

North Yorkshire Council Climate Change Strategy 2023-2030



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Foreword

Cllr Greg White, Executive Member for Climate Change



Thank you for taking the time to read the North Yorkshire Council Climate Change Strategy which sets out how North Yorkshire Council (NYC) is proposing to respond to the Climate Emergency.

Thank you to everyone who completed a Let's Talk questionnaire, provided feedback by email and to the young people that responded to the Under 25 climate change survey in early Spring 2023. We have updated this strategy to reflect the feedback on our public consultation and the changing status of the Council since we became a 'unitary authority' in April 2023.

In July 2022, North Yorkshire County Council (NYCC) declared a Climate Emergency which rolled over to the new North Yorkshire Council from April 2023². We recognise the global and local impacts of climate change caused by humans are amongst the most serious issues facing our society and committed the Council to play its part in tackling the causes and impacts of climate change. Unprecedented UK summer temperatures experienced in 2022 and national and international extreme weather events such as storms and floods show us what the future will be like if we do not take action now. For North Yorkshire the risks include threats to food, energy and water security, damage to homes, businesses and infrastructure assets, poorer health outcomes and an increased cost burden for public services.

Most Governments have agreed that that we need to keep global temperature rise well below 2°C, and try to keep it below 1.5°C. We must reduce greenhouse gas emissions through a 'whole system approach' and everyone will need to think about everyday activities such as how we live, where we get our power from, how we choose to travel, work and shop. Our world systems are interconnected, and we must also support the natural world to recover and thrive as we are dependent upon strong ecosystems for our natural resources. We must all play our part to make this happen before it is too late and the global temperature becomes too high for society to function.

The actions we all need to take to reduce greenhouse gas emissions shouldn't mean that we will experience a poorer quality of life. When we improve the health of the planet, we will improve global health, equality and economic stability. These actions will also help us all to move into a low carbon economy where our economic growth, jobs and skills, housing and energy security all support climate change ambitions. The Strategy outcomes will also benefit health and wellbeing by reducing health inequalities, protecting people from extremes of climate change and reducing calls on public services in the future. These outcomes will also help deliver the Rural Commission recommendations³ to ensure a future for our thriving rural communities. We describe these co-benefits further in the Strategy.



But what can **we** do? A small area of just one country. As North Yorkshire Council we will have a direct connection with our residents, communities, businesses and partners. We can lead, enable and influence activities through the services which we deliver, the responses we make to Government and the regulatory and strategic functions we carry out and this will continue in the new Council. We are also a major employer and landlord, and we can use all these functions to address climate change in our normal everyday activity. A lot of technical research, evidence building, and joint working has already happened so that we are all fully aware of many of the activities which we need to take across North Yorkshire to reduce our greenhouse gas emissions, prepare for the impacts of climate change and to support nature recovery. We call these climate responsible actions.

The new North Yorkshire Council alongside the proposed York and North Yorkshire Mayoral Combined Authority *(from May 2024) (pMCA)* presents us with a fantastic opportunity to develop our joined-up approach. Together, with communities and businesses, we can take actions to tackle the causes and impacts of climate change in line with Government policy and our national legal obligation to be net zero by 2050⁵ and local ambition to be the first carbon negative region by 2040⁶.

Can we afford to tackle climate change? All budgets are under severe pressure in response to national and global financial and supply chain issues and as we recover from the Covid-19 pandemic. We have significant and demanding statutory responsibilities as a local authority to provide essential and critical services to support communities, vulnerable people and businesses. The activities proposed in the Strategy include some direct operational actions as well as place shaping and enabling the development of a low carbon economy and society. Some of these will require up front capital investment and may include large scale projects. We must ensure we are ready to seize opportunities to secure external funding to deliver locally.

We also have a leading role in shaping the place of North Yorkshire and influencing the local and national policies that determine how our society operates to enable everyone to take climate responsible actions. This is a shift in 'business as usual' priorities and may require a little additional funding, alongside a willingness to innovate and change, working closely together with our communities.

