best practice and leading innovation are significant elements of the work of this group.

The Council is also involved in many other international and national partnerships including:

- Working with our two German twinned regions (Tübingen and Kreis Wesel) on an Urban Diplomacy Programme, with a range of other UK and German municipalities, using the Sustainable Development Goals as the framework to structure the activity
- APSE Energy supports local authorities in the fields of energy and climate change. The Council won their award for the 'Best Climate Initiative' in 2020 and we regularly attend and speak at their events, sharing learning with other local authorities and organisations across the country.
- Countryside Climate Network - rural communities are at the forefront of climate change impacts. The Council is a member of this network (part of UK100) to share learning and experiences in rural communities.
- The Council helps to co-ordinate a national network of local authorities, which meet quarterly and share knowledge on all things net zero to accelerate collective progress and problem solve effectively.

At a local level the Council continues to have wide ranging conversations with Durham University on many climate related issues. One area we are continuing to have discussions on is the development of Local Area Energy Plans, to understand the need for a collective future plan and options for how to achieve this.

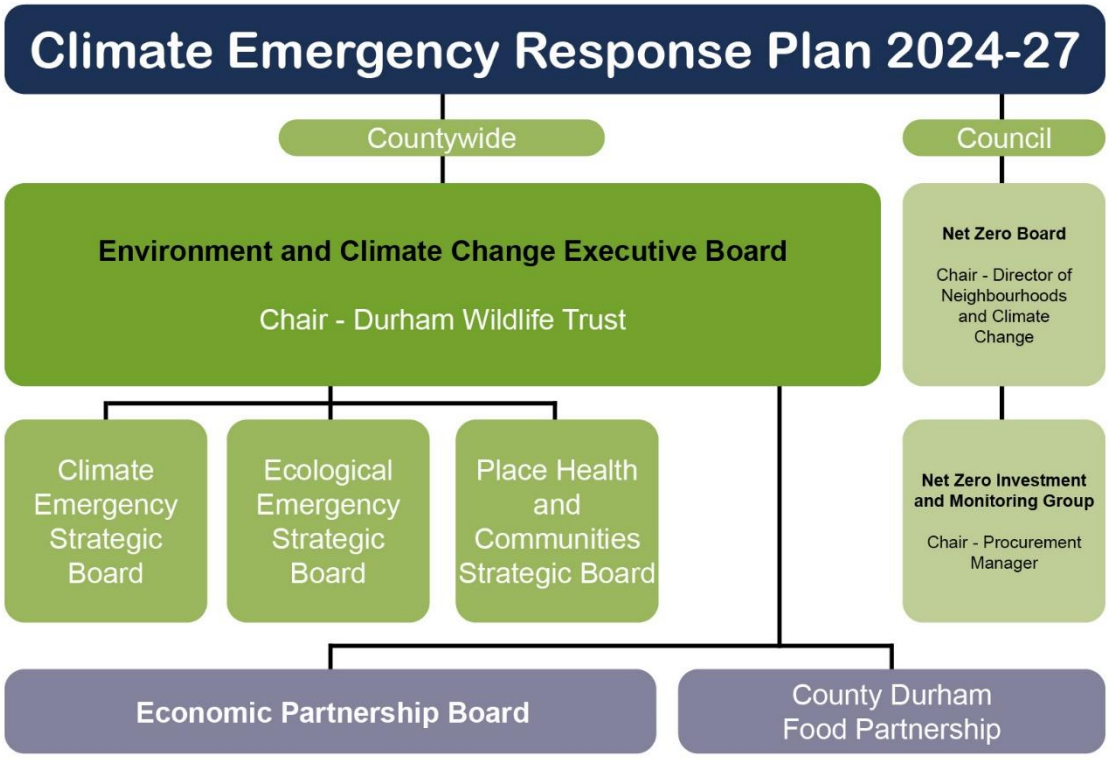
Governance

The CERP has been governed through the Net Zero Board and the Environment Overview and Scrutiny Committee. However, for CERP3 we are expanding our governance, so that most thematic areas will be overseen by a group relating to the County Durham Partnership. Overall ownership of the countywide elements of the CERP is through the Environment and

Climate Change Partnership, which forms part of the delivery mechanism for the County Durham Vision 2035. The Environment and Climate Change Partnership, along with its subgroups, takes the lead on delivering the following objectives contained within the vision:

- Protect and enhance our core heritage and natural assets and biodiversity
- Maximise quality of local environment and clean air with opportunities to be physically active
- Reduce carbon emissions and mitigate against the impact of climate change
- Build on growth in green technologies
- Encourage sustainable transport choices
- Air quality (transport)
- Ensure homes are built to ambitious standards in terms of energy efficiency, carbon footprint and wider environmental impacts
- Design of development to be sympathetic to the natural, built and historic environment
- Protecting our natural environment

This focuses specifically upon Countywide projects, not Council projects which will continue to be overseen by the internal Net Zero Carbon Board. The following thematic areas will be overseen by the following existing governing groups:



Each governing group will help oversee and drive Countywide progress against their specific thematic actions. Thematic areas relating to Transport and Connectivity; Waste and Procurement; Communication and Engagement will be monitored through existing Council structures, however all actions will be monitored twice yearly and will be reported through to the Environment and Climate Change Partnership Board. For more information on progress relating to the partnership please visit the County Durham Partnership – Better for everyone website.

To tackle the net zero challenge across County Durham we need to work closely with our partner organisations, each of which has their own specific role to play in the journey. This is especially so with Boards highlighted above, many of which are chaired by external partners or have external partners involved in the decision making. The fact that partner organisations are involved in the governance of particular themes shows the commitment they place on mitigating climate change.

We also have an Environment Overview and Scrutiny Committee that maintains oversight of delivery of the Plan and acts as a critical friend to the process. A local Councillor also sits on the cabinet as the Cabinet Portfolio Holder for Neighbourhoods and Climate Change to ensure that the climate emergency remains a high priority on the political agenda.

A Climate Emissions report will be produced and published annually, showing progress against actions and tracking progress against emissions.

Taking on Feedback

One of the Council's highest priorities is to find the best ways to engage and work together with our community and partners to meet net zero targets. It was recognised that many people need to see more information around climate change impacts and what we can do reduce our carbon footprints. In 2019, the council carried out a comprehensive consultation across the communities, schools and staff. We have taken the messages on board from that period and have developed a range of communication and engagement tools and are now active on social media.

The Council meets regularly with local action groups, including Climate Action Durham and the Local Area Action Partnerships and provides updates on progress. Two years in a row, we have held a 'Progress on Net Zero' event in partnership with Climate Action Durham, focussing not just on progress but also on ways in which we can improve.

Providing Feedback to Government

The 'Asks of Government' set out in previous iterations of the CERP were reported to the Government's Department of Energy Security and Net Zero (DESNZ) and to the Government's Yorkshire and North East Regional Net Zero Hub. Individual discussions on specific issues have been held with relevant Government departments and other partners over the five years since the climate emergency was declared and we plan to continue those relationships during the CERP3 period.

In April 2022 we were honoured by a visit from the Chairman and Chief Executive of the Government's independent Climate Change Committee who wanted to see, first hand, how Durham County Council is working towards its net zero carbon targets. We reported our 'Barriers and asks of Government' to the Commission, including the need for long term funding and project timetables, clearer policies, skills gaps and infrastructure development.

Other ways we are also continuing our work to influence Government include:

- A representative from the DESNZ Local Net Zero Team sits on the County Durham's Climate Emergency Strategic Board;
- The Council sits on the Board of the DESNZ Yorkshire and North East Net Zero Hub.
- The Council also sits on the Advisory board for Northern Powergrid, which helps to advise on infrastructure issues and investment opportunities.

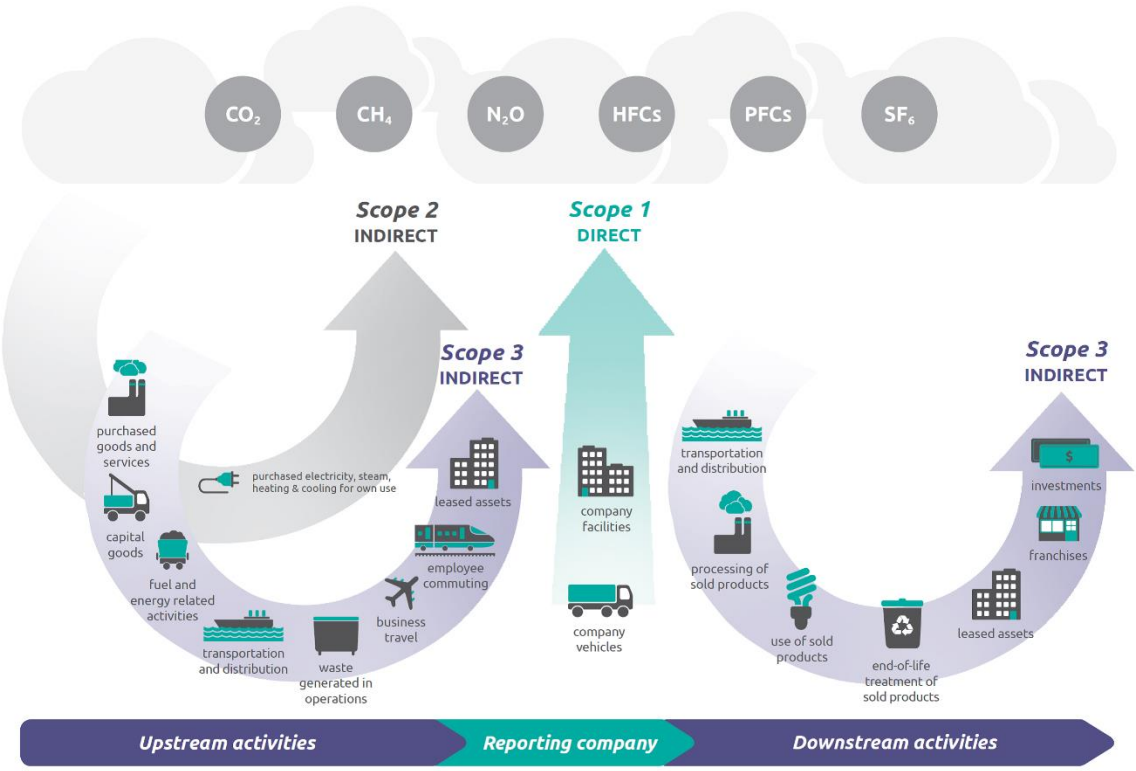
4. The Council's Carbon Footprint & Pathway to Net Zero

When the Climate Emergency was announced, the council set a 60% reduction target by 2030 based on the baseline of 2008/9. In 2022 this was accelerated to an 80% absolute reduction target, with the remaining 20% likely to be from offsetting.

Recent years have seen some volatility in carbon emissions particularly from Covid and subsequent changes to service delivery, which has led to a 'bounce back' in 2021/22, however the downward trend continued into 2022/23.

Our methodology follows the Greenhouse Gas (GHG) Protocol methodology and is calculated at the end of each financial year.

In line with the GHG Protocol we report Scope 1 (direct emissions), Scope 2 (indirect emissions from electricity), and some Scope 3 (indirect emissions from the supply chain and other factors). The difference between Scope 1, 2 and 3 is demonstrated below:



Whilst our target focuses primarily on Scope 1 and 2, with some emissions relating to business travel included, it is recognised that Scope 3 emissions represent a much greater proportion of Council emissions, due to the amount of purchased goods and services and other areas within Scope 3 that we 'own'. We will therefore be working to expand our carbon reporting and incorporate more details in Scope 3 in these during annual updates.

In the past year we have conducted a boundary review of what we consider to be correct in relation to our Net Zero target. The next section expands on this and there are further details in Appendix B.

4.1 Carbon Footprint

The Council's carbon emission baseline was established in 2008/09. Changes over time mean that certain areas that were in our baseline are no longer in the Council's 'operational control'. This is a key consideration for the Council as we can only significantly influence buildings and operations that we are responsible for. We therefore need to consider if any of the buildings/operations which were included in the 2008/09 baseline should be removed because of changes to Council responsibilities.

Some of the biggest changes to our 'operational control' (as defined in the Greenhouse Gas Protocol) are in the education sector where the ongoing Academisation programme means that the Council no longer has any control over 90% of secondary schools in the County. As of the 1st April 2024 there were 119 academies out of the original 262 schools in the County and this number is increasing every year. Academies are managed independently of the local authority, however almost all of these sites were included in the baseline data. In the

intervening years, most of them continued to purchase their energy through the council contract and we were able to fully track and include their emissions.

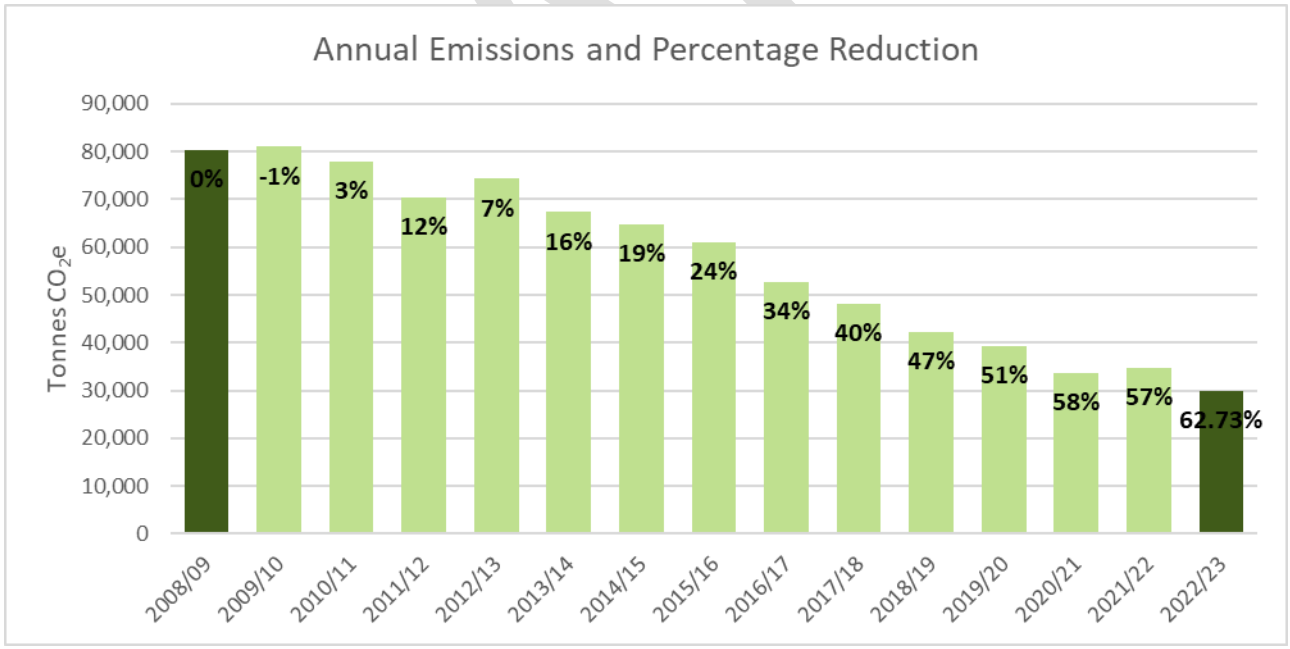
Where changes in structures mean you no longer control a source of emissions, you should remove it from your current inventory, but also ensure they are removed from the baseline to ensure the changes do not result in savings.

As Durham County Council no longer has operational control over Academies they have now been removed from the footprint and baseline. The Authority believes that it still has enough control over maintained schools for them to remain within the scope of reporting, however as more schools academise over the coming years, it is likely that the baseline will need to be revisited again before 2030.

We have also taken this opportunity to review and clarify other aspects of the boundary. A summary of the changes is included in Appendix B.

These changes removed a number of sites from our portfolio and baseline. The new 2008/9 baseline will therefore be 80,522 tonnes and translating the 80% reduction target to this means that we need to reduce our emissions to no more than 16,104 tonnes by 2029/30.

Under this new boundary, our current footprint is 29,940 tonnes which is a 62.7% reduction from the baseline.

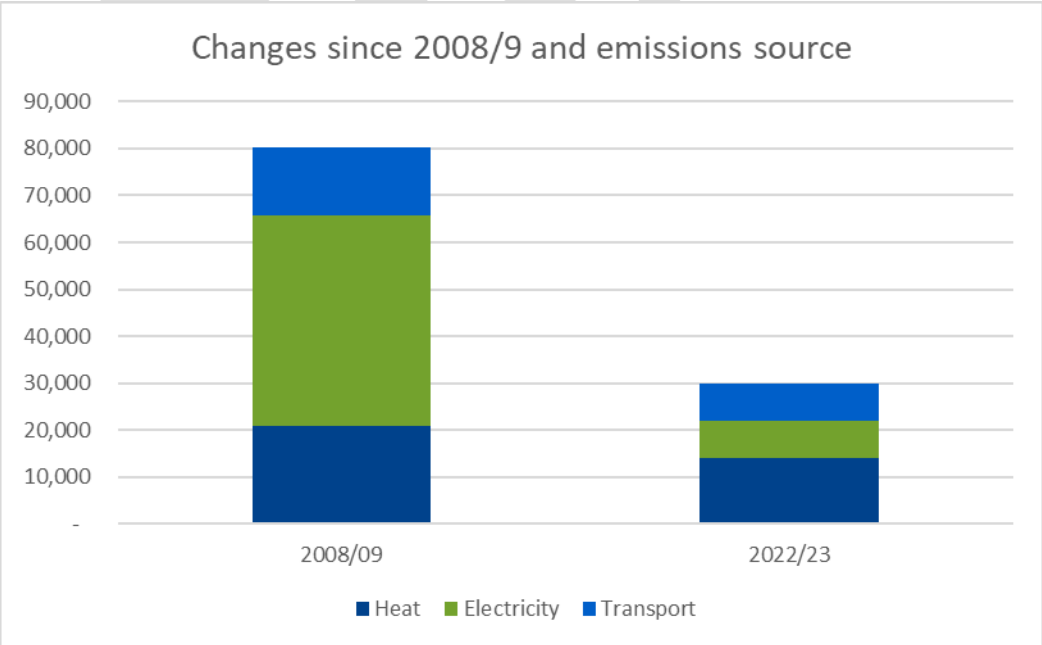


The dark green are based on calculations and actual data, whereas the intervening years are estimates based on previous savings data.

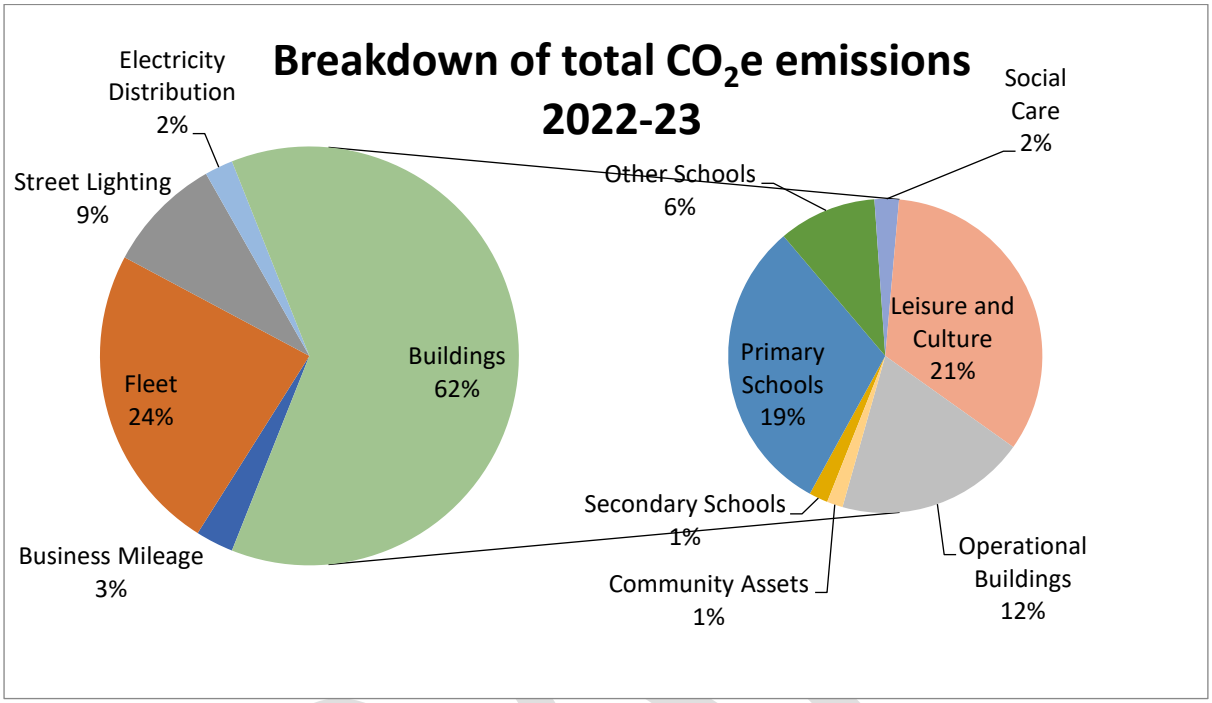
The table below shows a breakdown of emissions by source, scope and fuels for the baseline and the most recent year.

		Annual Emissions (tonnes CO_2e)	
		2008/09	**2022/23**
Scope 1	Solid Fuel (wood pellets)	73	-
	Liquid fuels	696	14
	Gaseous fuels	19,988	7,759
	Vehicle fleet & plant	10,853	7,139
	Total	**31,609**	**14,911**
Scope 2	Purchased electricity (Grid)	41,920	5,478
	Total	**41,920**	**5,478**
Scope 3	Business Travel	3,738	875
	Solid Fuel (wood pellets)	-	- 0
	Liquid fuels	-	255
	Gaseous fuels		6,082
	Purchased electricity (Grid)		1,684
	Electricity Distribution	3,256	655
	Total	**6,994**	**9,551**
Total emissions		**80,523**	**29,940**

This chart shows how the emissions have changed over time and the breakdown between heating, electricity and transport emissions.



The following pie chart shows an alternative breakdown of where our emissions originate, with buildings accounting for 62% of emissions, but fleet emissions making up a significant proportion.



Out of the building estate, 43% of the emissions come from schools and as almost all secondary schools have academised, their proportion is now very small. The non-school Council buildings producing the most carbon are our leisure centres, particularly those with swimming pools, and large administrative buildings.

The majority of the Fleet emissions come from services such as Waste and Recycling, Clean and Green, Highways Services and Facility Management. These areas contain a significant proportion of HGVs and heavily used vehicles.

The emissions from Street Lighting (9%) are still significant but this sector has made huge changes over the years. In the 2008/9 baseline year, this sector produced over 19,000 tonnes of CO_2e, whist the most recent data calculates that it is now causing only 2,689 tonnes, showing a reduction of over 85%, alongside much reduced operational costs.

The council has carbon impacts beyond where we draw a boundary for our target and this exercise does not mean we are limiting the work to just emissions that are within that boundary.

As part of this broader work, over the next 12 months we will be conducting an exercise to collate data from council purchases and contracts allowing us to have a much greater knowledge of our Scope 3 emissions. This will be included as part of our reporting in the future.

Our progress will also be significantly influenced by Government policy at a national and regional level and it should also be borne in mind that the responsibilities of the council may change over time. Changes to our duties in the years leading to the target date may affect our ability to hit our target.

4.2 Moving towards Net Zero

Approach

Achieving the climate change targets set out in CERP3 in their entirety will require both access to external funding and, also advances in technology in some areas. Without these the Council will not be able to achieve its targets.

It is recognised that many of the actions are heavily dependent on access to funding. Given national strategies aimed at achieving net zero by 2050, it is hoped that funding will be made available, however this cannot be guaranteed, especially given the current financial climate.

In this climate of tight resources, it is essential that our work at both a Council level and as a countywide influencer is targeted to those areas where the biggest impact can be made.

Future work and investment will therefore be built into established Council processes. External funding will be sought wherever possible to supplement Council budgets. Our current budget for decarbonisation works does not meet our estimates of what is needed to meet the 2030 target by a substantial margin.

However there still needs to be an acceleration in our deployment of low carbon retrofit works, moving almost every asset away from the reliance on fossil fuel and the deployment of renewable energy generation, if we are to retain a chance of meeting our target.

The vast majority of emissions come from buildings and fleet fuel use, thus these must be our priorities.

In buildings, the solution will be a combination of:

- whole building retrofits
- heating system replacements
- lighting system upgrades
- Renewable energy generation
- Incorporating new technology in specialist areas
- Engagement with building managers

The intervention paths are supported by education and awareness campaigns to general staff and targeted energy use information provided to sites managers. As part of our energy management strategy, we are using energy management software to monitor building energy use and rapidly identify issues. This is communicated with building managers enabling energy use to be optimised.

We will target improvements with the greatest carbon impact. In practice, this means our larger sites, typically leisure centres, depots and offices will be considered first, alongside issues such as boiler age, condition, grant support, future plans etc

Where possible we will maximise the benefit of capital expenditure by coordinating works with scheduled or emergency repairs and maximising the use of available grant.

Managers from the Low Carbon Team are involved and engaged with broader asset management and disposal so are kept aware of developments to the corporate estate.

For Fleet, our approach will be a transition to low carbon vehicles, primarily battery EV, combined with an upgrade of our depots to maximise charging using low carbon electricity. This will be supplemented by route optimisation, work planning and development of a solution to allow council EV vehicles to charge at staff homes without impacting on their home energy use/bills. We will also explore alternative technologies such as hydrogen, which may play a niche role for our larger fleet vehicles.

4.3 Key Projects and Developments

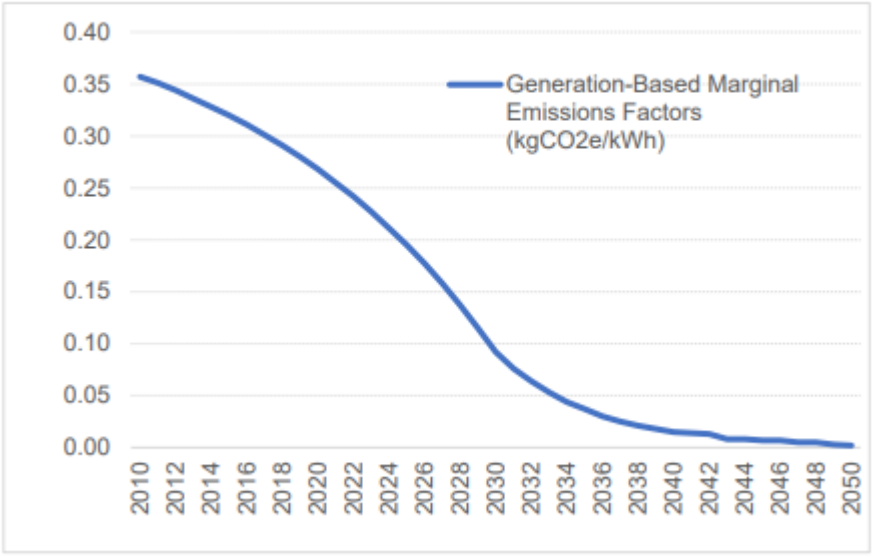
Low Carbon Buildings

There are three main pillars to our approach to decarbonising buildings. These are:

1) Reduce energy demand
2) Move away from fossil fuel heat sources
3) Generate electricity from renewable sources.

The first pillar concerns reducing energy demand. The greenest energy is that which is not used, so incorporating building improvements such as insulation and efficient heating schedules will ensure energy is not wasted.

Heating direct from fossil fuels (e.g. gas) will always have a relatively high carbon factor, limiting savings that can be achieved. As the electricity grid incorporates more low carbon and renewable energy, the carbon intensity of electricity will decrease. This chart shows the expected carbon intensity of electricity in the UK over time and is critical for achieving the council and UK targets on carbon reduction.



(source UK Treasury https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal)

Between 2023 and 2027, the grid is expected to become about a third less carbon intense, and by 2030 emissions should be lower by about two thirds. Moving to an electricity driven heating (and transport) system will continue to deliver additional carbon savings as the grid decarbonises.

In most cases, through the use of good design and renewable energy, buildings will cost less to run than the original as well as providing resilience against future price changes.

The following table shows our 20 largest energy users in the council alongside recent decarbonisation works or future ones planned. Together, these sites are responsible for 8,700 tonnes of the 18,500 tonnes from building emissions.

Rank	Name	Carbon Footprint (tonnes)	Improvements and developments
1	County Hall	890	To be decommissioned
2	Louisa Centre	878	New gas boilers installed in 2021 and 75kW of solar in 2022/3. The Building Management System (BMS) was upgraded in 2023 with more solar being installed in 2024.
3	Chester le Street Leisure Centre	717	Improvements aligned with leisure transformation programme
4	Consett Leisure Centre	639	Heating system shared with Academy Trust. New LED lighting planned and solar Car Ports being considered.
5	Aycliffe Young People's Centre	529	Assessment work commencing for new heating system.

6	Newton Aycliffe Leisure Centre	633	Heat pumps, solar and LEDs installed in late 2023 with grant funding. Phase 2 decarbonisation work being designed for Pathways areas
7	Woodhouse Close Leisure Centre	512	Undergoing full rebuild
8	Spennymoor Leisure Centre	495	Recent solar PV on roof. Potentially suitable for funding bid in future due to age of boilers. BMS upgrade commissioned.
9	Freeman's Quay Leisure Centre	493	Recent solar installation, and further solar being considered. BMS fully upgraded in 2023. Decarbonisation plan being commissioned ready for next round of government funding.
10	Peterlee Leisure Centre	491	Heat pumps, solar and LEDs installed in late 2023 through gov funding and currently undergoing commissioning.
11	Mountsett Crematorium	293	Recent solar PV installation
12	Service Direct - Meadowfield	279	Significant solar installations. Some areas heated through heat pumps. Further works being considered.
13	Comeleon Offices	266	250kWp solar farm adjacent. Recent heat pump installation. Planning for solar farm extension to match new demand for heat pump
14	Teesdale Leisure Centre	264	Heat pump and solar being installed through gov funding
15	Gala Theatre and Offices	263	Significant lighting (LED) improvements done and solar installation recently completed
16	Durham Crematorium	261	Recent solar on roof
17	Morrison Busty Depot	240	Total depot transformation into low carbon depot. Insulation, heat pumps, 3MW solar with batteries, energy management system and EV chargers.
18	Green Lane Council Offices	204	Solar PV on roof with expansion being investigated. LED replacement programme in place.
19	Crook Civic Centre	189	Smaller boiler added for summer hot water to reduce gas use in 2019. Site has some LEDs and solar PV. Decarbonisation plan being proposed.
20	Wolsingham Leisure Centre	164	PV installed. No further work currently planned

Decarbonising our Main sites

The table highlights that most of our largest emitting sites have either had decarbonisation works delivered or work is scheduled, and that plans are being made for future

improvements. Over the CERP 3 period, feasibility work will continue and to ensure we have a continuous decarbonisation programme. This will ensure we can take advantage of grant opportunities but also plan for significant interventions at sites which will not be suitable for grants but are key to our longer term plans.

Public Sector Decarbonisation Scheme

The Public Sector Decarbonisation Scheme (PSDS) is the primary support mechanism helping the public sector transition to a low carbon estate. It provides grants to replace old, end of life fossil fuel boilers with a low carbon alternative. Durham County Council has been successful in securing funding in each round, however it is a highly competitive fund with strict eligibility criteria. DCC will seek to maximise this funding, however it will not be the solution for all our buildings.

PSDS projects centre around replacing an old boiler with a heat pump and often involve additional works such as solar PV, insulation, new controls and lighting upgrades. Where possible we favour a whole building approach in line with the principles outlined above.

Recent ongoing and completed projects under this banner and their predicted savings include:

- Abbey Leisure Centre: 40 tonnes/ year
- Teesdale Leisure Centre: 146 tonnes/ year
- Meadowfield Depot: 60 tonnes / year
- Newton Aycliffe Leisure Centre: 245 tonnes/ year
- Peterlee Leisure Centre: 322 tonnes/ year
- Comeleon House: 17 tonnes / year

Current 'live' projects include;

- Cotsford SEN school: 21 tonnes/year
- Bishop Auckland Town Hall: 93 tonnes/year
- Durham Pathways: 23 tonnes/year

Morrison Busty Depot Improvement

This major ERDF funded project was completed last year and is the cornerstone of our depot and fleet improvements. It has combined significant building retrofit with insulation alongside a total redesign of the heating system to incorporate air source heat pumps. Fleet decarbonisation is supported through the installation of EV charging posts which will allow vehicles based in north Durham to convert and charge easier. The whole site is powered by a large 3MW solar farm alongside battery technology. This generates surplus power during the day which is then stored for the heating and fleet overnight. 2024/25 will be the first year that the site will be fully operational and should generate significant savings.

Improving Building Lighting

The council is delivering a programme of surveying buildings and installing LED lights through an invest to save financing model. A similar programme is available for maintained schools where they can access a low interest loan to fund the work and make repayments from energy bill savings. The aspiration is to deliver LED lighting to 60 council sites and schools during the CERP 3 period subject to costs and payback meeting the invest to save criteria.

The LED lighting programme has started with surveys and quotes for Consett Leisure Centre, where savings of 53 tonnes of carbon can be made. Due to the shared nature of this site, works are being undertaken in tandem with Consett Academy, leading to further carbon savings for County Durham. Additional surveys have also taken place at Green Lane Offices and Spennymoor Leisure Centre, with more sites are scheduled to follow.

A number of schools are utilising the Department for Education one off energy efficiency grant in 2022-23 to improve their site's consumption by installing LEDs to parts of their building.

Renewable Energy Projects

We have an extensive portfolio of building and ground mounted solar arrays. We have installed over 3MW of generation capacity to our sites, as well as a further 3MW solar farm adjacent to our largest depot. Stand alone solar PV projects completed in the past year include:

- The Louisa Centre (75kWp)
- Aycliffe young People's Centre (152kWp)
- Spennymoor Leisure Centre (75kWp)
- Gala Theatre (74kWp)
- Solar PV on 6 Children's homes (40kWp)

Over the years these have provided significant savings, both in terms of carbon and finance. The early schemes have paid back their investment and are now generating annual financial savings for the authority as well as carbon reductions.

In 2022/23, PV sites except the new solar farm generated 3,700,000 kWh hours of electricity. Whilst not all this was used on DCC's sites, the total carbon avoided would be in the region of 700 tonnes.

The new solar farm at Morrison Busty became operational last year and generated 997,000kWh for the part of the year it was operational.

Other Renewable Energy projects currently under development:

- Extension to the solar farm adjacent to Comeleon House (size to be confirmed, potentially 200kWp)
- Solar Car Ports across five DCC sites and car parks
- Hackworth Road Depot wind turbines: Four 6kW turbines proposed, planning permission granted

- Joint Stocks wind and solar project on former landfill site

In addition, there are a number of maintained schools investigating solar PV potential using the same finance mechanism as LED lighting.

Other Site Improvements

There is a dedicated budget for improving our heating controls systems and a programme for upgrading key sites to ensure they are running effectively. Effective controls are becoming increasingly important as sites change their heating source and embed additional technology such as solar PV and EV chargers.

In addition to ensuring the sites are controlled correctly, we are running a programme of dosing an additive to the heating circuit to facilitate heat transfer to the radiators, reducing overall gas usage. In sites where this has been delivered, we have been seeing savings of up to 10% on gas usage. Further sites are being explored.

Out of Hours Monitoring

Heating patterns can be disrupted by equipment failure or site adjustments and if left unchecked could be running for weeks or months. We are utilising our energy management software and staff resource to identify, track and correct unusual patterns of gas usage.

We are expanding our programme of out of hours monitoring for next winter and are using a new programme to identify unusual patterns of gas use. The diverse portfolio of buildings with a variety of uses and operating hours makes this a challenging task, and from 2024 onwards we will be utilising an additional programme to help track trends and identify anomalies. This should improve both identification accuracy and response time.

Communication and Engagement with Managers

We have a comprehensive staff engagement programme with compulsory climate change training for all employees. In addition to this, site managers have access to a portal allowing them to monitor and track energy use for sites they are responsible for.

Representatives from key service areas are engaged with the carbon management process with the internal Net Zero Board enabling action in service areas with the largest impact.

Reports prepared for cabinet include a section requesting information on climate impacts and the forthcoming Service Planning programme has embedded climate and environmental issues.

We provide dedicated support to schools through our Energy Management Service Level Agreement. This grants them access to energy usage data and also provides an annual report and several hours of in school support for school managers, teachers and facilities staff.

We are also engaging with managers through our environmental management system, the Investors in the Environment programme. The council currently holds the ‘Green’ level of this standard (the highest level), and in 2022 we won the Overall Outstanding Achiever

award in the Large Organisation category. As well as targeting direct carbon savings from buildings and travel, this work focusses on broader resource use and will help contribute to carbon savings in the supply chain.

Estate Changes

The CERP 3 period should see a stabilisation in our building portfolio and work patterns which have been changing since Covid.

The main change will be the closure of our largest office building (County Hall), which is currently responsible for around 900 tonnes of CO_2. As staff move to alternative accommodation, floors are being decommissioned and energy use reduced. A major energy user in the building is the Archive service which require temperature and humidity controlled environments for their collections. This service is being moved to the purpose built and adapted site, The Storey at Mount Oswald, enhancing the visitors experience and providing modern environmental controls for the delicate objects.

Other staff are being relocated to existing office accommodation and the new Corten House building at Aykley Heads. This building is heated using an air source heat pump, supplemented by solar PV.

The council has also recently acquired the Rivergreen building which will serve as the main location for Council Members to hold meetings and engage with senior staff. This building won the RICS UK 'Sustainable Building of the Year' and a RIBA Design Award when it was built in 2005. It contains a number of sustainability features such as a rammed earth wall (for heat retention) to lower the carbon impact of the building.

Fleet

Our strategy with fleet vehicles is for small and medium vehicles to default to an EV alternative as they become due for replacement. There may be a minority of occasions where a conventional fuel vehicle is retained, for example the need to be on call, or long daily range requirements. These would need to be justified by the service manager at the time of replacement.

Larger vehicles will be considered in their next replacement cycle when improvements in technology can be reviewed and charging provision will have expanded, but before the 2030 target.

We are currently operating 62 EVs within our fleet which in addition to lowering emissions, help to save the Council money on fuel costs.

The fleet has approximately 600 vehicles that could be suitable for replacing with an EV alternative. The proposal to swap out smaller vehicles in the current replacement programme will see about 200 replaced for EVs during the CERP period. Larger vehicles are scheduled to be replaced in their next cycle, with over 200 due for replacement in 26/27. This means the majority of the larger fuel users will be changing to alternative fuels closer to the 2030 target date. The largest of the fleet vehicles are in a sector where the technology is still evolving and we will keep these under review as technology and pricing evolves.

This programme allows the council time to develop the necessary infrastructure and policies for charging.

In the next year or two, it is likely the fleet will need to expand to incorporate additional food waste collection requirements. As every waste collection authority will have the same requirements at the same time, and battery technology in refuse collection vehicles is still new, these are likely to be diesel driven vehicles.

If we are able to upgrade the fleet as planned, the footprint could be lowered by over 4,000 tonnes per year by 2030, leaving mainly specialist equipment like mowers and gritters on diesel. However, this should be considered an estimate as there are many unknowns and variables between now and these dates. It will depend on technology driving down the prices of larger vehicles and grid capacity to charge sufficient vehicles as well as direction and enabling policies from central Government. In addition, the market for buying commercial vehicles has become more competitive recently as companies operating in cities with emission control zones being willing to pay more for an EV vehicle to avoid additional daily charges.

We are also exploring technology to minimise the need to travel. For example, using cameras attached to highway inspection vehicles to record surface conditions and then using AI to analyse the images for road defects to minimise the need for site visits following the inspection.

The potential savings will be updated throughout the CERP period depending on progress and vehicle technology developments.

Business Travel

Emissions from business travel have reduced significantly since covid and officers are conducting many more meetings remotely. Staff will be encouraged to keep travel emissions low, for example through car sharing, and using technology to avoid unnecessary travel. We have a small EV pool car fleet to supplement low carbon business travel and this will be reviewed and potentially expanded in line with demand as we occupy new offices. Flights have increased slightly since the pandemic, but are still at a very low level when compared with beforehand. As staff move into new premises, travel plans will be developed to influence home to work travel, but also support travelling for work.

Street Lighting

The programme to replace street lights with LEDs and selective dimming is approaching the final stages. It has been incredibly successful and has resulted in significant carbon and financial savings for the authority.

In the CERP 3 period, we will replace up to 1,950 remaining old streetlights with LED, saving around 594,000 kWh over this time. This will leave a further 3,500 lights to upgrade before 2030.

4.4 Achieving the target/ Pathways to Net Zero

We are currently developing scenarios to enable us to meet the target. As part of this, we will be looking at the impact of the recent heat pump installations and their effectiveness at decarbonising sites and the pace of projects such as these and EV charger installations. This will help us scale the level of interventions needed.

An example of what the final footprint could look like is shown here:

		Annual Emissions (tonnes CO_2e)		
		2008/09	**2022/23**	**Target year**
Scope 1	Solid Fuel (wood pellets)	73	- 0	- 0
	Liquid fuels	696	269	50
	Gaseous fuels	19,988	13,840	6,500
	Vehicle fleet & plant	10,853	7,139	3,000
	Total	**31,609**	**21,248**	**9,550**
Scope 2	Purchased electricity (Grid)	41,920	7,162	5,494
	Total	**41,920**	**7,162**	**5,494**
Scope 3	Business Travel	3,738	875	500
	Electricity Distribution	3,256	655	500
	Total	**6,994**	**1,531**	**1,000**
Total emissions		**80,523**	**29,940**	**16,044**

This would require significant decarbonisation of heat and an ambitious transition of fleet vehicles. Usage of electricity would increase through heat pumps and EVs but the carbon would be offset by grid decarbonisation and renewable generation.

4.5 Offsetting

As mentioned, the Council has agreed to an 80% actual reduction in emissions, whilst offsetting or reducing emissions further to achieve net zero by 2030. If the 80% reduction target is met, this leaves 16,104 tonnes (or 16,044 tonnes if the slightly lower figure in the above table is achieved) that would either need to be targeted by further decarbonisation measures or offset to achieve net zero by 2030 and for subsequent years.

In simple terms, carbon offsetting is a mechanism used to compensate for remaining emissions through projects which collectively either remove an equal amount of greenhouse gas emissions from the atmosphere or avoid generating them in the first place. For example, typical activities that can count towards carbon offsetting include renewable energy generation, tree planting and peatland restoration.

Over the course of this CERP3 period the different approaches the Council could take to offsetting will need to be explored further and agreed in an Offsetting Strategy.

5. County Durham's Pathway to Net Zero

As mentioned in section 1, we are working towards the achievement of a net zero county by 2045. This is five years ahead of the government's 2050 target which may increase the challenge of local achievement but could also deliver more quickly the numerous co-benefits of acting on climate change in County Durham. We are also not alone in wanting to meet net zero before 2050 with other authority areas in the region setting pre-2050 targets (please see Appendix D). The Devolution deal is likely to provide greater opportunity for the region to meet these stretch targets and further establish the North East as a trailblazer for net zero.

The net zero target means that all carbon emissions from County Durham's housing, businesses, education providers, hospitals, transport activity etc will need to be reduced as far as possible by 2045.[13] It is unlikely that all of County Durham's emissions will be eliminated by 2045 so the remaining residual emissions would need to be offset.