This Strategy sets out how North Yorkshire Council will respond to the Climate Emergency in leading, enabling and influencing activities. Some activities will require legislative changes or national financial instruments, but there is a leading role for our Council to use our powers and levers to take action. There will be challenging choices to make as to how best to use our land to maintain food and energy security, or our budgets to support vital services and vulnerable people. The Strategy outlines where Council resources can best be deployed to greatest effect and to play our part in reducing greenhouse gases, preparing for a changing climate and in supporting the natural world on which we all depend. The Strategy shows how our ambition is achievable and attainable and the green boxes throughout the document show the key actions we are proposing to undertake and will determine our Climate Change Action Plan which will set targets and milestones and indicate how and when we are going to reach them.

We do know that we, as a Council, cannot do this on our own. Our common understanding of the causes and impacts of climate change - and what we can do about it - is growing throughout society. It is reflected in the media and particularly in conversations about energy security in recent months. Every business, organisation, public sector body and community needs to play its part. By working together and sharing your views, comments, suggestions, activities and experiences we can ensure we make our climate ambitions a reality for everyone.

If you want to know more about what is causing our climate to change or would like a better understanding of some of the terms and scientific expressions in this Strategy, please look in the 'supporting documents' and glossary section at the end. There are also lots of links to other documents mentioned in the Strategy or pop into your local library to see a printed copy of the Strategy and for lots of material about climate change. Please let us know if you would like the Strategy in a different format.

This is just the start of our climate change response and we want to work with you to deliver the activities, so please take this opportunity to sign up to our Climate Change newsletter using this link <https://r1.dotdigital-pages.com/p/4BPJ-Q68/sign-up-to-our-climate-newsletter> to keep in touch. If there is anything you would like to share with us or you have any questions, please do contact us at climatechange@northyorks.gov.uk



Our Climate Change Strategy sets out how North Yorkshire Council will respond to the climate emergency by:

- ✓ Reducing greenhouse gas emissions
- ✓ Preparing for the climate changing
- ✓ Supporting nature to thrive

We will work with partners to achieve the ambition to be a carbon negative region by 2040 and encourage residents, businesses and visitors to take climate responsible actions.

Mitigation – reducing North Yorkshire’s emissions



A low energy and low carbon **built environment** powered by local **renewable energy**.



Easy, accessible, and affordable low carbon **transport** to enable active travel, public transport, and electric vehicles.



A low waste and **circular economy** with support for communities and businesses to reduce resource use and benefit from green economic growth.



Making the most of our land to **store carbon**.



Encouraging **everyone** to reduce carbon emissions.

Adaptation – preparing North Yorkshire for climate impacts



Ensuring that North Yorkshire is climate resilient: reducing exposure to, preparing for, coping with and recovering better from **extreme weather events** and global supply chain and health impacts that will become more intense and frequent.



We will draw up **climate adaptation plans to support infrastructure, services and residents** to prepare and adapt.



Adaptation for and by **nature**, enabling nature to adapt to changing habitats and using nature based solutions to cool our towns and reduce flash flooding.

Supporting Nature – helping the natural world, on which we depend, to thrive



Developing strong **forward plans and community partnerships** for nature.



Protect, enhance and link important nature sites and corridors and realise opportunities to grow sustainable economic prosperity.



Prioritise nature based solutions to climate change mitigation and adaptation.

North Yorkshire Council – becoming a Climate Responsible Council



The Council aims to be **carbon neutral by 2030** and will measure and report its progress annually.



A detailed **decarbonisation programme** will cover our buildings, fleet, and the goods and services we buy and how we use our **assets** to support nature.



Climate Responsible actions will be built into the Council’s **governance and culture**, training, impact assessments, officer groups, and regular progress reporting.

Our work will take place within a set of principles that ensure our climate change activity is fair, evidence-based, and represents good value. We will maximise the co-benefits of climate action to support a good quality of life and a greener, fairer, stronger economy.



We will regularly review this strategy and the action plan that will follow to ensure it is delivered and remains up to date. We will also monitor and report on our progress and publicly report our corporate and North Yorkshire wide carbon footprint.



1. Introduction

Over the last few years many people have become aware of what is causing our world to heat up and our climate to change. The burning of fossil fuels such as coal, oil and natural gas releases gases that form a blanket around the planet acting as a greenhouse to trap too much heat. These greenhouse gases include carbon dioxide, methane and nitrous oxide. The description is sometimes shortened to just carbon and reducing the gases is called decarbonisation.

How we humans and the natural ecosystems around us (that support society to thrive) cope with the changing climate is the biggest and most grave challenge that we face. The impacts of climate change on our everyday lives are outlined in section 2 below. Around the world, countries are uniting to reduce the level of greenhouse gases. The 'Conferences of the Parties', known as COPs are held around the world. Both COP26 in 2021, held in Glasgow and COP27 held in Egypt in 2022, asked us all to join in in that task. Advice from the Intergovernmental Panel on Climate Change (IPCC)¹ through to national Government is that we must also support nature recovery as part of our approach to climate change – we cannot do one without the other.

"There are tried and tested policy measures that can work to achieve deep emissions reductions and climate resilience if they are scaled up and applied more widely. Political commitment, coordinated policies, international cooperation, ecosystem stewardship and inclusive governance are all important for effective and equitable climate action" IPCC March 2023¹

In July 2022, recognising the scale of the challenge, the Council declared a Climate Emergency and requested this Strategy to set out how North Yorkshire Council (NYC) will play its part in responding to the challenge.²

From April 2023, NYC is responsible for all the local authority services previously delivered by eight local authorities in North Yorkshire. Further background and details of priorities and services of the new Council are outlined in the Council Plan⁴.

In 2022 the previous eight local authorities, along with the National Park Authorities, City of York Council and many other partners worked collaboratively with the York and North Yorkshire Local Enterprise Partnership (LEP) to create 'York and North Yorkshire's Routemap to Carbon Negative'⁶ (the 'Routemap'). This is an ambitious co-owned plan to deliver net zero by 2034 and reach our carbon negative ambition by 2040. The Routemap is very clear that successful delivery requires the combined, simultaneous and proactive commitment of business and communities as well as public sector bodies. In addition, delivery of net zero is dependent on a number of critical factors that are outside of the direct control of the York and North Yorkshire region, particularly national funding and policy change. As a result of this feedback, each of the Routemap sections sets out the risks and dependencies.

The Routemap provides a springboard for action which this Strategy capitalises on. We also benefit from the Yorkshire and Humber Climate Commission Action Plan which sets out 50 actions required at a regional scale.⁷



The formation of the new North Yorkshire Council presents the opportunity to fully respond to the Climate Emergency and play our part in delivering the Routemap.

- ✓ We need to reduce carbon emissions.
- ✓ We need to prepare for the changing climate.
- ✓ We need to support nature to thrive.

If our activities and those of our partners and residents tick all three boxes, we will be taking **climate responsible** actions.

The purpose of the NYC Climate Change Strategy (the 'Strategy') is therefore to outline the Council's response to the Climate Emergency and how we will help deliver the Routemap ambition for the region to be net zero by 2034 and carbon negative by 2040. The activities that we are proposing are attainable and realistic and mean that we can play our part in reducing the causes and impacts of climate change.

The green boxes throughout the Strategy highlight where NYC will act to achieve our purpose:

We will work with partners to help to achieve the shared ambition that the region is net zero by 2034 and carbon negative by 2040.

We will take climate responsible actions and encourage and enable residents, businesses and visitors to do likewise to achieve this shared ambition.