5.1 Progress Towards Net Zero

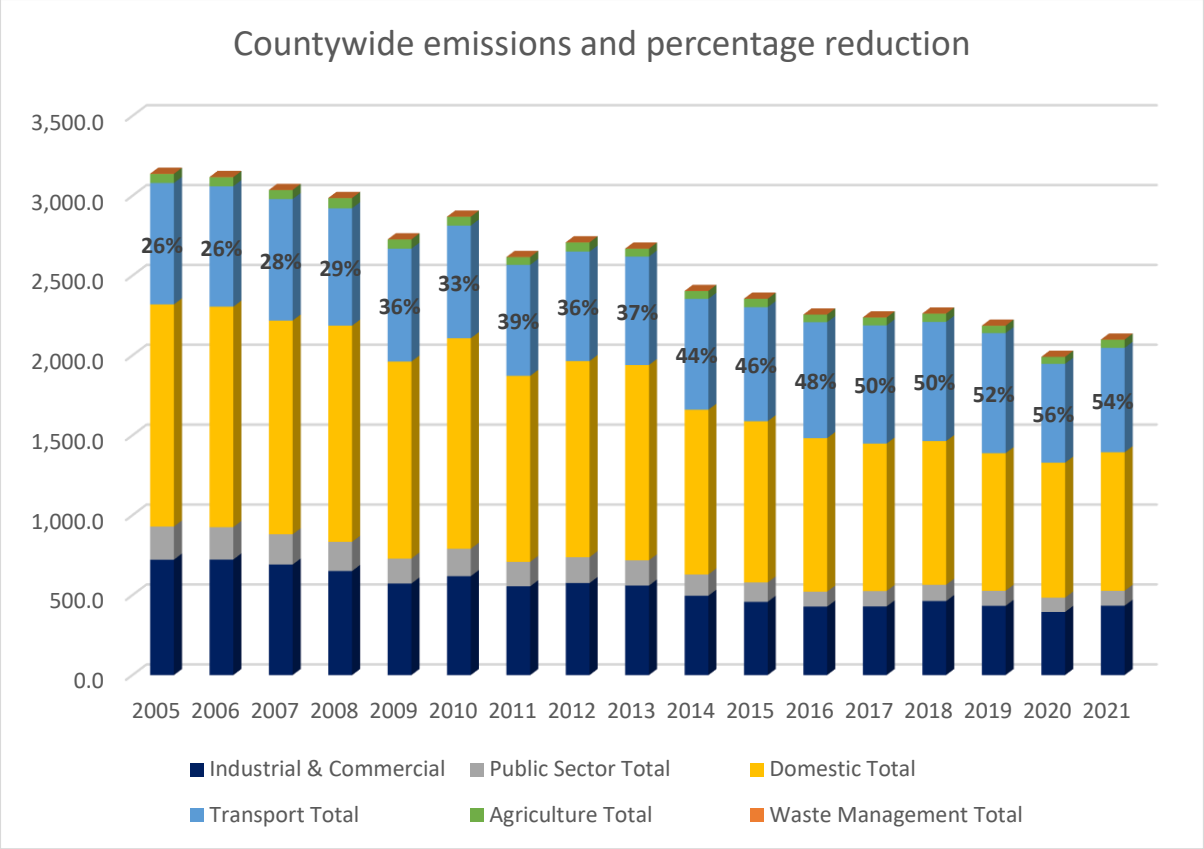
To determine progress towards net zero, the Council analyses data which is released annually by the Government, which is released two years in arrears due to the time it takes to compile for each local authority area in the UK. Countywide data includes only those emissions within the scope of influence the local authority and as such excludes large industrial sites, railways, motorways, land use, livestock and soils[14].

The most recent Government data available (at the time of writing) shows that County Durham achieved a 54% reduction in its emissions in 2021. In 1990 (the baseline year), County Durham's total carbon emissions were 4,698 kt CO_2e and by 2021 they were 2,177.2 kt CO_2e.

Between the 2020 and 2021 reporting years there was a 2% increase in emissions. This small increase is considered largely due to the re-bounding of business and travel activity following the easing of restrictions relating to the COVID-19 pandemic and an increase in emissions from heating buildings due to colder temperatures in 2021.

[13] The target also includes Durham County Council's emissions which contribute approximately 2% to the countywide footprint.

[14] Please note that emissions associated with the Agricultural sector, considered within the scope of influence of Local Authorities relate to energy and fuel use and not those associated with land use, livestock and soils.



To achieve net zero, emissions will need to be reduced by a further 2,520.8 kt CO2e (46%) by 2045. However, if total emissions continue to reduce at their average rate for the past 5 years (at 50.25 kt CO_2e) net zero will not be achieved until year 2064/5.

To meet the 2045 net zero target, annual reductions of 105 kt CO_2e would be required which is more than double the current average annual reduction. If allowing for 15% of emissions to be offset, as it is recognised that it will not be possible to fully eliminate all emissions, annual reductions could be reduced to approximately 89 kt CO_2e.[15]

To meet the milestone targets towards net zero set out in the previous Climate Emergency Response Plan, emissions will need to reduce by almost three quarters (74%) as shown in the following table by 2027 (i.e., the end of this third Climate Emergency Response Plan period).

Table x Countywide Carbon Reduction Budgets and Milestones

Year	Total Net Footprint kt CO_2e per year	% Reduced From 1990
2019	2,180.72	54%
2023	1,632.08	65%
2027	1,221.48	74%
2030	815.24	83%

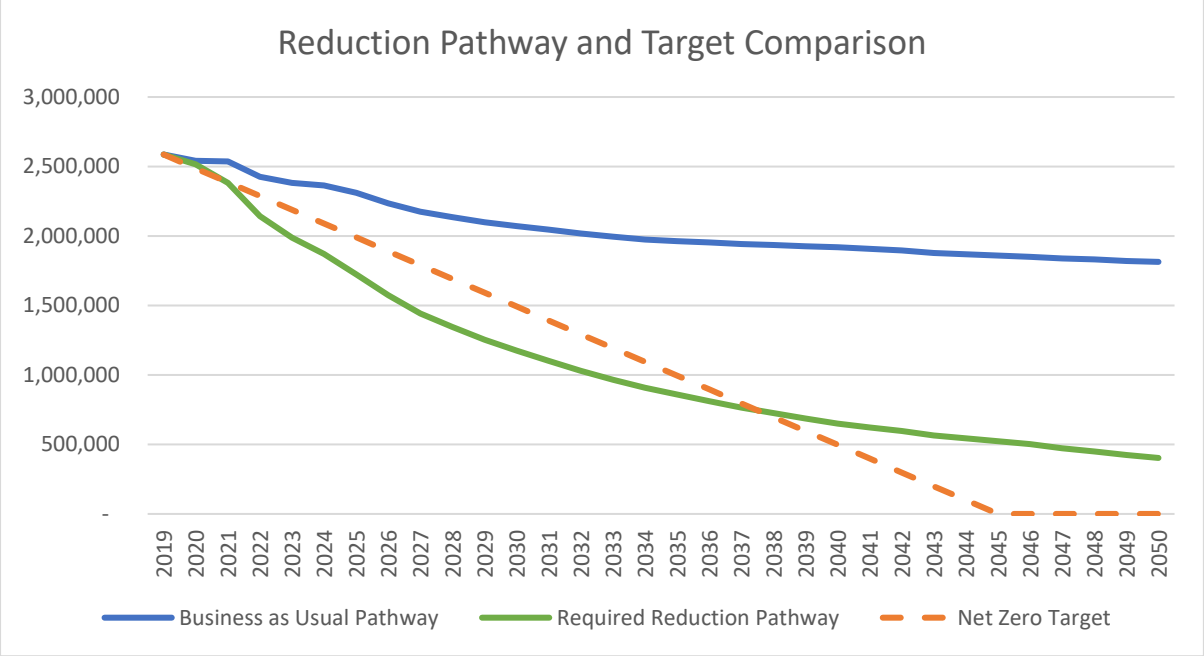
[15] Please note that 15% has been proposed as a proxy on offsetting as the Climate Change Committee state that this is what the UK Government's Net Zero Pathway requires. Please see: Climate Change Committee (October 2022) Voluntary Carbon Markets and Offsetting

2040	178.20	96%
2045	0	100%

5.2 Required Reduction Pathway

To better understand and convey what is needed to help meet the net zero and CERP3 milestone targets, The SCATTER Pathways modelling tool has been used. This tool has been specifically developed to help UK Local Authorities understand the scale and type of interventions needed to achieve decarbonisation.[16]

The following graph shows that if we were to follow a Business as Usual (BAU) trajectory (taking into account reductions from some nationally-led policies and continued grid decarbonisation), a significant gap would remain between realised emission reductions in County Durham and the net zero target in 2045. A much greater level of ambition and intervention is required to get the county within reach of net zero by 2045 as shown by the Required Reduction Pathway (RRP).



To achieve the emissions reductions associated with the RRP, all interventions are maximised to a high level, including demand reduction interventions, electrification and renewable energy. However, a 'gap to target' of 522,478 tonnes of carbon remains in 2045, equating to 11% of County Durham's carbon footprint. There would also be a 'gap to target' of 221,459 tonnes of carbon from the CERP3 74% reduction milestone, representing a 69% reduction from the 2019 baseline. This gap could potentially be closed through:

Innovation and Improvements in Technology

Innovation and technological improvements may increase emissions reduction across different sectors e.g., carbon capture technology. Whilst it is a highly risky strategy to rely

[16] For more information please visit the SCATTER Cities website: https://scattercities.com/

solely upon technological advances which may not be delivered either at all or in time, County Durham and the North East region benefits from an impressive range of innovative companies and organisations that are advancing technology and products which will help to reduce carbon emissions.

For example, Power Roll has developed solar film which can be used in locations that would not support conventional solar panels. Low Carbon Materials based in Seaham is a climate tech company focusing on developing low-carbon, next-generation construction material alternatives. Furthermore, Durham University (which is home to the Durham Energy Institute) leads the way in energy research. Examples of innovative projects include:

- Investigating the use of minewater as a heat source in Horden
- Trialling heating additives in heating systems to improve efficiency
- Exploring the opportunity for geothermal heat for County Durham
- Road resurfacing scheme at Elvet Hill, Durham using a carbon negative aggregate designed to lower the carbon footprint of asphalt

Going above and beyond the Interventions underpinning the RRP

Increasing the speed and volume of decarbonising activity through enabling factors such as changes to government policy, lower costs, increased consumer demand and capacity in the supply chain. Whilst delivering the interventions will be challenging, opportunities such as devolution offer an opportunity to deliver a step change in climate action.

Offsetting

Carbon offsetting relies on the purchase or demonstration of offset credits. One carbon credit is issued for each tonne of emissions avoided, removed, or captured from the atmosphere. These may relate to projects inside or outside of the county. However, County Durham offers lots of potential for local carbon offsetting relating to nature based projects such as peatland restoration and woodland creation. Kelp farming opportunities off County Durham's coastline, which also provides a food benefit, may also contribute to carbon offsetting in the future.

5.3 Emissions Reduction by Sector

The Required Reduction Pathway (RRP) is underpinned by interventions in the SCATTER tool that relate to different sectors.[17] The aim of this section is to show which sectors we may need to push towards making the greatest emissions reduction from over the course of CERP3.[18]

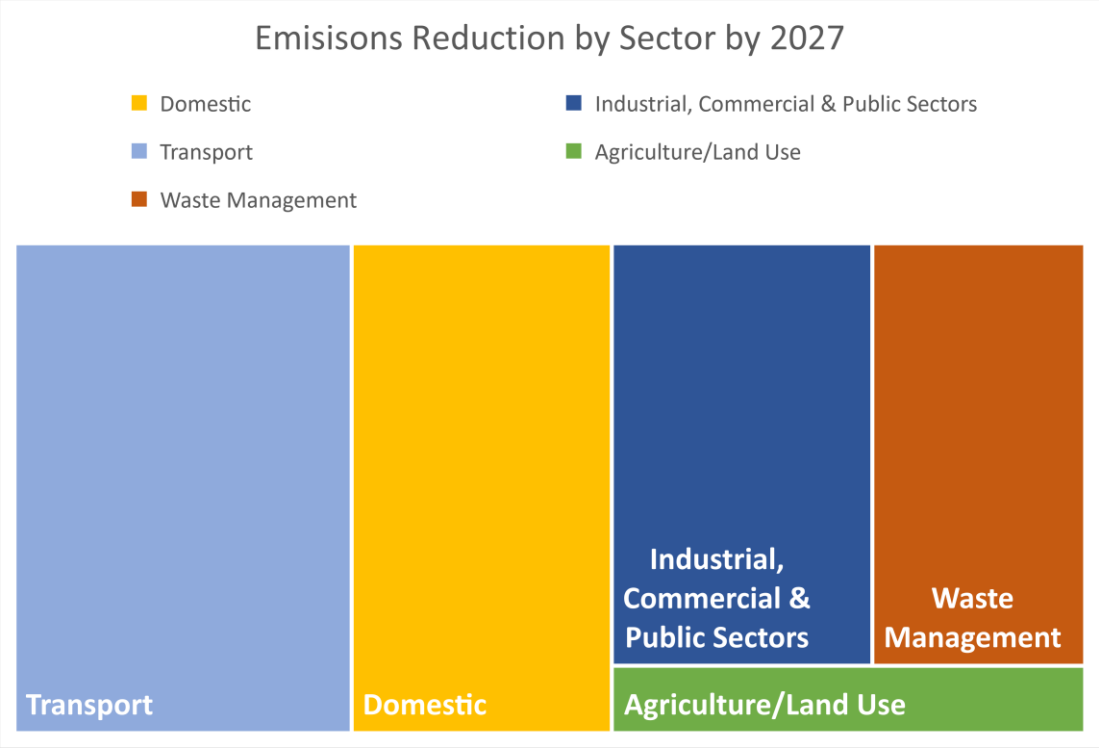
There will be some flexibility and we may not need to fully achieve greenhouse gas reductions in one sector, if it makes more sense in the local, County Durham context to over deliver in others. How far we can push towards or beyond emissions reduction in each

[17] The interventions are listed in Appendix C

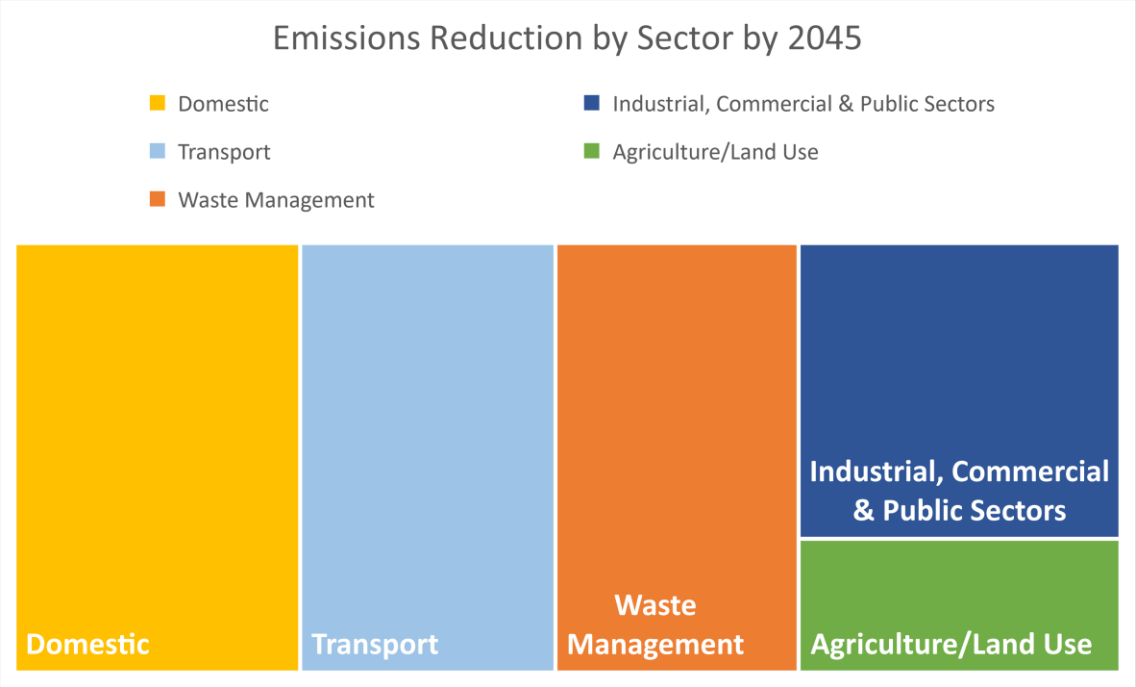
[18] Please note that the SCATTER tool groups emissions into sectors in a slightly different way than the Government's annual data release. The agricultural sector is represented within SCATTER's land use category and the public sector is included within the industrial and commercial category.

sector can only be determined by continuing to work in partnership with stakeholders, our communities and through UK Government support. The scale of the Council's influence is provided in Appendix C to help illustrate this point.

The following infographic shows that delivery against the RRP would require the greatest reductions in emissions from the Transport sector, followed by the Domestic sector by the end of the CERP3 period (by 2027). The least reductions would be required from the Land Use sector.



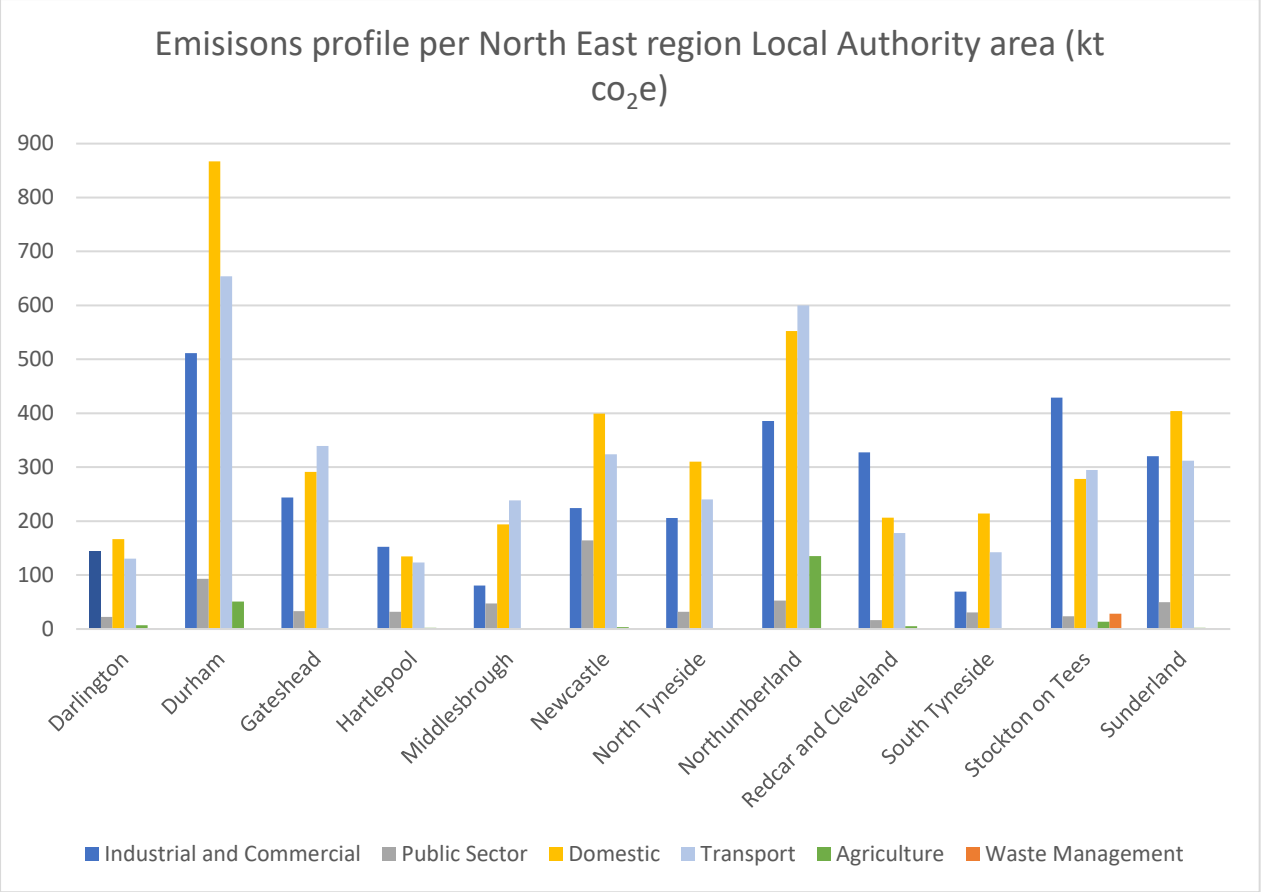
Overall, by 2045 (the net zero target year), delivery against the RRP would require the greatest reductions in emissions from the Domestic sector, followed by the Transport sector and then the Waste sector. The least reductions would be required from the Land Use sector.



From County Durham's emissions profile (which shows emissions within the scope of influence of Local Authorities) it is evident that County Durham's emissions from domestic and transport sources are significantly higher than most other areas in the region.[19] This therefore helps to confirm the SCATTER Pathways findings in that greater reductions in emissions will be required from the domestic and transport sectors to meet net zero.

There are reasons why County Durham's domestic and transport emission are high, in addition to population size. These are provided following the chart. This section also aims to provide context on geographical differences in greenhouse gas emissions across the county.

[19] Based on subset data showing emissions estimates within the scope of influence of Local Authorities



Domestic Emissions

County Durham's domestic emissions are derived from electricity and fuels used to power and heat homes. There are several contributing factors to the county's high domestic emissions. Firstly, the county has significantly more dwellings than other local authority areas in the region. There are 262,735 domestic properties in County Durham and 85,425 more properties than Northumberland which has the next highest number in the region.

County Durham's housing stock also comprises a significantly higher proportion of detached properties (50,630) than other local authority areas. Detached properties typically have higher energy demands. County Durham's detached properties account for almost a quarter (23%) of the regions total detached housing stock and the county has 7,980 more detached properties than Northumberland which has the second highest proportion. Furthermore, a relatively high proportion of County Durham's properties, estimated at 6% are off the gas network and may be reliant on more carbon intensive forms of heating. 5,590 properties are heated by oil only.[20] Please note that tenure type in County Durham is broadly aligned with the regional picture.