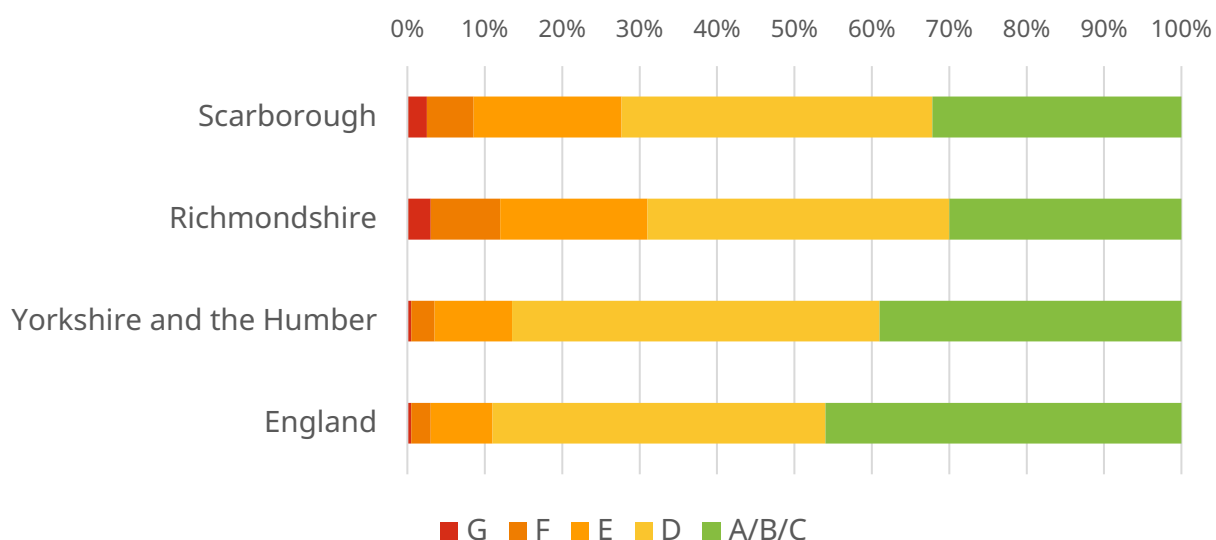
The Strategy sets out the current position in North Yorkshire, outlines our ambitions and proposes the Council's response to the Climate Emergency through reducing greenhouse gas emissions, adapting to the changing climate and supporting nature. It builds on the strategies and actions developed by the eight predecessor local authorities to NYC⁸. The Strategy outlines where NYC can best deploy its resources to make our contribution to the targets not only for our own operational activity, but also to support the residents, businesses and visitors in North Yorkshire to take climate responsible actions.

Climate change cuts through all services that NYC delivers, and we will consider how every service and 'lever' can support the achievement of the ambitions. Every service will need to transform to a greater or lesser extent to reduce carbon emissions, both directly and via its suppliers and customers to enable NYC, the region and indeed the UK to meet internationally binding emission reduction targets agreed at previous COP summits.

Every service delivered by North Yorkshire Council will consider how it will take climate responsible actions and support the region to be net zero by 2034 and carbon negative by 2040.

North Yorkshire has particular challenges in responding to the Climate Emergency in addition to those experienced nationally such as energy security and the traditional dependence on fossil fuels to power our economy.

- Over 85% of North Yorkshire is described as 'super sparse'. The rural nature of the area means travel and transport are harder to decarbonise. In addition, motorways and major roads contribute large proportion of emissions from 'through traffic' over which we have lesser influence.
- Our houses tend to be older and less energy efficient than in urban areas. The chart shows results of Energy Performance Certificate ratings from two rural areas within North Yorkshire, compared with the England Average (where A is the most energy efficient rating and G the worst).



- The limited electrical grid capacity in many places causes additional challenges in renewable energy supply to the grid and decarbonising options for transport and buildings.

But we also have great opportunities to support our ambitions:

- A strong track record of Local Authorities in North Yorkshire delivering climate change projects. You can see the existing climate action plans in the [‘supporting documents’](#) – these are still current, and we continue to implement them throughout the Climate Change Strategy Development period.
- Town and parish councils, local communities and businesses that are enthusiastic in supporting and taking climate action.
- People and communities of North Yorkshire who have such enthusiasm and resilience shown repeatedly in our respond to the Covid-19 pandemic challenges.
- Strong partnerships with organisations working across the region.
- Landscapes and natural resources to support all aspects of the climate emergency. North Yorkshire has extensive tree canopy, peat reserves, soil and grassland cover. These are often called natural capital assets.

- Leading research and technological advances in Yorkshire such as research into the Local Area Energy Plan⁹, and industry clusters for Carbon Capture and Storage, bio economy and green hydrogen production.
- Networks of innovative small businesses and skills providers and leadership to move towards a greener, fairer, stronger economy.

Working together across North Yorkshire, we can reduce our carbon emissions and support nature to thrive. We can and must prepare for climate change impacts. Taking action now will reduce costs and impacts in future years.



2. Climate Change Policy Context, Risks and Impacts

Our Strategy is guided by and will support a hierarchy of climate change related strategy and policy.

You can read more about these international and national policies using the links in the 'supporting documents' section ^{1, 5-7, 10-13}. All the strategies have the same key messages and priorities – to reduce greenhouse gas emissions, to adapt to climate change and to support nature recovery.



The overarching international policy is that set at the UN Climate Change Conference (COP21) which reached the historic 'Paris Agreement'¹⁰. The Agreement, supported by the Intergovernmental Panel on Climate Change (IPCC) sets long-term goals to guide all nations:

"Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change."¹¹

UK Government policy includes a number of laws which address climate change. The Climate Change Act 2008 sets out a range of measures to deal with climate change including emission reduction targets which the UK must comply with and carbon budgeting. The Climate Change Committee (CCC) was established as a result of this, as an independent statutory body, with a purpose to advise the UK and devolved governments on emissions targets and to report annually to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change¹¹. Other legislation includes the Planning and Compulsory Purchase Act 2004 which requires local planning authorities to have policies in their Local Plans securing that development and land use contribute to the mitigation of and adaptation to climate change. The Environment Act 2021 also contains further targets to protect the environment and to tackle the impacts of climate change.

Risks and Impacts of Climate Change

Climate change is not something we will see the effects of just in the future. We are already seeing changes in the UK climate, with average temperatures having risen by around 1.2°C over the last century. This might seem like a small change but even this can drive unprecedented weather events. For example, what used to be a 1-in-100-year flood event can become a 1-in-10-year event. The IPCC advises that we should prepare for warming up to 4°C and even if we do slow down global warming, sea levels will continue to rise from ice melt, something that cannot be reversed. We are seeing a trend towards warmer winters and hotter summers, sea levels around our coasts are rising by around 3 mm a year and there is evidence of changing rainfall patterns with more intense rain and windstorms. Information on the way that the climate will change is shown by the UK Climate Projections centre, produced by the Met Office¹⁴. This includes rainfall, temperature and sea level rise. These changes cause an impact on nature, our economy and on public health and wellbeing both in the immediate aftermath of an extreme weather event and over the longer term. The changes are identified as 'risks' and include:

- **Risks to nature:**

- Loss of biodiversity and habitats as plants and animals can't adapt quickly enough to climate change. This includes changing temperature and acidity levels of the marine environment, river water quality and changes to migration patterns.
- Loss of existing carbon stores such as peatland from drying out or forest fires. Local examples are the wildfires on the North York Moors such as those in 2003 pictured here.



Whitby Gazette

- **Risks to economic infrastructure:**

- Soil health, crop, livestock and forestry production decline due to loss of natural pollinator insects, water scarcity (including alterations to river quality), sea water flooding, rainfall erosion, wildfires and new invasive pests and diseases. These will impact on food production.
- Business locations such as industrial estates and supply chains and distribution networks are at risk for severe disruption of 'business as usual' and 'just in time' deliveries.
- Costs both in monetary terms and also mental health of 'clear up' from communities impacted by flooding or storms.
- Infrastructure failures such as public water supplies due to lengthy droughts, transport routes can be damaged by subsidence and extreme temperatures causing road and rail materials to become unstable. Telecommunications and electricity connections are also at risk if powerlines are damaged by extreme storm events and high temperatures.

The A59 is a key trans-Pennine route, which runs between Skipton and Harrogate. There is a long history of land instability and slippage above the A59 to the west of Blubberhouses at Kex Gill. This has led to number of landslides requiring works to stabilise the carriageway, resulting in closures or restrictions on the route, many lasting weeks or more. Even with this remedial work, the ongoing slope instability means there is still a high risk that there will be further landslips in the future. This could potentially result in long term closures of the A59 causing economic disruption in addition to being a risk to public safety.

With this in mind, the Council has developed a permanent solution which involves a major realignment of the existing route, away from the areas of unstable land. The Government awarded a grant of £56.1m with the remaining money (£12.5m) coming from the Council. Significant legal, planning and statutory work has been completed and the contract with the preferred contractor was signed in June 2023. The project, one of the largest in North Yorkshire Highway's history, is expected to complete in 2025.