Transport Emissions

[20] Housing information sourced from Census 2021 housing datasets: https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/numberofdwellingsbyhousingcharacteristicsinenglandandwales

There are several contributing factors to the county's high transport emissions. Firstly, the county has the highest population in the region which would account for a proportional increase in traffic activity and associated emissions. In 2021, 2.47 billion vehicle miles were travelled on roads in County Durham, 73% of which were by cars or taxis.[21] This is 651 million more miles than that travelled in Northumberland which has the 2nd highest transport emissions.

Like Northumberland, being a large rural county, County Durham also exhibits a high level of car or van ownership with over three quarters (76%) of households with car or van availability.[22] The following table shows the rural/urban split across the region, demonstrating that a higher proportion of County Durham's population live rurally than most other areas in the region.

Table x Where people live, rural and urban split 2021[23]

Local Authority	Population	% Rural	% Urban
County Durham	533,149	44	56
Gateshead	201,950	7	93
Newcastle	306,824	3	97
Northumberland	323,820	45	55
North Tyneside	208,871	5	95
South Tyneside	151,133	0	100
Sunderland	277,846	1	99
North East total	2,003,593	21	79

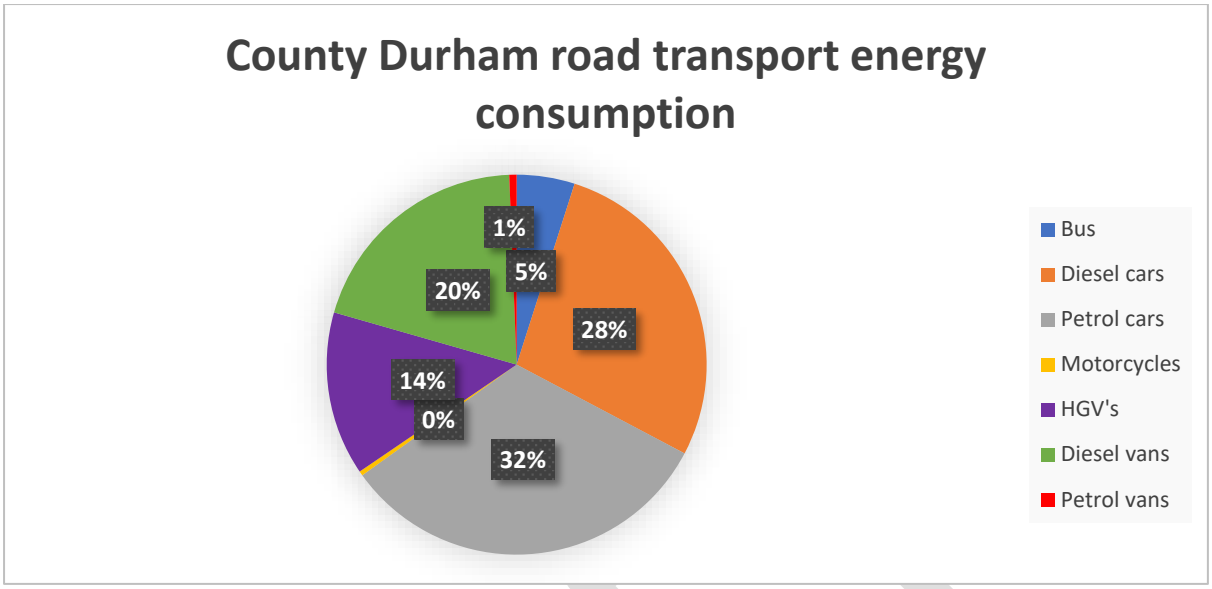
The following pie chart shows that use of petrol cars comprises almost a third of the county's road transport fuel consumption (measured in thousand tonnes of oil equivalent) followed by diesel cars and then diesel vans.[24]

[21] Source: Department for Transport Road Traffic Statistics – local authorities https://roadtraffic.dft.gov.uk/local-authorities/92

[22] Source: 2021 Census Profile for areas in England and Wales – Car or van availability (County Durham) https://www.nomisweb.co.uk/sources/census_2021/report?compare=E06000047

[23] Source: North East Transport Plan – Refresh (Draft) 2023

[24] Source: Department for Energy Security and Net Zero – Sub-national road transport fuel consumption in the UK (2021) https://www.gov.uk/government/statistics/uk-road-transport-energy-consumption-at-regional-and-local-authority-level-2005-to-2021



The number of registered Ultra Low Emission Vehicles (ULEV) was 3,100 in 2022, representing 1% of all registrations in County Durham.[25]

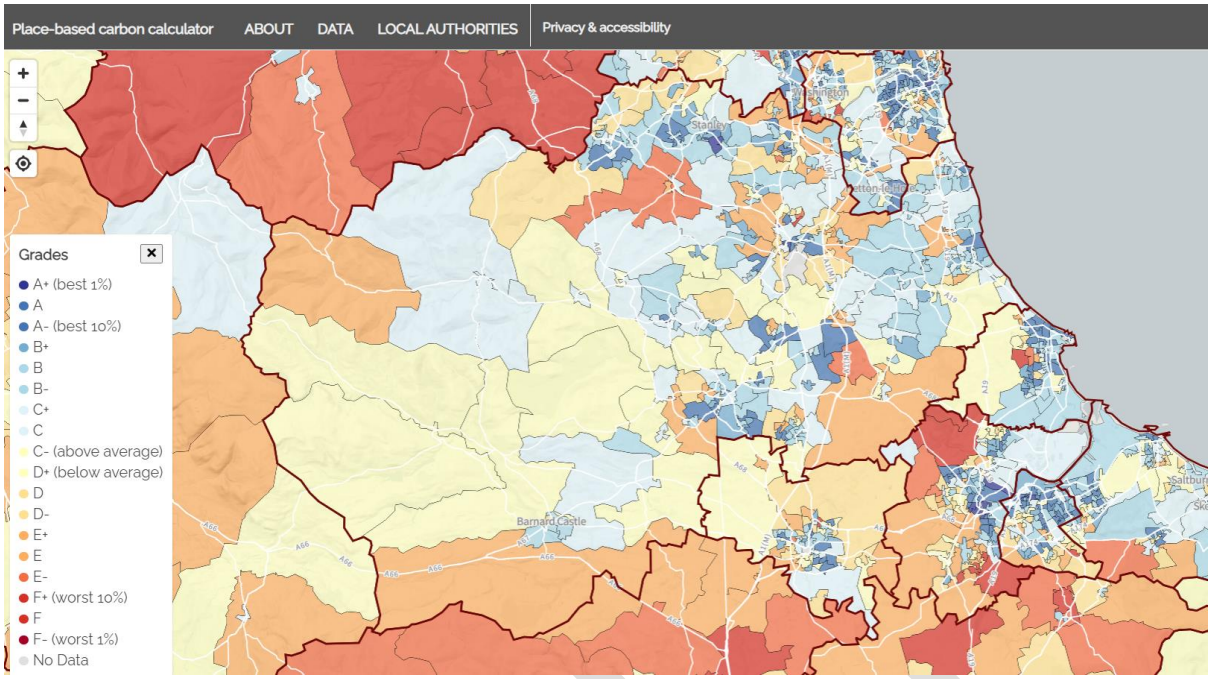
Geographical Distribution of Emissions

The following map shows the per person carbon footprint for every Lower Super Output Area (LSOA) in County Durham, compared with the England average. Darker blue areas on the map denote areas with the least emissions (kg CO_2e per person), whereas darker orange to red areas represent LSOAs with higher emissions.

The map shows that except for some LSOAs the majority of the 'more rural' west of the county falls below average (Grade of D+ and below) compared to the England average. The rest of the county presents a greater mix of better and worse performing LSOA's.[26]

[25] https://www.durhaminsight.info/environment/vehicles/

[26] Morgan, Malcolm, Anable, Jillian, & Lucas, Karen. (2021). A place-based carbon calculator for England. Presented at the 29th Annual GIS Research UK Conference (GISRUK), Cardiff, Wales, UK (Online): Zenodo. http://doi.org/10.5281/zenodo.4665852 https://www.carbon.place/#8/54.118/-1.107



The worst performing LSOA's, (with grades between E and F Plus) are relatively, equally split between classifications of rural and suburban areas. The worst performing rural LSOAs tend to have higher emissions associated with electricity use, off gas heating systems and car driving. Whereas the worst performing suburban areas tend to have higher emissions associated with flights and consumption of goods and services.

Currently, the best performing LSOA (A+ best 1%) in County Durham is Elvet and Gilesgate in Durham City which is classified as a 'Cosmopolitan student neighbourhood' This LSOA exhibits very low emissions in terms of car and van driving and consumption of goods and services. Other areas with low carbon footprints tend to align with areas of higher deprivation, where there may be less car/van ownership and expendable income for flights and other goods/services.

Summary

The proceeding sections have helped to demonstrate that County Durham's net zero and CERP3 milestone targets are unlikely to be met without significant interventions in the domestic and transport sectors over the next three years.

Furthermore, the geographic distribution of emissions helps to show that whilst emissions will need to be reduced across the whole county, specific interventions are likely to be required to target the causes of emissions in the more rural parts of the county.

From a socio-economic perspective, targeted engagement may also be required with more affluent areas to encourage take up of low carbon alternatives and lifestyles. Continuing efforts to reduce levels of deprivation in the county should also ensure sufficient support is given to helping people out of poverty whilst maintaining and incentivising low carbon lifestyles. For example, rather than emissions being low because families are unable to afford turning their heating on as often, low emissions could be maintained through targeted insulation and other energy efficiency measures.

5.4 Potential Interventions

The following chart summarises the pre-defined interventions modelled by the SCATTER tool which inform the Required Reduction Pathway (RRP) and sectoral emissions reduction over the CERP3 period. Further detail is provided in Appendix C. Please note that emissions reductions in each sector are also supported by interventions relating to increasing levels of renewable energy such as solar and onshore wind generation.

The following examples, help to illustrate the scale of the challenge associated with some of the interventions used in the modelling:

Transport

One transport intervention involves reducing total travel distances by a quarter by 2030. 2.7 billion vehicle miles were travelled on roads in County Durham in 2022, with mileage now nearly back to pre-pandemic levels.[27]To contribute towards the intervention, an average reduction of 4% or 100 million less miles per year would be required over the CERP3 period and beyond. To try to put this into context, 600 million less miles were travelled in 2020 compared to 2019 due to Covid 19.

Domestic

One domestic intervention involves a reduction in heating demand and associated energy consumed through the application of inner wall insulation (medium retrofit) and external wall insulation (deep retrofit). The intervention requires 80% of County Durham's housing stock to be retrofitted to a deep level and 10% to a medium level by 2050. Over the CERP3 period this equates to 8,084 homes (deep level) and 1,010 homes (medium level) per year. Where it is not possible to achieve such levels of internal and external wall insulation, the associated average reduction in energy consumed per year and per household would need to be achieved through other means.

Land Use

One land use intervention relates to increasing woodland cover by 24% by 2030. County Durham's woodland cover is currently at 9%[28], so a 24% increase would require around a third of the county to be planted and a 2% increase in woodland cover per year over CERP3. However, the scale of woodland planting in the county really needs to link with the direction set by the forthcoming Local Nature Recovery Strategy. Where it is not possible to achieve the level of woodland planting as per the intervention, the associated emissions reduction would need to be met through other means e.g. peatland restoration, blue carbon measures such as Kelp farming etc.

Summary

The SCATTER tool has provided a useful indication of the type and scale of interventions needed to get the county within reach of net zero by 2045. Partnership working, consumer behaviour, future trends and the future economic and political context, will all play a huge role in the interventions that will be delivered to meet County Durham's net zero targets. However, what is clear, is that a radical step change in action is required over CERP3.

Whilst the CERP is a working document, the actions it supports at the time of adoption include, for example:

[27] https://roadtraffic.dft.gov.uk/local-authorities/92

[28] Carbon dioxide emissions and woodland coverage where you live - Office for National Statistics

- A wide variety of measures linked to reducing travel demand and improving the sustainability of travel and modal shift.
- Domestic building interventions through actions relating to raising awareness on energy efficiency and delivery of retrofit measures relating to boiler repairs, insulation and Energy Company Obligation (ECO) funding. Off gas properties will also be specifically targeted.
- Woodland planting, peatland restoration, regenerative farming practices and local and sustainable food production.
- The improved energy performance of commercial and industrial property owned by Business Durham and the continued provision of energy advice to business through the Business Energy Efficiency Project (BEEP). The CERP also supports the delivery of skills relating to the installation and maintenance of heat pumps. The Horden mine water project could also provide renewable heating for commercial horticulture.
- The development of 4 small wind turbines of around 6kW peak power at the Council's Hackworth Road Deport, potentially generating up to 16MWh per year depending on wind speed.
- Subject to planning consent, the development of 2 12kW turbines at Joint Stocks former landfill site which could generate up to 60MWh per year.
- A further 4.02MW solar capacity with projects across the Council's estate, Jade Business Park and at Joint Stocks and the development of 5 solar car ports.
- Community led renewable energy schemes which may increase generation from a variety of technology types.

6. Themes

Whilst greater reductions in emissions will be required in some sectors compared to others to meet milestones and targets, it is recognised that action will be needed across all sectors (or themes) to achieve net zero emissions. This will also help to ensure a greater realisation of co-benefits of taking action to tackle climate change in County Durham.

Each of the 8 themes below are organised into:

- Context
- Where we are now and where we are aiming to be by 2030 and by 2045;
- Key challenges associated with taking action to reduce emissions;
- Key highlights or achievements to date;
- Associated co-benefits of taking action; and
- Where further help from the Government is required to achieve the reductions required

The Action Plan is also organised by theme and includes practical actions to reduce the Council's and County Durham's emissions. Please note that the action plan is a live, working document.

6.1 Energy and Buildings

Developing a resilient, low carbon electricity supply is critical to delivery of the wider carbon reduction strategy. It underpins the move away from fossil fuel use in heat and transport as well as many everyday activities like cooking, lighting and manufacturing. Key challenges are the generation of electricity from low carbon sources and ensuring a reliable, affordable, supply whenever and wherever it is needed.

Significant improvements in renewable energy technologies over recent years means that sustainable electricity, such as solar PV and wind is cheaper than from fossil fuels and can often have return on investment between 5 and 10 years. Encouraging residents, businesses and organisations to embrace this change can create financial as well as environmental benefits.

The government's Net Zero Strategy: Build Back Greener (2021) seeks to accelerate deployment of low-cost renewable generation, such as wind and solar through the Contracts for Difference scheme and establishes an ambition to fully decarbonise the power system by 2035.

The UK government also published its Heat and buildings Strategy in 2021[29]. This set out the policy direction required in order to decarbonise the UK's buildings. It includes some important statements:

- To meet Net Zero virtually all heat in buildings will need to be decarbonised.

[29] https://www.gov.uk/government/publications/heat-and-buildings-strategy

- The buildings transition presents huge opportunities for jobs, growth and levelling up.
- Fairness and affordability are at the heart of our approach.
- Ultimately, Net Zero will mean gradually, but completely, moving away from burning fossil fuels for heating.

This creates a clear policy direction: to move away from fossil fuels for heating, culminating in the phase out of gas boilers by 2035. There are, however, significant gaps both in how these ambitions can be achieved and how they will be funded. The Climate Change Committee (CCC) published an independent review of the strategy in 2022[30] and identified significant delivery risks against two thirds of the strategy.

Whilst action on many of the issues around sustainable energy and carbon neutral buildings will be led at national or regional level, there is a significant need for local master planning and project delivery.

Where we are now in 2024	Laying foundations for 2030	Laying the foundations for 2045
Electricity from the grid emits 207g carbon dioxide per kWh. Whilst this is decreasing it needs to reduce faster. Work has begun on replacing many gas boilers with low carbon alternatives, especially in the public sector. Significantly more investment is needed in the domestic and commercial sector to move buildings away from gas heating and improve energy efficiency.	Renewable generation increased to meet increasing electric heat and transport demand. Grid is resilient to blackouts through battery storage. Suitable areas for district heating have been identified with some projects in operation. Insulation schemes are widespread and easily accessible for all. The use of heat pumps is steadily increasing following a government supported drive and subsidy scheme. Low Carbon Heat Networks provide heat to communities in County Durham.	Renewable generation and resilient infrastructure is in place for a carbon neutral electricity grid. Solar and wind generation is commonplace and local to where it is needed. Some is community owned. District Heating is commonplace across the County. All gas and fossil fuel heating in homes, public buildings, and businesses has been removed and replaced with affordable low carbon alternatives.

[30] https://www.theccc.org.uk/wp-content/uploads/2022/03/CCC-Independent-Assessment-The-UKs-Heat-and-Buildings-Strategy.pdf

	The Council has achieved Net Zero	

Key Challenges

Whilst renewable electricity can be intermittent it requires a smart and flexible grid to distribute energy reliably. Sustainable forms of battery storage will be essential for this, alongside exploring other flexibility solutions. Please note that extraction of a domestic source of Lithium for batteries, from saline brines with associated geothermal energy is being explored in West Durham by Northern Lithium and Weardale Lithium.[31]

Renewable energy should be generated where it is needed, which requires organisations, individuals, and communities to be able to connect to the grid in the best locations for generation. It must be made easier to obtain planning permission for wind and other forms of renewable energy, whilst in heritage and conservation areas, appropriate regard must be given to the energy efficiency of buildings where the impact on the historic environment can be minimised. Permitted development rights have been extended to boost solar rollout[32].

The reliability of the grid must be improved in terms of timescales and costs, especially when aiming to connect renewable energy systems into the grid or, at the opposite end, in terms of connecting heat pumps or EV charging points.

Suitable areas for District heating must be identified and projects taken forward, where cost effective to do so. All too often projects are delayed because of grid upgrade works. As such we will be developing a strategic, local, long term master plan for energy, which will need to be developed for County Durham alongside heat network zoning.

Decarbonising all buildings will require:

- Targeted and sustainable energy efficiency support for households, businesses and industry including:
    - Insulation for all buildings
    - Building scale renewable energy generation
    - Heat pump installation support and advice with awareness raising
- Support to identify suitable areas for district heat networks and take projects forward, where they are feasible and cost-effective.
- Sustainable, long term funding across, the domestic, business, industrial and domestic sectors

Moving away from gas central heating is the biggest single challenge in terms of decarbonising buildings. In 2021, CO_2 emissions from gas accounted for 37.4% of all emissions in the County, whilst electricity was responsible for 17%. The proportion of

[31] Source: https://weardalelithium.co/at-a-glance/ & https://www.northernlithium.co.uk/
[32] New planning rules to boost solar rollout and slash energy bills - GOV.UK (www.gov.uk)

emissions from heating is increasing as the electricity grid decarbonises, highlighting the importance of moving away from fossil fuel heating.

Large scale sustainable energy projects only fall partly within the influence of the local authority with most being completed by private companies.

Engagement and awareness raising around all aspects of energy efficiency, renewable energy, heat pumps and long term heat and energy systems planning needs to be central to all partner actions.

Image: Heat pumps providing heat to Abbey Leisure centre

Key Highlights

- The Council has commissioned a study to identify up to 5 areas in the County that could be suitable for a heat network, in anticipation of zoning policy being introduced in 2025. To do this work, the Centre for Sustainable Energy, will be working with DCC's partners including private Housing developers, social housing providers, the NHS Trust, Council officers and the university among many others. This work will be completed in 2024.
- We continue to lead work with East Durham Trust to enable work on a new Heat Network in Horden, whilst in Seaham work has begun on the Seaham Garden Village project, the first development to be heated by minewater district heating in the UK.
- In 2023 the Council completed decarbonisation work on many of its buildings, replacing aging gas boilers and installing heat pumps as well as significant energy efficiency improvements.
- A £3m investment by the Council, matched with £5m from European structural funding delivered a nationally significant scheme to transform the old Morrison Busty Depot on Annfield Plain into a fossil fuel free, Low Carbon Depot. Most of the electricity used on site now comes from a new 3MW (5,505 panels) solar PV farm and battery storage facility adjacent to the depot.

- There are 3 operational solar farms in the county providing a capacity of 15MW. Planning permission has been approved for further solar farms which, when operational will provide additional capacity of 277MW.
- The Council continues to deliver projects to remove gas heating from its buildings, replacing them with heat pumps and solar PV. This ensures that both carbon emissions and running costs are reduced. Buildings that are now fossil fuel free include:
    - Annfield Plain Low Carbon Depot
    - Comeleon House – Tanfield Lea
    - Woodland Primary School
    - Abbey Leisure Centre
    - Teesdale Leisure Centre
    - Peterlee Leisure Centre
    - Newton Aycliffe Leisure Centre (hybrid system)
- The Council is maximising funding from government and has successfully won over £4m in Public Sector Decarbonisation Scheme (PSDS) funding in the past 2 years, with further bids submitted in 2023/24.
- We have recently put planning in for our first small scale wind turbines to help power one of our depots.
- We have nearly completely finished our LED street light upgrade, saving thousands of tonnes of CO_2 and millions of pounds in the process.
- The council is working closely with Northern Powergrid to help identify grid constraints and issues and to help with planning for future grid resilience.

Co-benefits

The co-benefits of building and energy decarbonisation are many and varied, including:

- Affordable warmth resulting in improved health (domestic).
- More resilient businesses with reduced fuel expenditure, means potentially more to spend on jobs and growth.
- A robust, low carbon electricity grid will support sustainable transport technologies.
- Insulated buildings with local generation can better withstand extremes of weather especially if projects include battery storage.
- A resilient energy supply will provide communities with protection against some of the impacts of climate change.
- Citizen and community engagement can benefit from improvements in buildings and energy use.

Asks of Government

- Enable Northern Powergrid and other network operators to undertake electricity grid strengthening and, with Ofgem, to urgently address the connections backlog, to ensure that critical decarbonisation projects can go forward in a timely manner.

- Support community renewable projects through the Local Electricity Bill, so that electricity can be generated close to where it is needed.
- Encourage network operators to facilitate smaller requests for grid connection so that they can become less cumbersome/bureaucratic.
- Whilst the government has updated National Planning policy to make it easier for on-shore wind to go ahead, remaining restrictions should be removed so that wind development is treated in the same way as any other renewable energy development by the planning system.
- Give greater ability for regional/local authorities to set higher standards for new developments to reduce energy demand.
- Provide adequate support to rural areas to ensure the electricity grid is fit for the purpose of decarbonising more remote towns and villages
- Urgently move away from the current annual competitive funding regime, for building decarbonisation and create a much increased and sustainable funding stream, across all sectors, based on CO_2 reduction not on who can get an application submitted fastest.
- The cost of living crisis means that energy efficiency has never been a more cost effective tool. Government must provide the funding and tools to enable a quicker roll out of grants such as ECO.
- Provide sustainability and clarity across the energy and buildings policy landscape.
- Set up a regulatory framework to support the roll out of geothermal energy.
- Not to roll back the Future Homes and Future Buildings Standard.
- Some rural proofing of off grid development to ensure such areas are able to switch to lower carbon heating

Image: Solar Farm at Annfield Plain. Part of the Low Carbon Depot

6.2 Transport and Connectivity

Transport is a significant contributor to high carbon dioxide emissions and to air pollution through nitrogen oxide emissions. Transport in County Durham accounted for one third (30%) of the total carbon footprint of the county in 2021. In 2021, transport was the largest contributor to carbon dioxide emissions of any sector in England, contributing 107.5 million tonnes in 2021[33].

This section explores how the Council will support zero carbon travel by preventing unnecessary trips, through better broadband and online services; encouraging active travel by investing in walking, wheeling, and cycling; investing in infrastructure to facilitate more public and shared transport; and by implementing the correct infrastructure to support the transition to zero emission vehicles.

It should be noted that transport strategy will be set regionally through the North East Combined Authority (2024) but informed by officers working on behalf of Transport North East, Nexus and the seven Local Authorities, working in partnership with private and public transport operators. The Council works in partnership with these organisations to help improve local transport and implement strategies and policies for the travelling public. Please also note that the Government has announced that £73m has been allocated to the North East l Combined Authority (NECA) for local transport improvements in County Durham for the years 2025/26 and 2026/27 from the Local Transport Fund.

Where we are now in 2024	Laying foundations for 2030	Laying the foundations for 2045
EV charging points continue to be installed to help facilitate access for all, and all new dwellings must have an EV charging point installed. Superfast broadband services are available to the vast majority of households. There has been investment in public transport and funding bids for Zero emission Vehicles, but encouraging people to go back on buses remains a challenge.	Much improved infrastructure for cycling and walking through 11 adopted Local Cycling and Walking Infrastructure Plans, whilst EV charging is ubiquitous and fair. Much improved, cleaner, and affordable public transport. The Parking and Accessibility Supplementary Planning Document has also been adopted, which sets out standards for EV car and cycle parking. Both the Local Cycling and Walking Infrastructure Plans and public transport availability will be considered in all planning	Excellent affordable, frequent, accessible and zero carbon public transport, including in our rural areas. Cycling and walking is normal, particularly for journeys under 5 miles. All vehicles are ultra-low emission. Individual car ownership is less common.

[33] https://www.transportnortheast.gov.uk/wp-content/uploads/2023/06/Active-Travel-Strategy-June-23-1.pdf (pg.23)

	applications in accordance with the county Durham Plan.	

Key Challenges

Cultural shift

A key challenge for meeting net zero targets is influencing user behaviour and encouraging modal shift from use of the private car to more sustainable modes of travel. Use of the private car has increased post-pandemic whilst public transport use has not recovered post-pandemic, with bus patronage 20% below 2019 levels in the North East[34].

Affordability and access

Public transport in rural areas is infrequent, indirect, and inaccessible[35]. An affordable business model for public transport in rural areas is difficult to achieve due to lower populations and high operating transport costs, but it is important to secure in a County where 25% of residents that live in rural areas (2011 census data) do not have access to a car, and those that do, cannot afford electric cars. This is a significant issue for County Durham with 90% of the total area of the county classed as rural [36].

Durham has a comprehensive demand responsive transport but services such as this are historically unattractive to bus operators because of low population density and thus low patronage[37]. Subsequently, the business model for demand responsive transport will need to be creatively re-designed to ensure that it compliments traditional fixed route services and creates better value for money in the future.

Access in terms of public transport reaching employment sites is another challenge. Outlined in Durham's Inclusive Economic Strategy, there is a pilot 'on-demand' bus service to Newton Aycliffe Business Park which aims to provide a solution to this challenge.

Electric vehicle charge point rollout, grid capacity and green buses

For the transition to electric vehicles, a key challenge is the type of housing found in County Durham, with 40% of streets dominated by terraced housing. Subsequently, challenges arise in terms of enabling on street charging cables and deciding whether this the most suitable approach for such neighbourhoods, whilst ensuring that parking issues do not arise.

The average age of the fleet is approximately 8.9 years[38], which is substantially higher than the UK average of 8 years, which provides a challenge for moving towards sustainable

[34] Measured at the end of March 2022 https://www.transportnortheast.gov.uk/wp-content/uploads/2023/05/Making-The-Right-Travel-Choice_Strategy-FINAL.pdf

[35] https://www.transportxtra.com/publications/local-transport-today/news/73812/don-t-people-who-live-in-rural-areas-deserve-a-bus-service-/

[36] https://www.durham.gov.uk/media/31969/Housing-Strategy-Rural-Proofing-Report/pdf/HousingStrategyRuralProofingReport.pdf?m=637147018409330000#:~:text=The%20County%20covers%20an%20area,(222%2C600ha)%20is%20rural.

[37] https://www.transportnortheast.gov.uk/wp-content/uploads/2023/04/TNE-EP-Plan-21-March-2023.pdf page 12

[38] TNE-EP-Plan-21-March-2023.pdf (transportnortheast.gov.uk)

transport and reducing emissions. While larger commercial bus operators are benefitting from government funding to switch to electric buses, smaller local bus and coach operators, who run vital services such as home to school transport, cannot afford electric vehicles.

A challenge for the Council's transition to a zero-emission fleet is the expense of these vehicles, particularly larger trucks such as refuse collection vehicles, in conjunction with the lack of national government funding alongside the charging infrastructure from larger vehicles.

Image: Electric Vehicle Charging Point

Key Highlights

Broadband

More than 4,000 Teesdale homes and businesses are set to get access to full fibre, gigabit-capable broadband following a Project Gigabit contract, providing a significant leap in both speed and service reliability for some of our most rural communities. Gigabit broadband offers lightning-fast internet speeds in excess of 1,000 Megabits per second (Mbps). For comparison, the definition of Superfast broadband is just 30 Mbps.

Active Travel

Local Cycling and Walking Infrastructure Plans have been completed for 11 main towns. These have now been adopted by the Council and can now help direct investment for better walking and cycling infrastructure in these towns. The Local Cycling and Walking Infrastructure Plans are also referenced in the adopted County Durham Plan as a tool to be used when designing new development within the defined areas which have Local Cycling and Walking Infrastructure Plans.

The County's 'Our Physical Activity Strategy' and the Rights of Way Improvement Plan 4 have now been adopted. These strategies aim to promote a culture of moving for all who live, work, study in and visit County Durham to help improve physical and mental health. The strategies aims have additional benefits, one of which is that increasing active travel and replacing car-based trips with walking and cycling helps reduce the impact of carbon emissions on the county[39]

Buses

Completion of Durham City's bus station as the county's main bus interchange. This will make using buses in and out of Durham City more attractive for passengers and improve the offer of sustainable transport in the county. The bus station includes environmental impact mitigations including green walls, water harvesting and photovoltaics for energy productions.

The Bus Service Improvement Plan has further enabled the implementation of an all day, multi-operator £4 ticket for County Durham, namely 'Durham Day Rover'; and the £2 capped bus fare is to continue until December 2024. These fare improvements have been funded by the region's allocation of £163.5m (one of the highest allocations in England) from central government[40]. This will help make public transport more affordable and competitive with private car use. [41].

Zero Emission Vehicles

The Scaling On-Street Charging Infrastructure project led to the installation of 153 Electric Vehicle Charging Point sockets in residential and rural areas of County Durham. This project was Council led, in partnership with social enterprise partners Cybermoor and Charge Point operator MER. In a nationally significant development the Council has won £4.35 million from the LEVI Pilot scheme to deliver 250 further chargepoints using an innovative approach.

In addition, two new rapid Electric Vehicle charging hubs have opened at Barnard Castle and Newton Aycliffe after partnership work between the Council and commercial operator FastNed. These charging hubs can deliver long distance charging in around 15 minutes and can support long journeys by zero emission vehicles on the strategic road network.

Co-benefits

[39] https://www.durham.gov.uk/media/42499/Draft-Moving-Together-Strategy-for-County-Durham/pdf/MovingTogetherInCountyDurhamStrategy.pdf?m=638237111489500000#:~:text=Moving%20Together%20in%20County%20Durham%20is%20a%20framework%20for%20partnerships,and%20physical%20health%20and%20wellbeing

[40] https://www.transportnortheast.gov.uk/wp-content/uploads/2023/04/TNE-EP-Plan-21-March-2023.pdf

Reducing carbon emissions emitted by transport positively benefits air pollution, reducing nitrogen oxide, which in turn, has significant environmental benefits in helping reach net zero targets, as well as multiple health benefits.

Acting on climate change through promoting a modal shift to sustainable travel also results in improved physical and mental health, ensuring people can live longer and more social lives. By travelling more sustainably, the local economy is boosted by a rise in employment and socialisation, and it can also reduce pressure on the NHS.

Gigabit broadband can provide a wealth of benefits ranging from facilitating homeworking, empowering local businesses to thrive in the digital economy, and enhancing educational opportunities with seamless online learning experiences. Gigabit broadband can reshape the landscape of rural communities, welcoming in a new era of connectivity, attracting start-up businesses and unlocking a multitude of social and economic opportunities.

Asks of Government

- Local authorities and their partners need 5-year medium-term funding settlements for buses.
- Bus operators, including smaller local operators, need fiscal support to transition to zero emission buses which use 100% renewable energy.
- Financial support to allow Local Authorities to build Park and Ride at rail and bus stations and heavily used bus stops.
- The new proposed Ferryhill station should connect to the rest of the region including connectivity along the Stillington Line.
- The Leamside line should be delivered and include stations at Sedgefield, Belmont, Bowburn, and Fencehouses. This could also open capacity on the Durham Coast Line, East Coast Main Line and give potential to new stations.
- A better plan from central government is required on how freight can make the transition to zero carbon freight.
- Local authorities to be able to influence higher prices in private car parks to encourage modal switch. There is a difference in the pricing of parking provisions in towns and cities and between local authorities which provides a barrier to encouraging modal shift from private car to sustainable transport.
- Significant Investment in the electricity grid to support charging for Zero Emission Vehicles including haulage and public transport.
- Not renege on pledges for zero emission HGVs by 2040 to enable all road vehicles to be zero emissions within the next two decades.

Image – People cycling

6.3 Business, Green Economy and Skills

23.5% of County Durham's emissions come from the commercial and industrial sectors and whilst there has been a significant reduction in energy consumption in this sector since 1990 there is still more work to be done as much of this decrease has been through closures of manufacturing industries.

County Durham has a well-established, resilient, and growing green economy, which refers to activities from across different sectors which contribute to achieving net zero, and/or improving the environment. A report commissioned by the council found that in 2021/2, the green economy was worth around £1.7 billion in sales, employing over 11,000 people. The top performing green sectors are wind (worth £226min sales), alternative fuels (worth £210m in sales), and alternative fuel vehicles (worth £177m in sales). Though the green economy in the county is growing, there is a need to accelerate this growth for example through re-skilling, to ensure that those who currently rely on carbon intensive industries for employment, are not disadvantaged by the net zero transition and can use their transferable skills in green roles.

There are both national and local policy drivers, pushing forward progress in this area. Nationally, the Government's Net Zero Strategy describes just how important green skills are in the net zero transition, and outlines actions needed on green investment, jobs, skills and industries and empowering businesses to make green choices. Locally, the Inclusive Economic Strategy is developing projects, along with partners, to support the sustainable growth of the economy in County Durham, planet is woven throughout the strategy.

Green skills are needed to facilitate the net zero transition. The North East Local Skills Improvement Project seeks to enable sustainable economic growth through a workforce which is Productive, Sustainable, Resilient, and Inclusive, contributing to the achievement of net zero by ensuring the workforce is ready.

Feedback indicates that most people feel it is important to assist small businesses to reduce their environmental impact, and that this is best done by advice and grants. However many residents feel they do not have they have the necessary skills and training to work in a greener economy, therefore skills and business support should be a priority.

Where we are now in 2024	Laying foundations for 2030	Laying the foundations for 2045
We continue to work with partners such as Business Durham, for example through the Durham Business Growth Programme to support energy efficiency work across businesses in the County.	Business have developed plans to decarbonise and are actively sharing learning and putting measures in place to reduce energy consumption and increase locally generated power. A partnership approach is	All businesses and industry will have implemented a decarbonisation plan and most will have achieved net zero emissions, with offsetting in place where

	enabling a growth in local green technologies and skills. The green economy has grown and will continue to do so. The ongoing delivery of the IES will promote good business practices which includes businesses considering their environmental and social impacts.	emissions are unavoidable.

Key Challenges

Grid availability and upgrades being charged directly to businesses hampers many energy projects. Awareness of climate change in business remains low on businesses priority list, though this is changing with developing regulation around mandatory carbon reporting. There is a need to ensure that business see the green economy as an opportunity and invest in green skills and training for staff.

The energy crisis has significantly impacted businesses in the County, and rising costs have led to an increased awareness of energy efficiency measures such as turning down flow temperature of a boiler and swapping out older bulbs for LEDs. However, businesses are struggling financially and therefore can find it difficult to raise capital to cover the upfront costs of such upgrades, therefore grant and loan support is needed.

Digitalisation, electrification, automation, and decarbonisation are creating highly skilled jobs across County Durham and skill requirements need to be anticipated and prioritised to enable local investment opportunities and realise improved productivity and regional growth. Green skills availability is limited and require investment.

Whilst green industries are flourishing in County Durham, so are carbon intensive industries such as manufacturing and home delivery services which can be energy and resource intensive, contributing to carbon emission increases. Therefore, it is important that support is targeted at such areas of the economy.

Key Highlights

- County Durham's green economy is economically significant, at 16%, accounting for a significantly higher proportion of the County's GDP than the UK average of 11%, and the wider North East at 14%.
- By 2021/22, the green economy in County Durham saw 94.8% recovery from the economic shock of the Covid-19 pandemic, in line with the UK average of 94.7%; this shows resilience.
- BEEP2 has come to an end, as EU funding has ended, having helped over 500 SMEs with energy advice and support since 2019.
- DCC's Try Before You Buy scheme which gives businesses the chance to try out electric vans for free, has been very successful and 4 vans are currently on the road.

- The North East is set to benefit from a huge skills training boost, as colleges and universities share a £3.6 million pot through the Local Skills Improvement Fund (LSIF), focused on the skills requirements of businesses located in Sunderland, Gateshead, South Tyneside and County Durham identified in the North East Local Skills Improvement Plan (NELSIP). East Durham College will lead on the North East LSIF and will be supported by several other colleges, independent training providers and one university in the region.
- £7.4million has been awarded to expand Skills Bootcamps in the North East. The funding has been awarded to the North East Local Enterprise Partnership (North East LEP) by the Department for Education, following the successful delivery of the region's Green Skills Bootcamps in 2022-23, which saw nearly 800 people aged 19 and over benefit from training.
- The Department for Education has confirmed it will seek to align the NELSIP area with the new North East Combined Authority (NECA) area within the first year (2024) of NECA assuming devolved authority of the Adult Education Budget.
- Durham gained a score of 42% in 2023 and an action plan of activity aims to improve this score year on year. The Global Destination Sustainability Index aligns with the UN Sustainable Development Goals to evaluation a destination's sustainability performance across four key areas (environmental, social, suppler and destination management); Durham achieved 42 % in 2023. There is funding available for 3 years of the index (2023-2025) via the North East Destination Development Pilot.
- Net Zero Webinar series attended by 227 people over 6 events:
    - Introduction to CERP2
    - Decarbonising buildings
    - Reducing energy bills through behavioural change and energy efficiency
    - Green space management
    - How to organise a low carbon event
    - funding your net zero transition

Co-benefits

By creating an environment that nurtures innovation, we can support organisations to develop ground-breaking technologies which have the potential to accelerate progress toward net zero, for example 3rd generation solar cells.

Durham's visitor economy contributed £1 billion to the wider economy for the first time in 2022. 17.9 million people visited the county, spending a record-breaking £1.04 billion. This is an increase of 25.6 per cent on 2021 and 8.76 per cent on 2019 and demonstrates how the county's visitor economy is back on track following the coronavirus pandemic. By taking action to improve Durham's Destination Sustainability Movement score, by tackling issues around Climate, Energy & Emissions, Resources, Air Quality, Water and so on, we can attract more visitors to the county by advertising our green credentials and boost our economy securing more jobs in the tourism industry.

Asks of Government

- Make available funding in the form of grants and low interest loans for businesses to decarbonise
- Continue to work with anchor organisations to develop local place-based skills to facilitate the transition and scale up work already in place such as the Green Skills Bootcamps and Local Skills Improvement Fund.
- Clarify the building standards for existing and new build business premises including requirements for EPC improvements.

Image of project with descriptive title

6.4 Waste and Resources

The Waste and Resources section considers the impacts of broader resource use on climate change- What we buy and use, how we dispose of things, and how that affects the environment. The public sector across County Durham procures a significant volume of goods and services in delivering its remit and whilst this has quite a significant carbon impact, it also provides the opportunity to make savings, to lead by example, and demonstrate low carbon service delivery.

Moving away from a throw away society and taking whole life costs and disposal factors into account in purchasing decisions will improve the underlying carbon impact of the services we deliver.

Ensuring the council follows the waste hierarchy as closely as possible when we dispose of both our own and municipal waste has many benefits alongside carbon reduction, but it is a complicated industry and leadership needs to be driven from a national level both in setting out what is expected, and supporting the changes required.

More than most themes, this one is expansive and challenging to frame solely in the context of formal carbon footprints and climate change as there can be wider impacts, conflicting priorities, uncertainties of the carbon impacts and the benefits of a decision may be outside of the measures we are reporting on. In addition, many of the settings in which these sectors operate are decided at a national level, which directs strategic action and timescales.

Where we are now in 2022	Laying foundations for 2030	Laying the foundations for 2045
252,114 tonnes of waste were collected and processed by the council in 2022/23. Over 90% is diverted from landfill and 37% of this was recycled. Carbon has been factored into a number of major contracts and is being embedded into Social Value considerations in procurement exercises.	Carbon monitoring further embedded into contracts. Scope 3 emissions more clearly defined. Successfully incorporated new requirements and opportunities for waste management such as food waste collections. The foundations or a more circular economy are being built and more products are reused or recycled.	Build a circular economy and carbon neutral supply chain centred around sustainable materials, re-use and recycling.

Early investigations taking place into expanding Scope 3 reporting.	Significant progress made towards developing a modern EfW facility with electricity and heat generation, and pursuing opportunities for Carbon Capture, Utilisation and Storage to dispose of residual municipal solid waste.	

Key Challenges

Making changes to the way things are produced to ensure the use of sustainable materials that can be reused or recycled as much as possible should be a key consideration. This requires following the waste hierarchy, reducing the amount of contamination in the waste being sent for recycling and especially minimising food waste, which accounts for 30% of municipal solid waste in County Durham. Advances in technology should be matched with opportunities to embed them in long term contracts and processes. Working effectively with partners and suppliers to maximise carbon savings and include environmental benefits in contracts.

Key Highlights

- New Waste Haulage contract signed with ambition to reduce carbon over the lifetime of the contract.
- In house composting facility now established.
- Expansion of services through activities like WEEE recycling at community hubs and medical equipment take back scheme at HWRCs.
- Carbon and environmental actions under Themes Outcomes and Measures (TOMs) becoming more popular. Over £250,000 of commitments to carbon and environmental measures.
- Additional Social Value contractual requirements being tracked and delivered.
- Investors in the Environment Green level accreditation for the council.
- Electrical recycling –About 2,700 computers used by the council have been sent for re-use or recycling in the past year, with 400 being used by local schools.

Co-benefits

There are significant co-benefits of taking action in this theme as it cuts across many other aspects of climate change and harder to measure impacts that doesn't neatly fit into other areas. By factoring in carbon into procurement, it provides a pathway to reducing carbon across our operations and in the private sector supply chain.

As we evolve our investigations into Scope 3 emissions from the supply chain and external factors we will have a better understanding of the overall impact of our work.

It also helps influence and reduce emissions that take place outside the council and county. These are difficult to measure, but when considering the bigger picture, it does not matter

where the carbon is saved so are important to influence where we can. For example, improving recycling of waste will mean lower emissions from material extraction in other parts of the world.

Asks of Government

- Improved harmonisation of procurement requirements and standards across Government
- Clear path for implementation of Environment Act
- Adequate funding for implementation of additional waste processing requirements for local authorities.

Image: Household Waste Recycling Centre

6.5 Agriculture and Sustainable Food Production

The global food system accounts for approximately 30 % of greenhouse gases released year on year, which contribute directly to climate change and to reach net zero we must act.

To reduce emissions associated with the food we eat, we must work with partners to develop; local food growing opportunities and markets; simple communications that will encourage the consumption of "less, better and local" meat; support farmers and partners such as the NFU to promote and adopt regenerative practises and support research into soil health and its ability to sequester carbon.

Emissions from fossil fuel-based nitrogen fertilisers contribute to climate change and have environmental impacts such as poor river water quality. The farming system is reliant on fossil fuel derived fertilisers which comes at a huge cost to nature, climate and human health[42].

Feedback received indicates that stakeholders feel that it's important that connections with the farming community large rural estates should be strengthened to tackle climate change; the most common method of support suggested to achieve this is to raise awareness of schemes and initiatives to help farmers to switch to less intensive farming practices such as organic and regenerative farming. Nearly nine in ten (87%) respondents thought it important or very important to provide more opportunities for local food production in County Durham, such as through allotments, community agriculture schemes or garden share projects and over seven (71%) in ten felt that carbon impact rating on food labelling would be useful or very useful.