"Climate change is the greatest global health threat facing the world in the 21st century, but it is also the greatest opportunity to redefine the social and environmental determinants of health." The Lancet (2022)¹⁵

- **Risks to human health can be summarised through the effects of:**

- Extreme weather causing increases in flash floods or prolonged high temperatures. Heat related death and illness will impact on our most vulnerable populations. People with long term health conditions, the very young and very old are more likely to be negatively impacted. During the 2022 heatwaves there were 3,271 excess deaths in the UK with all of us feeling the impact within our daily lives. Skin cancer and sunburn from increased exposure to ultraviolet (UV) light.
- Changing distribution of diseases. Increases in food, water and air borne diseases may be seen due to higher temperatures, drought, flooding, changes in habitat and rainfall patterns. Melting glaciers are also revealing new viruses and bacteria to which current plants and animals are not immune. Infectious disease spread is changing alongside our changing climate. Populations are at an increased risk of emerging diseases and co-epidemics, for example changes in response to infections due to the impact of increased temperatures for sustained periods on fever response and medication side effects.
- Overall changes in society including food availability and malnutrition, violence and mass refugee flow are anticipated due to lack of resources and global political tensions. Climate change will also worsen health inequalities placing additional pressure on health care organisations. Those currently experiencing the greatest health inequalities, and greatest socioeconomic deprivation are the people whose health will be harmed first and worst. The population who will likely feel the greatest burden of climate change, are those who contribute least to its causes, and lack resources to adapt, mitigate and protect themselves within our communities.

We must therefore take action to reduce these risks by responding to the Climate Emergency and this Strategy sets out how we will do that, based around 3 key themes:

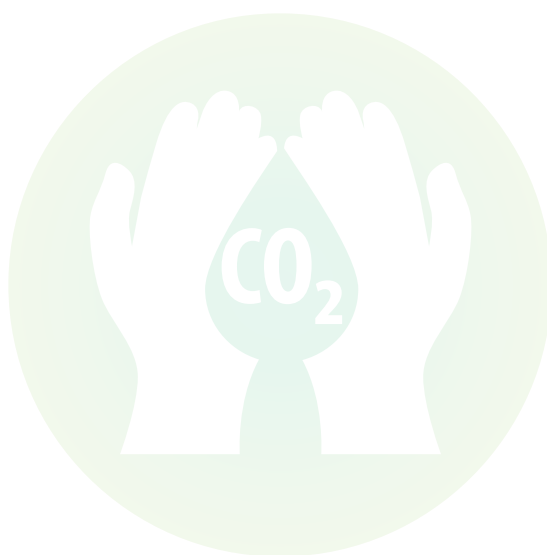
- **Mitigation:** Reducing our impact on the climate by decreasing greenhouse gas emissions.
- **Adaptation:** Preparing for the climate to change.
- **Supporting Nature:** Helping the natural world, on which we depend, to thrive.