Where we are now in 2022	Laying foundations for 2030	Laying the foundations for 2045
High quality food is grown, reared, and produced in County Durham, but does not always end up on plates in restaurants and homes in the County.	Farmland will deliver a range of public goods, including high quality food production, Food produced in County Durham will be championed. Changing land use practices will enhance soil health	Farmland will deliver a range of public goods, including high quality food production. Residents will have access to local healthy low carbon food.

Key Challenges

Food is a multifaceted topic that impacts on almost every area of life, it is of vital importance to every person, making food production and policymaking intrinsically complex and contested; diet is also a very personal choice, and many have opposing views.

[42] https://assets.publishing.service.gov.uk/media/639aeb81e90e0721889bbf2f/chief-medical-officers-annual-report-air-pollution-dec-2022.pdf

Adopting a low carbon diet can be difficult due to the many factors contributing to their sustainability; for example, where the food was grown/reared, how it was processed and packaged, and how it arrives on our plates.

Multiple policy areas within the Council, and national Government focus on food as a topic with slightly different focuses, we must ensure that our thinking and policy is joined up and not contradictory but complementary to support the production and consumption of low carbon, healthy food in County Durham and support local food growers. Regional good food Local benchmarking and audit tools will be used to identify policy gaps and drive local development.

With the loss of EU subsidies, farmers are struggling financially, and adopting regenerative practises can be seen as a risk that has too high a cost currently, however, this method of farming can be cheaper due to the fewer inputs (i.e., fertiliser etc).

Key Highlights

- The Council launched two fully funded consecutive Food for the Planet Campaigns trialling a £1 vegetarian discount in Council canteens, a low carbon pumpkin patch event, a carbon costed restaurant night and as a result was the chosen destination of the launch for National Vegetarian Week 2023. This project is also bringing together anchor organisations such as the Bayberry Hollow café, NHS Trust and Durham University to carbon rate their menus.
- Over the past two years, the Low Carbon Economy Team has developed strategic partnerships with local farming colleges and networks such as the National Farmers Union, to support the update of regenerative practises.
- Food Durham, the County Durham Food partnership, has received funding to appoint a County Durham Food Co-ordinator who is now in post. The funding was also awarded, by the National Lottery, to fund family and community training, networking events and to develop marketing and communications. Food Durham's remit improving and campaigning food fairness and citizenship, food health and wellbeing, food economy, food climate and nature.
- Durham County Council is working with partners to develop a minewater project in Horden, which aims to use minewater heat to heat a horticultural project such as a greenhouse.
- Durham County Council Public health have conducted a full review of County Durham's approach to healthy weight across the system. The Health and Wellbeing Board support recommendations to improve the food environment and strive to work with partners to make sustainable healthy food accessible to all.

Co-benefits

Regenerative agriculture, which reduces the need for fertilisers and other inputs by prioritising soil health through crop and livestock rotation. Protecting and improving soil health by adopting regenerative practises and minimising the use of fossil-fuel derived fertilisers, can improve our resilience to storms as healthy soil can absorb and retain more water, preventing it from washing up in our towns and cities.

Soil has an essential role to play in net zero. Soil is a living organism and in healthy conditions it feeds and maintains itself and can store carbon too. All terrestrial ecosystems rely on soil condition for their health but 25% of global soils are now degraded and damaged.

By reducing the number of fertilisers used, we can also reduce the volume of these chemicals being washed into our water ways, improving water quality of our rivers and helping ecosystems recover.

Agriculture and the use of nitrogen-based fertilisers can contribute to air pollution. Ammonia is the most important air pollutant emitted from agriculture. In the Chief Medical Officer's Annual report, in 2022, air pollutants except ammonia were decreasing rapidly. As large parts of the county are rural, the phasing out of nitrogen-based fertilisers and the adoption of more direct methods of ammonia-based fertiliser spreading, can significantly reduce emissions, and can contribute to a reduced need for chemical fertiliser. These actions can improve air quality and protect vulnerable populations from poor air quality related illness and disease. This further supports the introduction of regenerative practises to tackle climate change and improve air quality.

By buying local, to reduce food miles, this can support local farming businesses, so money spent on food in County Durham stays here to boost the county's economy and also helping to improve food security.

The UK Health Security Agency (UKHSA) stated in a recent report that antimicrobial resistance (AMR) is an urgent global threat, and overuse of antibiotic medications is a key driver of infection resistance. Animal management and agriculture at present is one of the largest contributors to AMR and therefore less and better meat will reduce antibiotic use and reduce the prevalence of resistance.

Asks of Government

- Commit to the "less, better and local meat" campaign.
- In line with the Climate Change Committee's views, describe how farmland can deliver action to drive down emissions at the scale or pace required to achieve reductions in line with UK's Net Zero pathway
- Introduce Controls to ammonia-based fertiliser spreading
- Set a target for reducing fossil fuel-based fertilisers and other additives.
- Support farmers to transition away from fossil fuel based fertilisers toward regenerative practises

MAGE 1: photo of Pumpkin Pie and carbon rated recipe developed by Bishop Auckland College catering Students for the Pumpkin patch event held at Big Chefs Little Chefs CIC as part of the first Food for the Planet Campaign.

IMAGE 2: The corporate Director for Neighbourhoods & Climate Change Alan Patrickson (back row, second from left) with representatives of REfUSE, the Vegetarian Society, My Emissions & Jordan Pomerance (second from right)

6.6 Natural Environment

Climate change and biodiversity loss are inextricably linked, and it is recognised that both the climate emergency and ecological emergency need to be addressed in an integrated way. Whilst County Durham's unique habitats and species are seriously threatened by climate change, the natural environment has a pivotal role to play in meeting net zero. Our county is fortunate to host a diverse range of ecosystems, from peatlands to the coast, which when healthy, can sequester and store significant amounts of carbon in soils, sediments and vegetation. In addition, our natural environment can help us to adapt to the impacts of climate change by protecting communities from flooding and helping to cool environments.

The Environment Act 2021 aims to improve the natural environment and establishes several long term, legally binding targets. Those which will directly or indirectly help to tackle climate change and biodiversity loss together include[43]:

- Halt the decline in the abundance of species by 2030 and increase species abundance by 10% by 2042;
- In excess of 500,000 ha of a range of wildlife - rich habitats are to be restored or created by 31st Dec 2042;
- Increase tree and woodland cover to 16.5% of total land area in England by 2050; and
- Cut exposure by 35% to the most harmful air pollutant to human health (PM2.5) by 2040

Biodiversity Net Gain (BNG) has also become mandatory under the Environment Act. The majority of new development will be required to deliver a minimum BNG of 10% which will be secured for a 30 year period. Where off-site BNG is to be delivered there could be an opportunity for the Council as a land owner to sell units on its land which will help to deliver nature recovery and could have benefits for carbon reduction.

Preparing a Local Nature Recovery Strategy is also a statutory requirement under the Environment Act and a LNRS will be prepared for County Durham setting out how and where to recover nature. The England Peat Action Plan also includes a commitment to restore 35,000 hectares of peatland by 2025.[44]

Where we are now in 2024	Laying foundations for 2030	Laying the foundations for 2045
County Durham's woodland removes and stores 130.15kt of carbon from the atmosphere.	The state of the county's natural environment will be fully understood. All degraded areas of peatland will	County Durham's ecosystems will be thriving and

[43] Please see: The Environmental Targets Regulations 2023
[44] Please see: England Peat Action Plan (2021)

However, emissions predominantly associated with arable land and damaged peatland releases 76.7kt of carbon meaning that County Durham's natural environment removes and stores 53.45kt carbon emissions overall. This represents approximately 2% of County Durham's total carbon footprint and could be improved in tandem with aiding nature recovery. For example, woodland cover in County Durham (8.5%) is below the national average (13%) and our peatland comprises some of the most damaged in the North Pennines area.[45]	either be in recovery or restored. Our woodland cover will improve, whilst ensuring that the right trees are planted in the right place. Restoration of our marine ecosystems and blue carbon research will continue and best practice farming methods which improve soil carbon storage and help nature (e.g., regenerative farming) will be widely shared within County Durham's farming community. Public awareness of the value of nature-based solutions will be raised. County Durham's natural environment will sequester and store significantly more carbon than in 2024.	resilient in the face of climate extremes. Opportunities to aid nature recovery and maximise carbon sequestration and storage will have been realised.

Key Challenges

Greater knowledge of the state of County Durham's natural environment and opportunities for improvement is needed to effectively align nature-based, carbon storage solutions with nature recovery efforts. Evidence gaps also remain in relation to the carbon sequestration and storage values of some habitats, preventing their official inclusion within the UK's greenhouse gas inventory. The likely value of future carbon markets acts as a barrier to timely peatland restoration work and opposition to changes in land use and land use management (e.g. mowing amenity grassland less frequently) may need to be overcome.

Key Highlights

- 1,228 hectares of peatland were restored in County Durham in 2022, surpassing that planned for the CERP2 period (2022/24).
- The Durham Woodland Creation project is more than halfway through completion with 43ha of new woodland planted representing 61% of the total project.
- 42 hectares of amenity grown grassland has been converted to meadows in County Durham since 2020, reducing fuel used by mowing and increasing biodiversity.
- Research on Kelp in the north east, including the health of habitats and their carbon storage potential is nearing completion.

Co-benefits

Acting on this theme will also:

[45] Source: Carbon Dioxide Emissions and Woodland Coverage Where You Live

- Help us to adapt to the impacts of climate change as more and healthier habitats increase water absorption, (reducing flood risk) and provide cooling through shading/shelter etc.
- Reduce levels of air pollution and associated health impacts.
- Increase access to nature and associated health and wellbeing benefits.
- Improve soil health, helping to improve crop yields and sustain future harvests.
- Through activities such as tree planting, provide a 'hands on' opportunity to engage with schools and communities on climate change and the solutions to it.
- Provide opportunities to support and diversify rural, conservation and land-based business, create jobs and develop skills.
- Provide opportunities for organisations to offset their residual carbon emissions to meet net zero targets.
- Improve the attractiveness of the county as a place to live, work, learn and visit.

Asks of Government

- Provide guidance to landowners to help them make informed choices about committing land to the voluntary carbon offset market compared to the Environmental Land Management scheme etc.
- Develop market products to incentivise landowners to restore peatland and overcome existing barriers associated with registering land to the UK Peatland Code.
- Support universities and research organisations to close the evidence gaps on the contribution of habitats to net zero.

Image showing peatland restoration underway and planted with plug plants in Teesdale (courtesy of the North Pennines AONB Peatland Programme)

Image showing a Cottongrass plug before planting (courtesy of the North Pennines AONB Peatland Programme)

6.7 Adaptation

Adapting to or being more resilient to extreme weather events is now more crucial than ever before as we respond to not only the challenges facing County Durham, but also the knock on effects from climate extremes elsewhere in the UK and across the world. We need to adapt structures, systems and infrastructure, to ensure we can cope in a County with more extremes.

We are already seeing climate impacts across the globe, with observed increases in the frequency and intensity of heatwaves, flooding, drought and wildfires[46]. In County Durham, just in the last 2 years, we have suffered from Storm Arwen, flooding instances from storm Ciaran and Babet, whilst globally, 2023 is the warmest year ever recorded with over 200 dates recorded with record high temperatures[47].

Vulnerable groups of people such as those affected by poverty, poor health and disabilities will tend to experience disproportionate negative effects from extreme weather and climate impacts such as flooding[48].

Locally we engage with partners from across a wide range of sectors through the Local Resilience Forum (LRF) including the emergency services, the NHS and the Environment Agency. These are category one responders who will direct aid to those most in need during a critical event, and who also aim to help communities become more resilient.

The Government released their third National Adaptation Programme (NAP3) in July 2023 which sets out the actions that both government and others will need to take from 2023-2028. The programme brings together policies and actions to address the risks and opportunities arising from climate change identified in the third Climate Change Risk Assessment (CCRA3).

Where we are now in 2022	Laying foundations for 2030	Laying the foundations for 2045
Partners work together to identify and address climate risks especially around flooding, by working with communities and developing flood defence projects	The impacts of climate change will be well understood and support will be continuing with communities to develop resilience against climate extremes	Durham County will be a resilient place to live with a knowledgeable population, aware of the risks associated with climate extremes. All sectors will be taking appropriate action to mitigate risk especially around health, infrastructure and nature.

Key Challenges

[46] https://report.ipcc.ch/ar6/wg2/IPCC_AR6_WGII_FullReport.pdf
[47] https://www.bbc.co.uk/news/science-environment-67861954
[48] https://www.climatejust.org.uk/who-vulnerable

Climate Change is bringing new threats to County Durham and has increased the impacts of existing hazards. It is not just about flooding. Climate extremes will include droughts and subsequent wildfires becoming more commonplace, more frequent storms and significant damage to property and habitats. How we prepare for such events is critical to ensure we can be as resilient as possible. Working together with partners is central to the challenges faced.

The impacts on health for example are significant and varied depending upon the issue[49]. For example the following table shows the cause plotted against the issue and impact on health:

Cause	Issue	Impact
Rising Temperatures	Severed Weather	Injuries, fatalities, mental health impacts
	Air pollution	Asthma, Cardiovascular disease
Extreme Weather	Changes in ecology	Malaria, dengue, encephalitis etc
	Increasing Allergens	Respiratory allergies, asthma

[49] www.cdc.gov/climateandhealth/effects/default.htm

Sea Level Rise	Water Quality	Cholera, Algal blooms, cryptosporidiosis
	Water and food supply impacts	Malnutrition, diarrheal disease
Increasing CO2 levels	Environmental Degradation	Forced migration, civil conflict, mental health impacts
	Extreme heat	Health related illness and death, cardiovascular disease

Climate Change Adaptation has been identified by the new North East Combined Authority (NECA) as a priority in the devolution deal. A new North East Coastal and Rural Taskforce will develop a Coastal and Rural Economy Transformation Blueprint for the North East and will examine a number of policy options and possible existing funding sources focused on the natural environment, including climate adaptation, mitigation, natural infrastructure, and landscape restoration. The LA7 group of local authorities are working together to ensure resilience is being woven through the NECA in a draft integrated delivery plan.

Key Highlights

- Over 45 community resilience plans are now in progress, with three plans fully complete. In addition we have worked with Durham Community Action to equip 27 community buildings with emergency kits and supplies.
- A number of community groups have been successful in gaining funding to make their community buildings more resilient, with much of the funding coming from Northern Powergrid[50].
- North East Satellite Applications This project will connect the end users, academia and space community to share knowledge, and identify barriers and opportunities for innovation involving space technologies within this domain. It will build on a number of regional LRF projects and initiatives, but have not yet considered space applications, that are already underway within the region.
- The Public Health team have adopted a Climate Change and Health Action Plan that includes 32 individual tasks that focus across a range of actions including:
    - Maximise the reduction of carbon emissions in existing public health actions supporting the CERP.
    - Understand the carbon footprint of the public health team and develop actions to reduce it.
    - Hot weather, increased temperatures and heatwave actions.
    - Air quality and cleaner air actions.

[50] https://www.northernpowergridfoundation.com/grants-awarded

- Emergency preparedness, vulnerability and resilience actions.
- Advocating and influencing national, regional and local strategies and policy action.

Co-Benefits

The co-benefits to being more resilient are many and varied and in particular the health related co-benefits are significant.

- On a practical level, the identification of communities most risk from extreme weather events can help preparedness, reduce impact and damage and can even save lives.
- Having buildings that are climate resilient, can reduce impact and give communities a place to go at times of extremes.
- Natural flood defence works can provide new habitat for nature. Especially critical for coastal communities. Furthermore, applying nature based adaptation solutions can have significant mental health benefits especially in more urban areas.
- Communication of impacts can bring together communities, help to identify associated impacts such as fuel poverty and bring about mitigation.
- Depending on the adaptation measures there is likely to be reduced cardiovascular and respiratory diseases, decreased heat stress, reduced exposure to food and water-borne diseases, and enhanced mental health can be achieved.
- By applying naturally ventilated and passive design strategies in buildings, this can have a positive impact on indoor air quality and thermal comfort.

Asks of Government

- The National Adaptation Plan is a great first step, but needs to be focused, to ensure the most urgent priorities are tackled.
- The new devolved administration should ensure that adaption is a firm priority given its strategic nature.
- Significant funding needs to be made available to address current and future risks to flooding, especially surface water flooding, to deal with instances of extreme rainfall.
- More funding needs to be targeted at vulnerable communities to assist with the adaptation of homes to avoid overheating.
- Build policy to ensure there is no further degradation of sensitive peatland habitats and indeed that there is a commitment to improve such habitat.

Chester-le-Street, Chester Burn de-culverting project.

6.8 Communication, Engagement and Education

Climate change is a critical issue with profound impacts on ecosystems, economies, and human well-being. Effective communication is crucial for mobilizing collective action and informed decision-making. However, conveying the complexities of climate change requires bridging the gap between scientific evidence and public understanding, navigating political sensitivities, and inspiring change at individual and societal levels.

Despite the daunting challenges posed by climate change, there is a growing availability of information through various channels. Surveys show widespread concern among adults in Great Britain regarding climate change consequences. You can find out more about this on the National Statistics (ONS) website.

As a local authority and public body, we have a significant role in communicating, engaging, and educating our communities about climate change. These responsibilities are vital for raising awareness, enhancing understanding, and promoting collective action. By prioritizing communication and education, we empower communities to combat climate change and build resilience for a sustainable future.

Where we are now in 2024	Laying foundations for 2030	Laying the foundations for 2045
Significant progress in advancing exemplary education programme in local schools. Flourishing partnerships with the community, enhancing growth and development. Establishment of robust communication channels amplifying visibility of CERP initiatives. Increased community engagement fostering awareness of climate issues.	Focus on clear, innovative and transparent messaging about climate change. Implementation of educational programs at various levels. Community engagement in climate discussions and solutions. Strengthening partnerships for wider outreach. Promotion of sustainable behaviours and actionable steps.	Universal understanding of climate change causes, impacts, and solutions. Robust partnerships for collaborative climate action. Empowerment of resilient communities against climate impacts. Alignment of policies with climate goals. Continuous learning, adaptation, and innovation guided by scientific evidence.

Key Challenges

Effective climate change communication faces numerous challenges, including:

- **Complexity:** Communicating intricate climate science across various disciplines poses a challenge in engaging diverse audiences effectively.

- **Uncertainty:** Conveying scientific uncertainties while maintaining the urgency for action demands careful framing and transparency.
- **Cost Constraints:** Limited financial resources pose challenges in running extensive communication campaigns amidst competing causes.
- **Balancing Objectivity and Advocacy:** Finding the equilibrium between presenting objective scientific information and advocating action is crucial, especially considering potential biases from funding sources.
- **Misinformation:**
  a. **Denial of Human Influence:** Addressing misinformation that downplays human contributions to climate change despite scientific consensus.
  b. **Exaggeration of Natural Variability:** Correcting misinformation that overemphasizes natural factors over human activities as the primary drivers of climate change.
  c. **Cherry-Picking Data**: Countering selective presentation of data or anecdotal evidence to undermine the reality of climate change.
  d. **False Equivalency:** Clarifying misrepresentations that equate mainstream scientific findings with minority viewpoints or fringe theories.
  e. **Conspiracy Theories**: Debunking baseless conspiracy theories on climate change origins and motives.
- **Reaching Sceptical Audiences**: Developing targeted strategies to engage sceptical or indifferent segments of the population.
- **Long-term Commitment**: Securing sustained funding for continuous communication efforts amidst competing priorities.
- **Psychological Barriers**: Addressing cognitive dissonance, ideological polarization, and psychological distance in climate change acceptance and action.
- **Political and Ideological Divides**: Overcoming politicization to foster constructive dialogue and progress.

Feedback from the Durham Youth Council also highlighted gaps in climate education, awareness of 'green' career opportunities, and the importance of utilizing popular social media platforms like Instagram, TikTok, YouTube, and Snapchat for effective communication, while also ensuring messages alleviate rather than contribute to climate anxiety among youth.

Key Highlights

- **Monthly Communications and Campaigns**: Regular monthly communication and engagement campaigns have been executed to highlight Climate Emergency Response Plan (CERP) themes, aiming to raise awareness and promote action.
- **Launch of Climate County Durham Facebook Page**: A new Facebook page dedicated to climate-related information and updates has been launched, to serve as a central hub for community engagement and dissemination of climate-related content.
- **Continuous improvements to our platforms**: Enhancing our online platforms supporting collaborative efforts across organizations and the county to achieve our 2030 and 2045 Net Zero goals

- **Corporate Climate Branding**: Climate branding has been incorporated into various schemes, demonstrating a commitment to climate action across the corporate organisation.
- **Climate and Sustainability Intranet Hub**: A dedicated intranet hub for climate and sustainability provides staff with easy access to resources, information, and updates.
- **Community Engagement and Events Support**: Collaboration with community groups, businesses, and partners has facilitated climate-related talks and events.
- **Staff Engagement Sessions**: Monthly "Let's Talk About" sessions with staff provide a platform for dialogue and discussion on climate-related matters, fostering internal awareness and engagement among employees.
- **The ECO2 Smart Schools Programme** helps schools and academies in the County reduce energy use and carbon emissions. It offers tailored support through a credits model, allowing schools to choose the assistance that suits them best each year. The website showcases case studies of successful energy-saving practices in various schools.
- **ECO2COP International Schools Conferences**: The ECO2COP conferences, conducted in partnership with Durham University and OASES, have seen significant participation from schools globally. Sessions featuring experts allow young people to engage directly with climate issues, promoting education and awareness. More information is available on the ECO2 smart schools' website.
- **Climate Friendly Schools**, is a new school's programme developed by OASES providing new opportunities for schools and Multi Academy Trusts in the County (and further afield). It has been supported financially by some Area Action Partnerships to work with specific schools in their localities.

National Education Partner Activity

- The Let's Go Zero 2030 campaign is supporting schools to reduce their carbon footprint across all aspects of school life. This programme is rolling out regional support structures and is expected to reach the north-east in September 2024. Durham Council has a representative on their Advisory Board to ensure effective collaboration with existing programmes and to help steer the national programme.
- Eco-Schools England launched a carbon calculator for schools in January 2024. The Council supported the development of this resource for schools that will enable them to track scope 1-3 emissions, enabling them to see their full carbon emissions and will encourage schools and Trust to use the tool.

Co-Benefits

Communicating about climate change with communities, businesses, and residents not only raises awareness but also generates numerous co-benefits, including:

- **Fuel Poverty Alleviation:** Sharing strategies to reduce energy consumption helps alleviate fuel poverty and lower energy costs.

- **Social Inclusion:** Involving diverse groups in climate conversations addresses inequalities within communities.
- **Promotion of Physical and Mental Health:** Encouraging activities like walking and cycling reduces carbon emissions while enhancing physical and mental well-being.
- **Creation of Safe Green Spaces:** Promoting green areas provides safe places for children to play, fostering their well-being.
- **Improved Diet and Cleaner Air:** Lifestyle changes like consuming locally sourced foods and reducing air pollution lead to better health outcomes.
- **Encouragement of Sustainable Behaviours:** Climate engagement promotes sustainable lifestyle changes, contributing to broader sustainability goals.
- **Enhanced Resilience:** Engaging in climate discussions promotes resilience and adaptation measures, aiding communities in recovering from disasters.
- **Community Bonds Strengthening:** Climate engagement fosters collaboration and a sense of community, contributing to overall well-being.

In summary, effective communication on climate change and sustainability leads to numerous positive outcomes, from individual health benefits to environmental conservation and community resilience.

Asks of Government

- Continued commitment to the DFE Sustainability and Climate Change Strategy and an increase in capital and maintenance funding to enable schools and the wider education to be able to meet the net zero targets
- Commitment to educating and raising awareness wider and investing funding into this element as it is crucial to communicate and educate to bring about behavioural change and commitment to the cause.

7. The Planning System and Net Zero

The planning system is crucial to enabling delivery of the net zero vision outlined in many of the themes in this CERP. The potential of planning as a tool is more than it being a process to attain approval for planning applications, it can also provide a holistic way of defining strategic, on the ground pathways to a net zero and climate resilient future.

Without planning we would be less likely to ensure that County Durham's communities are resilient to the impacts of climate change or that they benefit as much as possible from low carbon transport and greener buildings powered by renewable energy sources.

For example, planning is playing an important role in the transition from fossil fuels to renewable energy sources in County Durham. Since 2019, planning approval has been granted for an additional 272MW of renewable electricity from solar farms, representing a 1,715% increase in capacity since 2019.

The County Durham Plan[51] which sets out how much new development is needed, where it should be located and what standards it should meet also includes requirements within its vision, objectives and policies that contribute positively towards tackling and adapting to climate change such as ensuring new development:

- Goes beyond minimum standards on energy efficiency;
- Uses renewable energy sources in locations that are off the gas network; and
- Does not increase flood risk.

The Plan is due to be reviewed in 2025.

In addition, once adopted the Minerals and Waste Policy and Allocations document will ensure, that proposals for minerals and waste development consider and do not have an unacceptable impact on the achievement of a low carbon future in County Durham.

The National Planning Policy Framework (NPPF) requires that the planning system should support the transition to a low carbon future in a changing climate by shaping places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure. The Government is reforming the planning system and has indicated going forward, there will be a stronger focus on carbon impact assessments both for local plans and planning decisions.

In 2023, the Climate Change Committee (CCC) commissioned the Centre for Sustainable Energy and the Town and Country Planning Association to conduct research into the barriers and opportunities to tackling climate change through the planning system. Over 20

[51] The County Durham Plan (2020)

recommendations were subsequently made to Government on closing the gap between current performance and the potential of the system. [52]

The report also recognises that reform is required to help local authorities establish more ambitious requirements for new developments to be net zero, in line with local climate emergency targets. However, in December 2023, the Government made a statement which will make it harder for local authorities to set higher energy efficiency standards than those currently set out or planned in building regulations.[53]

Whilst the planned 2025 Future Homes and Buildings Standards intend to ensure that new buildings are 'zero – carbon ready' and will not require retrofitting in the future the standards are subject to consultation (ending in March 2024), could take up to a year to be fully implemented (from 2025) and do not consider the carbon impact of material used in construction. The achievement of net zero carbon homes is also dependant on the grid being decarbonised.

In response to a Government consultation on reforming the NPPF, strong support was given to the requirement for carbon impact assessments to be undertaken as part of the planning system.[54] However, the most recent revisions to the NPPF do not make any changes regarding this or any other improvements to chapter 14 and its provisions relating to tackling climate change.

The Government has stated that it intends to review national planning policy in due course to make sure it contributes to climate change mitigation as fully as possible. Research is also being undertaken on the practical and technical impacts of measuring and reducing embodied carbon.

On a positive, the Government recently significantly extended permitted development rights for solar, including introducing a permitted development right for solar car ports.[55]

Asks of Government

- Prioritise an update to the NPPF and Planning Practice Guidance on the UK's statutory duties and objectives in relation to net zero and clarify its weight in decision making.
- For current or successive Government to implement the 20 recommendations made in response to the research undertaken by the Centre for Sustainable Energy and the Town and Country Planning Association on the barriers and opportunities for delivering net zero and climate resilience through the local planning system
- To ensure that reporting on climate change impacts is a key part of the delayed replacement of EU environmental assessment processes (which support local plan

[52] Spatial Planning for Climate Resilience and Net Zero (2023)
[53] Ministerial Statement (Dec 2023) - Local Energy Efficiency Standards Update
[54] Government response to the Levelling-up and Regeneration Bill: reforms to national planning policy consultation - GOV.UK (www.gov.uk)
[55] https://www.gov.uk/government/news/new-planning-rules-to-boost-solar-rollout-and-slash-energy-bills

making and planning decisions) and that easy to use tools are developed to assist with robust net zero assessments.

8. Conclusion

CERP3 is our most comprehensive Climate Emergency response plan to date. Covering three years it focuses upon specific actions we can take to reduce emissions from across the Council estate and more widely across the County and includes a wide range of actions from partners. It also includes a section on what we are doing to become more resilient to the impacts of more extreme weather events.

Considerable progress has already been made on both council and countywide emissions through implementation of the Climate Change Emergency Response Plans 1 and 2, with considerable experience gained, which will benefit planning and delivery in the years ahead, but the challenge remains very significant.

2024 – 2027 is the most important time period we have to try and reduce our emissions. There remain opportunities to substantially reduce our footprint to assist in trying to keep world temperatures to below 1.5°C and to assist in improving energy security, biodiversity and economic opportunities. The challenge is however substantial, it will not be solved by the Council or our partners in County Durham, but we must show leadership to help others make those decisions to reduce emission and to improve both economic, social and environmental resilience. This CERP has shown that whilst we will need to make reductions across all sectors, the greatest reductions will be required from buildings and transport across the Council and County over the CERP3 period to keep on track towards the 2030 and 2045 net zero targets.

We are aware that there could be a shortfall to where we want to be and how quickly it will take us. The current financial situation is putting strains on all aspects of local government and thus there remain substantial risks of non-delivery across a range of actions. However, devolution will provide many opportunities to fund and enable large-scale delivery, helping the Council to continue the impressive progress it has already achieved by joining resources and knowledge sharing.

Appendix A – Key Climate Change Policy Drivers

Level	Name	Description
International	Paris Agreement 2015	The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties (including the UK) at the UN Climate Change Conference (COP21) in Paris on 12th December 2015.[56] The treaty aims to keep the increase in global average temperature to well below 2°C above pre-industrial levels; and to limit the increase to 1.5°C to prevent dangerous climate change. Limiting an increase in global average temperature to 1.5°C effectively requires the world to cut greenhouse gas emissions to net zero in the second half of the century. The Climate Change Committee suggested that the UK would have to meet the net zero target by 2045-50 in order to do its bit to ensure global temperatures remain within the prescribed limit.
National	Climate Change Act 2008	The Climate Change Act 2008 is the basis for the UK's approach to tackling and responding to climate change. It requires that emissions of carbon dioxide and other greenhouse gases are reduced and that climate change risks are adapted to.[57] The Act commits the UK government by law to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050. The 100% target was based on advice from the Climate Change Committee's (CCC) 2019 report, 'Net Zero – The UK's contribution to stopping global warming'. The Act also requires the setting of legally binding 'carbon budgets' to act as stepping stones toward the 2050 target. We are currently in the 4th Carbon Budget period (2023-2027) which sets a budget of 1,950 MtCO2e and represents a 52% reduction below 1990 levels. Further information on the budgets can be found here: https://www.theccc.org.uk/about/our-expertise/advice-on-reducing-the-uks-emissions/ The Climate Change Act also requires the UK Government to produce a UK Climate Change Risk Assessment (CCRA) every five years. The CCRA assesses current and future risks to and opportunities for the UK from

[56] https://unfccc.int/process-and-meetings/the-paris-agreement
[57] https://www.theccc.org.uk/what-is-climate-change/a-legal-duty-to-act/

Level	Name	Description
		climate change. In response to the CCRA, the Climate Change Act also requires the UK government to produce a National Adaptation Programme (NAP).
National	The Ten Point Plan for a Green Industrial Revolution (2020)	The ten point plan sets out the approach the Government will take to 'build back better' from the impact of coronavirus, support green jobs, and accelerate the path to net zero. The plan focuses on increasing ambition in the following areas: • Advancing offshore wind – aiming to produce 40GW of offshore wind by 2030. • Driving the growth of low carbon hydrogen – aiming for the UK to develop 5GW of low carbon hydrogen production capacity by 2030. • Delivering new and advanced nuclear power – aiming for the first small modular reactors and advance modular reactors to be deployed in the UK by 2030. • Accelerating the shift to zero emission vehicles green public transport, cycling and walking – aimed to end the sale of new petrol and diesel vans by 2030 and provide over 1,000 miles of safe and direct cycling and walking networks by 2025 etc. • 'Jet zero' and green ships – committed to fund Research and Development into zero-emission aircraft that could enter service in 2030 and to develop clean maritime technology e.g. hydrogen refuelling ports. • Greener buildings – ambition of 600,000 heat pump installations per year by 2028, building homes to the Future Homes Standards and improving around 1.5 million homes to Energy Performance Certificate C standard by 2030 • Investing in carbon capture, usage and storage (CCUS) – Establish two industrial clusters by mid 2020s and four sites by 2030 capturing up to 10Mt of carbon dioxide per year. • Protecting our natural environment – aim to boost nature conservation jobs through the Green Recovery Challenge Fund, introduce the Environmental Land Management scheme to replace the Common Agricultural Policy and invest in a six-year programme for flood and coastal defences. • Green finance and innovation - launch the £1 billion Net Zero Innovation Portfolio.

Level	Name	Description
National	Energy White Paper – Powering our Net Zero Future (2020)	Building upon the 10 Point Plan, the Energy White Paper sets out how the UK will shift from fossil fuels in the energy system and reach net zero emissions by 2050. The White Paper provides a strategy for the wider energy system that aims to: • Transforms energy, building a cleaner, greener future for the country and planet – aims to end dependency on oil to power nearly half of the economy and largely eliminating the use of gas to heat our homes. • Supports a green economic recovery; and • Creates a fair deal for consumers Requires a four-fold increase in clean electricity generation with the decarbonisation of electricity underpinning the delivery of the 2050 net zero target – no particular generation mix is targeted for 2050 but is likely to composed predominantly of wind and solar. Aims to ensure electricity networks are able to integrate increasing renewable generation.
National	UK Industrial Decarbonisation Strategy (2021)	Recognises that the UK's industry sectors: metals and minerals, chemicals, food and drink, paper and pulp, ceramics, glass, oil refineries and less energy intensive manufacturing account for around one sixth of UK emissions, and transformation of their manufacturing process is key if the UK is to meet its emissions targets. The strategy sets out how industry can decarbonise in line with net zero while remaining competitive and without pushing emissions abroad. Aims for Industrial emissions to be down by two thirds from 2018 by 2035.
National	Decarbonising Transport: a Better, Greener Britain (2021)	Sets out the Governments commitments and the actions needed to decarbonise the entire transport system in the UK. The commitments relate to: • Increasing cycling and walking – e.g. aim that half of all journeys in towns and cities will be cycled or walked by 2030 • Zero emission buses and coaches – supporting delivery of 4,000 new net zero emission buses / first all-electric bus town or city • Decarbonising railways – deliver a net zero railway network by 2050 • Zero emission fleet of cars, vans, motorcycles and scooters – consulting on phase out date for new petrol and diesel vehicles • Accelerating maritime and aviation decarbonisation

Level	Name	Description
		• Delivering a zero emission freight and logistics sector – consulting on phase out date for the sale of all new non-zero emission HGVs • Embedding transport decarbonisation principles in spatial planning and across transport policymaking • Maximising the benefits of sustainable low carbon fuels • Hydrogen's role in a decarbonised transport system • Future transport – more choice, better efficiency • Supporting UK Research and development

National	Environment Act (2021)	The Environment Act provides the UK's new framework of environmental protection, setting long-term, legally binding targets for environmental improvement following the UKs departure from the EU. The key provisions include:
		• Waste and Resource Efficiency
		  ○ Requires producers to pay the full net cost of managing specified products and materials at end of life, to incentivise more sustainable use of resources
		  ○ Establish a deposit return scheme for drinks containers
		  ○ Introduces a core set of consistent materials for recycling
		  ○ Ambition to introduce weekly food waste collections
		• Air Quality
		  ○ Ensures that responsibility for solutions to poor air pollution is shared across local government structures and with relevant public bodies
		  ○ Additional enforcement powers for domestic burning
		• Water
		  ○ Includes measures intended to support new and existing drainage boards
		  ○ To reduce storm overflows and the harm that they cause
		• Biodiversity
		  ○ Strengthens and improves the duty on public bodies to conserve and enhance biodiversity, including mandating biodiversity net gains through the planning system
		  ○ Requires the preparation and publication of Local Nature Recovery Strategies

Level	Name	Description
		○ Provides greater enforcement powers to the Forestry Commission to reduce illegal tree felling and will require local authorities to consult residents The provisions have considerable overlap with climate change adaptation and mitigation. For example, greater powers in relation to air quality may help to limit greenhouse gas emissions. The introduction of weekly food waste collections is beneficial but will likely increase the carbon footprint of local authorities in relation to the operation of additional collection vehicles. Net gains in biodiversity may help to increase carbon sequestration and natural flood water attenuation.
National	Net Zero Strategy: Build Back Greener (Oct 2021)	Sets out policies and proposals for decarbonising all sectors of the UK economy to meet the net zero target by 2050. Key policies and commitments include: • By 2035 the UK will be powered entirely by clean electricity, subject to security of supply. • Deliver 4 carbon capture usage and storage (CCUS) clusters, capturing 20 to 30 MtCO2 across the economy, including 6 MtCO2 of industrial emissions, per year by 2030 • An ambition that by 2035, no new gas boilers will be sold. • 2030 commitment to end the sale of new petrol and diesel cars, and 2035 commitment that all cars must be fully zero emissions capable.[58] Restoring approximately 280,000 hectares of peat in England by 2050 and trebling woodland creation rates in England.
National	British Energy Security Strategy (2022)	Sets out the Governments strategy to ensure Britain's power supply is affordable, clean and secure. • Low carbon power- Target of providing 95% of UK electricity from low carbon sources by 2030 and to fully decarbonise electricity by 2035. • Nuclear - increasing capacity from 8 GW today to 24 GW by 2050. This target could see the building of up to eight new reactors.

[58] Please note that this commitment has since been superseded by a commitment for 80% of new cars and 70% of new vans sold in GB will be zero emissions by 2030, increasing to 100% by 2035: https://www.gov.uk/government/news/pathway-for-zero-emission-vehicle-transition-by-2035-becomes-law All new heavy goods vehicles in the UK will be zero-emissions by 2040.

Level	Name	Description
		• Offshore Wind - increasing capacity from 11 GW today to 50 GW by 2030, including 5 GW of floating offshore wind. • Onshore Wind - increasing capacity from 14 GW today in line with local community views. Expansion will be incentivised by offering lower electricity prices to those living near future wind farms • Oil and Gas recognised as essential transition fuel and increase in domestic production supported • Offshore Gas - new licensing round launched in autumn (first since 2020) focus on faster development times. • Low Carbon technologies - commitment remains to deliver carbon capture and storage utilisation by 2030. • Hydrogen - increasing the previously set target from 5 GW to 10 GW by 2030 with at least 5 GW of green hydrogen.
National	Carbon Budget Delivery Plan (2023)	The Carbon Budget Delivery Plan provides further detail to the 2021 Net Zero Strategy and fulfils statutory duties under the Climate Change Act 2008 setting out a package of quantified and unquantified proposals and policies, and associated timescales and delivery risks, that enable Carbon Budgets 4 (2023-27)-6 (2033-37) to be met.[59] The quantified proposals and policies provide 100% of savings required to meet Carbon Budget 4 and 5 and 97% of the savings required to meet Carbon Budget 6. Examples of areas where the Government expect some further savings are areas of future research in the Agriculture and Land Use, Land-use Change and Forestry (LULUCF) sectors, as well as policies to further improve the energy efficiency of buildings and place-based transport interventions that will reduce emissions locally.
National	Powering up Britain: Net Zero Growth Plan (2023)	Provides an update to the 2021 Net Zero Strategy and Energy Security Strategy: Along with the Powering up Britain: Energy Security Plan, the Net Zero Growth Plan helps to further set out the Governments policies to ensure it can deliver energy security and increase the UKs international competitiveness, whilst delivering on net zero. The Net Zero Growth Plan focuses on the long term

[59] https://www.gov.uk/government/publications/carbon-budget-delivery-plan

Level	Name	Description
		decarbonisation trajectory and how it can improve competitiveness, deliver an industrial renaissance and level up the UK. The Plan provides an update on progress made to date, identifies which recommendations proposed by the Climate Change Committee and the Independent Review of Net Zero it will be acting upon and upcoming delivery milestones.
National	Powering up Britain: Energy Security Plan (2023)	Provides an update to the 2021 Net Zero Strategy and Energy Security Strategy: Powering Up Britain – Energy Security is focused on changing reliance on imported fossil fuels, by reducing demand and boosting home grown energy, giving priority to energy resilience. The plans set out the actions the Government are taking, and the timeline for issues that need further work, providing certainty to the industry, to investors and to the British public on the direction of government policy and their commitment to delivery. Some of the actions set out in in the Plan are in response to recommendations made in the Independent Review of Net Zero, led by the (former) Rt Hon Chris Skidmore MP and published in January 2023.

Appendix B – Scope of Emissions included within the Council's Carbon Footprint

The changing responsibilities of the local authority have led us to review the council operational boundary for the purposes of measuring our carbon footprint against our stated target. This has resulted in a boundary that is closer to the operations where we have day to day control and enough influence to be able to commit to our target.

Over time, the responsibilities of the council have changed, new technologies appeared and carbon calculation methodologies have evolved. During this period, we have largely kept the baseline the same even as what we were responsible changed. This has resulted in an increasing gap between what we want to achieve and what we are able to control/influence.

The main driver behind this review has been the academisation programme. This process means that an increasing number of schools which were maintained by the council are now independent of local authority control. In the years after academisation, many trusts chose to retain energy management and procurement contracts with Durham County Council so we were still able to access their data however this could change at any time, and it does not change the fact that we do not have control over the sites and operations.

If we no longer deliver a function and cease to have control of a site, the Greenhouse Gas Protocol advises that we should remove it from our footprint calculations and we also remove the equivalent emissions from the baseline year. Because the baseline and the current footprint are altered, taking sites out of the boundary does not automatically result in a significant drop in year on year savings. This ensures is not a quick way of decarbonising.

This applies where there is a significant change in responsibilities. If we choose to close a site for operational reasons (e.g. closing County Hall), that will still produce a carbon saving.

It is worth noting that although we are looking to clarify and define the boundary in relation to the 80% and Net Zero target, that does not mean we are ignoring anything not within that scope. Clearly defining the boundary of the 80% target allows us to know the parameters and target resources appropriately. We will continue to explore, identify and reduce the climate impacts of our actions outside this boundary.

Without fixing the boundary now, as we discover additional sources of emissions (for example scope 3 emissions from contracts), the boundary and target would be constantly changing and increasing as we approach our target year, making it virtually impossible to achieve.

We realise that there are a significant proportion of emissions that don't fall in that boundary, and we are taking steps to increase our recording and reporting of these emissions.

Key changes to the boundary

Academies have been removed as we have no control of their finance or day to day operations

Managers considered whether **maintained schools** are enough within our control to remain in the footprint. The role of local authorities in relation to schools has changed as well, however we decided that we would like to keep them in target despite the significant financial and organisational challenges this brings. This will be kept under review as national educational policy and financing evolves.

Public Electric Vehicle chargers. There were none of these in the baseline year. There are now some which are on the council electricity contract, but it was decided that these should not be considered as part of the council footprint. It would be counter intuitive to include them as they facilitate larger carbon reductions and the council should not be penalised for encouraging them by including them in our usage. For clarification, Electricity used for the DCC EV Fleet will still be included.

Business unit energy use. The council has a number of units which are leased out to businesses, either as a whole site or as units/offices within the building.

The vast majority of the energy for these sites is used by the occupiers rather than the landlord. They will not form part of the footprint, however where usage for the landlord's supply can be established we will include that. Also, if we are also tenant, we will endeavour to include a proportion of the site usage.

Care Homes. The authority stopped managing care homes around 2014 and disposed of/transferred a number of assets however the initial baseline was not adjusted to take this into account. This exercise will remove these sites from the baseline year as we are no longer delivering this function in our estate.

Waste Management. For waste services, we have decided to tighten the boundary to match the operations the council delivers in-house. This was due to a number of factors.