3. What is the position for North Yorkshire and what are our ambitions and targets?

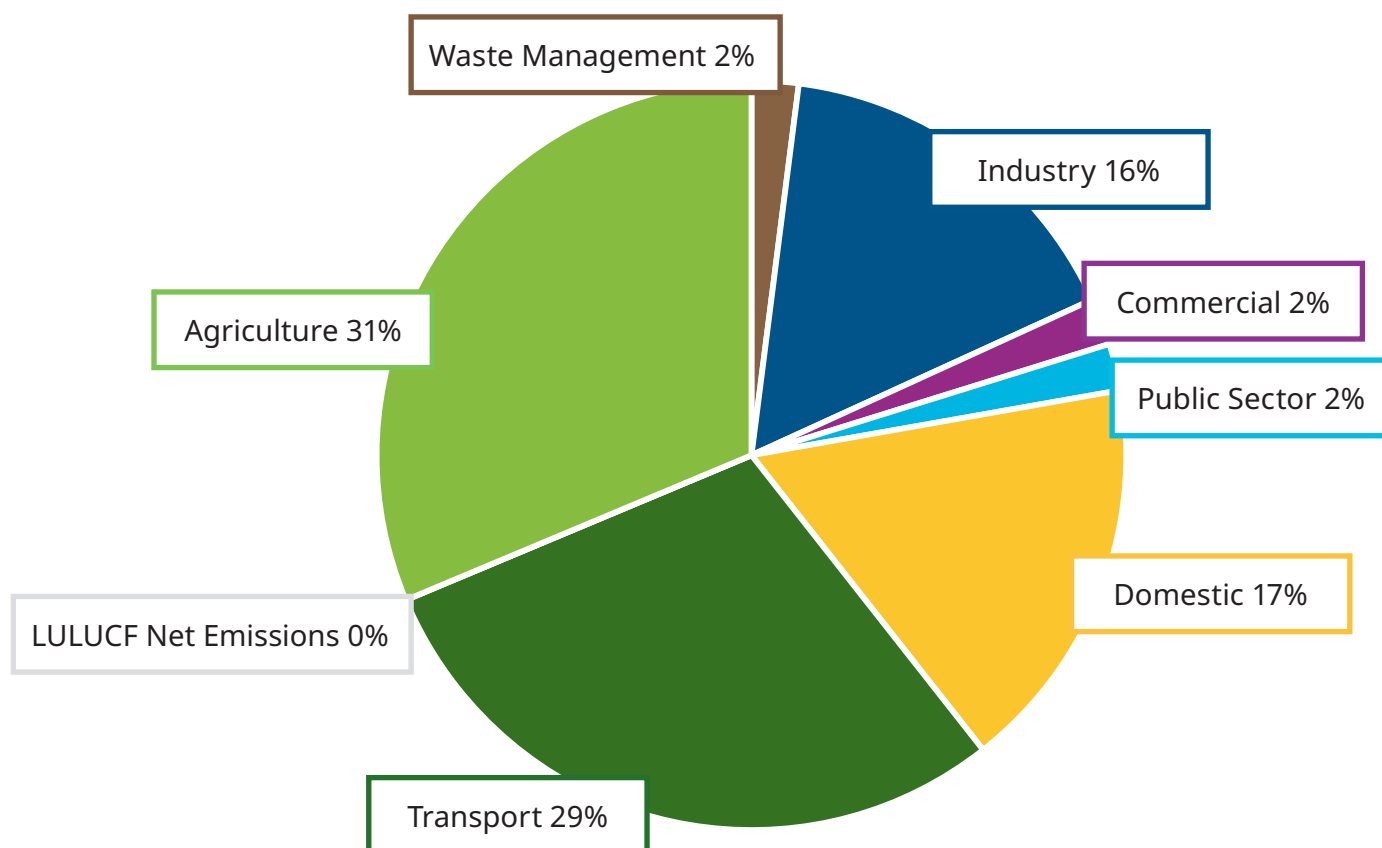
North Yorkshire is an attractive place to live, work and visit. Our county - the largest in England - has an enviable identity with a brand globally renowned for its culture and spectacular landscapes. The county has a varied and vibrant local economy, the lifeblood of which is defined by over 32,000 small and medium enterprises which form 99% of all businesses. There is a diverse and dispersed population of an estimated 620,610 people across a geographical area of over 8,000 square kilometres. Large parts of the county sit within two beautiful National Parks, and amongst three National Landscapes*. 11% of the area is covered with tree canopy and there is 67 km (42 miles) of coastline. 98% of the county is either sparsely or super-sparsely populated with just over a third of the population living in these areas. This results in a population density of just 77 people per square kilometre, compared with an average of 432 for England. We have over 9,200 km (6,700 miles) of roads and 4,000 km (2,480 miles) of footways which are maintained by the Council. In addition, there are around 240 km (150 miles) of 'trunk roads' such as motorway and major A roads that are maintained by National Highways. There are over 300,000 dwellings in North Yorkshire. NYC owns around 8,400 council homes and there are a further 27,000 housing units provided by Registered Providers of social housing across the area.

Greenhouse gas emissions for North Yorkshire are supplied annually by Government¹⁶. Data includes the 3 main greenhouse gases with the figure being shown as kilo (1,000) tonnes of Carbon Dioxide 'equivalents' (kt CO₂e) and is based on the 'production' of gases in the area, not 'consumption' based emissions from goods and services which we generate from importing products or travelling outside of the area. In 2021 North Yorkshire produced 6,391 kt CO₂e. The figures are broken down into 8 sectors shown in diagram 1:



*all Areas of Outstanding Natural Beauty in England and Wales have been renamed as National Landscapes, November 2023.