- This was the only area of work where we were tracking supplier emissions and including them in our footprint, so was an anomaly.
- The level of emissions are largely outside our control and are directly related to how much waste is produced. Although the council has a duty to collect and dispose of the waste, we are not the source of the waste.
- Transporting recyclable waste is likely to have a larger carbon impact than residual waste (it is less bulky so less can be transported on each load). Our aspiration to increase recycling could increase the emissions that fell within the old boundary.
- A number of sites/functions weren't included in the baseline year.

This means that the new boundary includes emissions from the waste collection vehicles and council ran sites where we initially handle the waste, but will not include onward transportation and processing. It also excludes the HWRC sites (managed by H W Martins).

This table summarises the key aspects that are included in the new boundary for footprint calculations.

Aspect	Previously included	New Boundary
Key operational sites, leisure centres, libraries, depots etc	yes	Yes
Academies on DCC energy contracts	yes	no
Academies NOT on DCC energy contracts	no	no
Maintained schools	yes	Yes
Maintained residential schools and PRU	yes	Yes
School pools	yes	Yes
Aycliffe Young People's Centre	yes	Yes
Business sites where 3rd party buys utilities (e.g. St Stephen's Court, Willington)	no	No
Business sites with sole occupier but on a DCC utility contract (e.g. Netpark)	yes	No
Business sites with multiple tenants on a DCC utility contract (Dales Centre/Derwentside Business Parks etc)	yes	No
Arms length and partnerhsip organisations offices (e.g. Business Durham)	yes	yes
Public EV charging posts	n/a	No

Aspect	Previously included	New Boundary
Fleet	yes	Yes
Business Miles	yes	Yes
Charging of DCC EV Fleet at home	n/a	Yes
Working from home emissions	no	no
Commuting	no	No
Waste collection and bulking (DCC fleet and sites)	yes	Yes
Waste onward transportation and process emissions	yes	No
Waste outputs (landfill/EfW/recycling impacts)	no	No
Landfill gas electricity production	no	No
Council houses	no	no
Scope 3	no	no

Appendix C – Potential Countywide Interventions and the Council's Level of Influence

This appendix identifies the interventions associated with the Required Reduction Pathway modelled within the SCATTER tool. It also identifies the Council's relative level of influence in relation to each.

Land Use

SCATTER Intervention	Estimated disaggregation over the CERP3 period where fully delivering
24% increase in woodland cover by 2030	2% increase in woodland cover per year
Increase land used to grow bioenergy crops. By 2050, 7% decrease in grassland. Cropland increases 5%.	0.2% decrease in grassland in favour of a 0.19% increase in bioenergy crops per year. Taking existing land use into account, this equates to approximately 47ha grassland being converted to bioenergy crops in County Durham per year[60]

Durham County Council's Level of Influence

Woodland Cover: Low-Medium

The Council has potential to make change on land across its own estate and to promote tree planting grants and schemes to the public, communities and landowners. Action is limited by suitability of land for tree planting.

Crops and Agriculture: Low

The council can work with landowners, estates and farmers by sharing knowledge and best practice. The council can also work with key agricultural stakeholders such as the National Farmers Union. However, influence is limited.

Domestic Buildings

SCATTER Intervention	Estimated disaggregation over the CERP3 period where fully delivering
Domestic lighting and appliance total energy demand decreases to 27% by 2050	1% reduction in lighting and appliance energy demand per year

[60] Land use in England, 2022 - GOV.UK (www.gov.uk)

Proportion of cooking which is electric increases to 100% in 2050	2% increase in electric cooking per year
Hot water demand per household reduces by 8% every 5 years	1.6% reduction in hot water demand per year over CERP3 period
By 2050, 10% of current housing stock is retrofitted to a medium level; 80% deep retrofit.	0.4% (1,010) homes to be retrofitted to a medium level and 3% (8,084) homes to be retrofitted to a deep level per year
By 2050, 10% resistive heating; 60% air-source heat pumps and 30% ground-source heat pumps for domestic space heating and hot water	0.4% resistive heating, 2% air source heat pumps and 1% ground source heat pumps for heating and hot water per year
From 2025, 100% new-build properties are built to Passivhaus standards	From 2025, 100% new build properties are built to the Future Homes Standard

Durham County Council's Level of Influence: Low-Medium

Improving the energy efficiency of existing homes will reduce emissions from electricity and gas use, bills and fuel poverty. Private rented properties are hard to reach for energy efficiency improvements, but the Council can provide advice, support the uptake of grants and can enforce minimum energy efficiency standards. Ensuring the County has sufficient skilled workers to undertake retrofit measures will also support these interventions.

For new homes, the County Durham Plan currently requires the achievement of a 10% improvement on minimum energy efficiency standards and requires the use of renewable sources as the main heating type in off gas locations. Following the introduction of the Future Homes and Building Standards, the Council will have less influence on setting higher energy efficiency standards such as requiring new homes to be built to Passivehaus standards. Please see section 7 of this report for further detail on this.

Commercial Buildings

SCATTER Intervention	**Estimated disaggregation over the CERP3 period where fully delivering**
Commercial lighting and appliance energy demand decreases 25% by 2050	0.9% reduction in lighting and appliance energy demand per year.
By 2050, 100% of commercial cooking is electrified	3.8% increase in the electrification of commercial cooking per year
In 2050, commercial heating, cooling and hot water demand is 60% of current levels	2.3% reduction in heating, cooling and hot water demand per year

By 2050, 50% of heating is from air-source heat pumps; 30% from ground source heat pumps and the rest comes from heat networks for commercial heating and cooling	1.9% increase in air source heat pumps, 1.1% increase in ground source heat pumps per year

Durham County Council's Level of Influence: Low-Medium

Through Business Durham, the Council could increase installations of heat pumps across its portfolio of business premisses.

The Council have recently commissioned a study to identify areas within County Durham that are suited to a heat network, (UK Gov says that by 2050 heat networks will make up 18 % of UK heat demand, up from 2 % now) This involves looking at commercial buildings as well as domestic and public buildings as offtakers and heat sources where there is waste heat generated.

The Council can also help to facilitate the development of skills in the county relating to the installation of green technology and can provide advice and facilitate knowledge sharing with businesses.

However, the Council has very limited influence over the energy efficiency of appliances that businesses opt to use.

Energy Generation

SCATTER Intervention	**Estimated disaggregation over the CERP3 period where fully delivering**
Onshore wind generation is 2.4 times bigger by 2030, tripling by 2050	Onshore wind generation is 0.4 times bigger per year up until 2030. This equates to an additional 95,987 MWh to be generated each year from onshore wind up until 2030. This figure accounts for generation from onshore wind since 2019.[61]
610% increase in large-scale solar PV generation by 2030, 1250% increase by 2050	15.5% increase in solar generation (7,979.25MWh) each year up until 2030. This figure accounts for achievements in generation from solar since 2019.

[61] Regional Renewable Statistics - GOV.UK (www.gov.uk)

By 2030, hydroelectric power generation increases by 90%; by 2050 generation is 230% of current levels	15% increase (728.5MWh) in energy generated from hydroelectric power per year up until 2030.

Durham County Council's Level of Influence

Solar: Medium

The Council can develop solar schemes to increase the amount of installed solar PV, as well as encouraging community energy schemes. The Council's buildings and land provides opportunities for solar generation and the Council is developing guidance to help inform the suitability of schemes across the rest of the county in its Solar Supplementary Planning Document (SPD)

Onshore Wind: Low

The Council can employ national advocacy on grid connection issues and support community energy delivery. The Council could also seek to identify further suitable locations across its estate to generate wind energy, although national planning policy is more restrictive towards onshore wind compared to other renewables. The North Pennines AONB designation restricts larger scale turbines in the county.

Hydroelectric Power: Low

The Council can work with partners to further understand the feasibility and viability of hydroelectric schemes across the County. However, there may be limited opportunity associated with the Council's own estate and further development and installation will be dependent on other landowners and partners coming forward with suitable schemes.

Transport

SCATTER Intervention	**Estimated disaggregation over the CERP3 period where fully delivering**
By 2050, 22% decrease in distance travelled by road freight: 75% increase in efficiency	0.8% decrease in distance travelled by road freight per year. 2.8% increase in efficiency for LGV's only.
25% reduction in total distance travelled per individual per year by 2030, staying constant at this level until 2050	4% decrease in distance travelled by individuals per year.
Average modal share of cars, vans and motorbikes decreases from national average of 74% total miles to 38% in 2050	Average modal share of cars, vans and motorbikes decreases by approximately 1.4% total miles per year.

Cars and buses are 100% electric by 2035.	The % of ULEV (cars and vans) registered in the county, increase by 99% by 2035 or 9% each year.[62]

Durham County Council's Level of Influence

Freight: Low

Low carbon shifts in the freight sector will largely come about through improvements to HGV EV/ULEV technology and national policy. However, the Council is leading by example through the transition of its own fleet to Electric Vehicles and through the measures it takes to reduce fleet mileage through route optimisation etc. Through planning, the Council can also direct and condition HGV's to primarily utilise the strategic road network which will improve efficiency compared to the use of minor rural roads.

Distances Travelled: Medium

Planning will help to dictate the connectivity of new developments to local services and associated distances travelled. Through its Digital Durham project, the Council can also improve access to good quality broadband in rural areas. Furthermore, the council can also influence the travel behaviour of its employees through the continuation of hybrid working, associated business travel policy and can engage with the public on travel related matters.

Modal Shift: Medium

Modal shift requires behaviour change from the public. The Council can however improve active travel and public transport infrastructure, quality of journeys, take steps to incentivise sustainable travel and deliver engagement programs.

Zero Emission Vehicle Uptake: Low

Vehicle purchasing is down to the individual consumer choice. However, the Council is supporting the uptake of electric vehicles through its ChargePoint delivery plans and is leading by example through the transitions of its own fleet away from petrol and diesel.

Industry

SCATTER Intervention	Estimated disaggregation over the CERP3 period where fully delivering
Industrial electricity consumption is 50% of total energy consumption by 2035, 65% by	In County Durham industrial electricity consumption would need to increase by 16% to match the 50% total energy consumption by 2035. [63] Over CERP3 this

[62] It is unlikely that all cars and buses will be 100% electric by 2035 as petrol and diesel vehicles will still be sold up until 2035. In terms of advances with technology buses, align more closely with HGVs where national policy requires net zero emissions by 2040.

[63] In 2021, Industrial (and commercial) electricity consumption was 92.4ktoe, representing 34% of total energy consumption. https://www.gov.uk/government/statistics/total-final-energy-consumption-at-regional-and-local-authority-level-2005-to-2021

2050. Output falls by 2% every year for non-heavy industry	would require an increase of 1.4% in electricity consumption per year.
Reductions in process emissions from all industry; general industry reduces process emissions at a rate of 4.5% per year. Chemical emissions reduce 1% per year; metals 0.7% per year and minerals 0.8% per year	As per the intervention

Durham County Council's Level of Influence: Low

The Council has limited local influence to shift industrial processing away from fossil fuel use. National government policy and funding combined with key industry bodies collaboration will be key, though there may be a role for councils in lobbying for increased efficiency and lower carbon standards for industry.

Waste (Local Authority Collected Waste)

SCATTER Intervention	**Estimated disaggregation over the CERP3 period where fully delivering**
65% recycling achieved by 2035, recycling rates increasing to 85% by 2050	In 2021, 39% of total local authority collected waste was sent for recycling. [64]Therefore, to match the 65% intervention a 26% uplift in recycling rates by 2035 would be required equating to a 2.3% increase per year.
Total volume of waste is 61% of 2017 levels by 2040	The total volume of local authority collected waste in 2016/17 was 249,721 tonnes and 266,698 in 2020/21. This represents an increase of 16,977 tonnes or a 7% increase on 2017 levels. The intervention would therefore require a 68% reduction in waste volume produced by 2040 or a decrease of 4.25% per year (11,335 tonnes)

[64] ENV18 - Local authority collected waste: annual results tables (Historical) - GOV.UK (www.gov.uk)

Durham County Council's Level of Influence

Proportion of Waste Recycled: Medium

Through public engagement programs, educational campaigns, management and introduction of new waste collection services, the Council can encourage households and other organisations to increase the proportion of collected waste that is recycled and minimise contamination levels. The Council has less influence over commercial waste streams that do not have trade waste contacts with the Council.

Volume of Waste: Low

The Council can influence household waste generated through engagement programs and working with local businesses can showcase best practice commercial waste management practices. Collaboration with community groups can also increase public engagement on the waste hierarchy and opportunities to support circular economy initiatives. The overall quantity of waste however is mainly driven by producers and consumer activity which may require national action to reduce.

Appendix D – Other Net Zero Commitments and Plans

The following table provides links to some of our Partners Net Zero Plans so you can find out more about the commitments they have made and action they are taking to tackle climate change.

Partner	Link
Lanchester Wines	https://www.lanchesterwines.co.uk/what-we-do/sustainable-wine-business/
NHS	https://cddft.nhs.uk/media/829710/a4_cddft_green%20plan%202021-2024_sustainability%20matters_29mar21%20final.pdf
Northern Powergrid	https://ed2plan.northernpowergrid.com/
Environment Agency	https://assets.publishing.service.gov.uk/media/60ae699be90e071b5d705d20/EA-net-zero-2030.pdf
Northern Gas Networks	https://www.northerngasnetworks.co.uk/wp-content/uploads/2019/12/A8-NGN-RIIO-2-Enviromental-Action-Plan.pdf
Durham Community Action	https://www.durhamcommunityaction.org.uk/climate-action
Northumbrian Water	Net Zero (nwg.co.uk)
Durham University	Net Zero Commitment https://www.durham.ac.uk/discover/biodiversity/

In addition to the Net Zero Plans worked to by some of our partners, it is evident that many businesses and industries operating within County Durham, also have targets and plans associated with reaching net zero. Please see the following, publicly available examples:

- Tarmac - Net Zero Roadmap - Tarmac
- Cemex - Our journey to net-zero - Corporate Website - Cemex
- Aggregate Industries - agi7530_net-zero-strategy-v9-1.pdf (aggregate.com)
- Glaxo Smith Kline - https://www.gsk.com/media/11003/responsible-business-2023.pdf

The following table provides an overview of the climate change commitments made by other local authorities in our region.[65]

Local Authority	Commitment
Darlington Borough Council	**Council only pledge for 2050** "Work to make Darlington Borough Council carbon neutral by 2050 and call on central government to provide funding and powers to make this possible." *Climate Declaration | Darlington Borough Council*

[65] Source: https://cape.mysociety.org/councils/

Redcar and Cleveland Borough Council	**Whole area pledge for 2030** "A motion passed by councillors in March declared a climate emergency and committed to attempting to make the Borough carbon neutral by 2030." *Climate Action | Redcar and Cleveland Council*
Middlesbrough Borough Council	**Council pledge for 2029** "We have ambitious targets to be carbon neutral by 2029 as an organisation." *Green Strategy | Middlesbrough Borough Council* **Whole area pledge for 2039** "Our goal is for the whole town to be carbon neutral ten years later [2039], well ahead of the government's 2050 target." *Green Strategy | Middlesbrough Borough Council*
Hartlepool Borough Council	**Council only pledge for 2050** The Climate Change Response and Net Zero Strategy for Hartlepool Borough Council sets out the framework for the council to become a net zero emissions local authority by 2050 climate change and net zero
Stockton on Tees Borough Council	**Council only pledge for 2032** We believe that as a Council we should aim to be net zero for greenhouse gas emissions by 2032, using the next critical decade to shift to sustainable practices and systems. Environmental Sustainability and Carbon Reduction Strategy 2022-2032
Sunderland City Council	**Council pledge for 2030** "The commitments outlined in the Declaration were announced at full council in March, and support the Council's ambition to have a net zero carbon footprint by 2030." *Sunderland marks World Environment Day* **Whole area pledge for 2040** "The Low Carbon Framework establishes a target for the City as a whole to be carbon neutral by 2040." *Low Carbon Action Plan | Sunderland City Council*
North Tyneside Council	**Whole area pledge for 2030** "We will publish an action plan of the steps we will take and the national investment we will seek to make North Tyneside carbon net zero by 2030."

	Carbon Net Zero 2030 | Action Plan 2023/24
South Tyneside Council	**Council only pledge for 2030** "South Tyneside Council is committed towards a sustainable future, striving towards carbon neutrality across Council buildings and operations by 2030." *Sustainable South Tyneside 2020-2025*
Gateshead Borough Council	**Council pledge for 2030** "Gateshead Council declared a Climate Emergency at its Council meeting on 23 May 2019. In doing so, the council committed to: • Make the Council's activities carbon neutral by 2030 • Achieve 100% clean energy across the Council's full range of functions by 2030. " *Climate Emergency Action Plan | Gateshead Metropolitan Borough Council* **Whole area pledge for 2030** "Support and work with all other relevant agencies towards making the entire area carbon neutral within the same timescale [2030]." *What Gateshead Council is doing*
Northumberland Council	**Whole area pledge for 2030** "Our key target of a net-zero Northumberland by 2030 still stands. This is a huge amount of work, but far more will need to happen in order to meet our goal of a carbon neutral county." *Climate Change Action Plan | Northumberland Council*
Newcastle upon Tyne City Council	**Whole area pledge for 2030** "Despite the devastating impacts of Covid-19, the city's determination and cross-party commitment to achieving Net Zero status by 2030 remains undiminished. " *Net Zero Newcastle - 2030 Action Plan*

Appendix E – Glossary of Terms and Abbreviations

Term / Abbreviation	Definition
Academisation	Many schools which were previously maintained by a local authority are now opting for academisation, i.e. turning into an academy via sponsorship or conversion. This means that the school will now be state-funded from the central government, with the intention of giving more power to the front-line teaching staff – with the option to opt-out of the National Curriculum and the freedom to be more innovative in the running of the school.
AI	Artificial Intelligence
APSE	The Association for Public Service Excellence
BAU	Business As Usual
BEEP	Business Energy Efficiency Project
BMS	Building Management System - A Building Management System (BMS), sometimes called a Building Automation System (BAS), is a computer-based system installed to control and monitor a building's electrical equipment such as ventilation, lighting, energy, fire systems, and security systems. It consists of software and hardware.
BNG	Biodiversity Net Gain
CCC	The Climate Change Committee, originally named the Committee on Climate Change, is an independent non-departmental public body, formed under the Climate Change Act to advise the United Kingdom and devolved Governments and Parliaments on tackling and preparing for climate change
CCRA	Climate Change Risk Assessment
CERP1	Our first Climate Emergency Response Plan covering the years 2020-22
CERP2	Our second Climate Emergency Response Plan covering the years 2022-24
CERP3	This document is our third Climate Emergency Response Plan covering the years 2024-27
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide equivalent - the number of metric tons of carbon dioxide emissions with the same global warming potential as one metric tonne of another greenhouse gas
COP26	The 2021 United Nations Climate Change Conference, more commonly referred to as COP26, was the 26th United Nations Climate Change conference, held at the SEC Centre in Glasgow, Scotland from 31 October to 13 November 2021
DESNZ	The UK Government's Department of Energy Security and Net Zero
Devolution	In England, devolution is the transfer of powers and funding from national to local government. It is important because it ensures that decisions are made closer to the local people, communities and businesses they affect.
ECO	The Energy Company Obligation (ECO) is a government energy efficiency scheme in Great Britain designed to tackle fuel poverty and help reduce carbon emissions.
EfW	Energy from Waste
EPC	Energy Performance Certificate
EU	European Union

EV	Electric Vehicle
Green Economy	Refers to products and services from across the economy which actively enable a shift towards net zero and/or improve the environment.
HGV	Heavy Goods Vehicle
HWRC's	Household Waste Recycling Centres
IES	Inclusive Economic Strategy
IPCC	Intergovernmental Panel on Climate Change
kW	Kilowatt – the rate at which something uses electricity
kWh	Kilowatt hour
kWp	Kilowatt peak
LA7 area	LA7 area means the Local Government areas of Durham, Gateshead, Newcastle upon Tyne, North Tyneside, Northumberland, South Tyneside and Sunderland
LAEP	Local Area Energy Plan
LED	Light Emitting Diode - energy efficient type of lighting
LEVI project	Local Electric Vehicle Infrastructure
LGR	Local Government Reorganisation – in 2009 the former district authorities of County Durham were abolished to become one unitary authority
LGV	Light Goods Vehicle
LNRS	Local Nature Recovery Strategy
LRF	Local Resilience Forum
LSIF	Local Skills Improvement Fund
LSOA	Lower Super Output Area
MW	Megawatt
MWh	Megawatt hour
NASA	The National Aeronautics and Space Administration
NAP	National Adaptation Plan
NECA	North East Combined Authority
NHS	National Health Service
Net Zero	Put simply, net zero refers to the balance between the amount of greenhouse gas (GHG) that's produced and the amount that's removed from the atmosphere. It can be achieved through a combination of emission reduction and emission removal
NPPF	National Planning Policy Framework
Offset/Offsetting	A mechanism that neutralises any remaining emissions following reduction activity through measures that ensure no net release of emissions into the atmosphere e.g. tree planting
PSDS	Public Sector Decarbonisation Scheme
PV	Photo Voltaic (solar panels
RIBA	Royal Institute of British Architects
RICS	Royal Institute of Chartered Surveyors
Regenerative Agriculture	The NFU define Regenerative Agriculture as a system based on five key principles. Minimising soil disturbance, broadening crop rotations, integrating livestock, increasing biodiversity and using cover crops.[66]

[66] https://www.nfuonline.com/updates-and-information/regenerative-agriculture-what-it-means-for-me-and-my-farm/

RRP	Required Reduction Pathway
SCATTER	A Local Authority emissions measurement and modelling tool. Setting City Area Targets and Trajectories for Emissions Reduction
Science Based Target	Pathways to ensure greenhouse gas reduction targets are aligned with what science deems necessary to limit global warming to 1.5°C in the near-term
Scope 1	Direct emissions that are owned or controlled by a company or organisation
Scope 2	Covers indirect emissions from the purchase and use of electricity, steam, heating and cooling
Scope 3	Scope 3 encompasses emissions that are not produced by the company or organisation itself and are not the result of activities from assets owned or controlled by them, but by those that it's indirectly responsible for up and down its supply chain.
UK Met Office	The UKs Meteorological Office