Diagram 1 [Note LULUCF is Landuse, Landuse Change and Forestry. As much of our land is a store of carbon, it has very low emissions as a sector.]



There are other datasets available which show 'snapshots in time' and these will be helpful in terms of targeting specific geographical interventions required. This includes the 'Scatter Cities' data¹⁷ and the CREDS place based calculator from 2018¹⁸.

A key document is the Local Area Energy Plan for York and North Yorkshire⁹ which identifies place-based energy supply and demand at a very detailed level, both currently and in the most cost-effective net zero future. The Plan contains detail on the technologies which will be most suitable to deploy where and identifies a range of no-regrets priority projects that are required to kick start decarbonisation and technology rollout across different sectors and parts of North Yorkshire. The Plan is being used to inform development of targeted investment and funding approaches and will be used to support the development of the Local Plan.

4. Ambitions and Targets

Climate change is clearly a global issue and all the nations on our planet have to act. International and national legally binding targets are our starting point. To tackle climate change and its negative impacts, most world leaders signed the historic Paris Agreement in 2015¹⁰. The Agreement sets long-term goals to guide all nations to substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2°C while pursuing efforts to limit the increase even further to 1.5°C.

The UK is committed to achieving this international goal and in 2019 became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The target will require the UK to bring all greenhouse gas emissions to net zero by 2050. The UK's 2050 net zero target — one of the most ambitious in the world — was recommended by the Committee on Climate Change (CCC), the UK's independent climate advisory body. 'Net zero' means reducing emissions wherever this is possible and balancing this with schemes to offset an equivalent amount of greenhouse gases from the atmosphere, such as planting trees or using technology like carbon capture and storage. It is also termed 'carbon neutral', although this term often implies a less emphasis on reducing emissions. The Climate Change Act requires the UK government to set legally-binding 'carbon budgets' which act as steppingstones towards the 2050 target and we are currently in the 'sixth carbon budget period' which seeks a reduction by 78% of 1990 emissions by 2035. The CCC indicates that the UK is "off track" in a number of key indicators in order to reach this target⁴¹.

At a regional scale, in York and North Yorkshire, the LEP has worked together with businesses, local authorities, communities and universities, colleges and schools to co-create the 'York and North Yorkshire's Routemap to Carbon Negative'⁶. This sets out an ambitious pathway to deliver carbon reduction at the necessary pace and scale to reach carbon neutral in 2034 and carbon negative by 2040. This ambition is included in the 'Devolution Deal' and will be a key priority of the proposed Mayoral Combined Authority (pMCA) from May 2024¹⁹.

"As part of its Net Zero strategy, the Government recognises that devolved and local government can play an essential role in meeting national net zero ambitions. Local leaders in York and North Yorkshire and elsewhere are well placed to engage with all parts of their communities and to understand local policy, political, social, and economic nuances relevant to climate action. This is why the devolution framework grants places the opportunity to adopt innovative local proposals to deliver action on climate change and the UK's net zero targets." - Devolution Deal point 82.¹⁹

The Routemap outlines a series of ambitions, targets and actions for York and North Yorkshire, across key sectors of Power, Buildings, Transport, Industry and Business and Land use, Agriculture and Marine. Diagram 2 shows just a snapshot of targets for all partners in the region to work towards and are not separated out for particular geographic areas of North Yorkshire or just for NYC to achieve. We describe (in section 7 below) the activities that we will prioritise to support delivery of the regional ambitions. We will provide a focus for climate action across North Yorkshire and will identify activities where we can lead, enable and influence climate responsible actions.



Diagram 2

Transport



Sales of zero emissions cars reach ca. 20,000/yr by 2038



Increase active travel for short journeys, ensuring walking and cycling accounts for 17% of distance travelled by 2038



Increase public transport share of travel by bus to 8% of all journeys and by train to 16% by 2030

Buildings and Industry



Retrofit of 250,000 homes to reach EPC C or better (reduced thermal energy demand)



270,000 heat pumps installed by 2038



Hydrogen equipment developed and deployed for industry

Land Use



Plant 37,000 hectares of new woodland by 2038



Increase amount of hedgerows in the region by 20% by 2038, alongside improvements in hedgerow width and health



100% of upland and lowland peatlands under restoration by 2038

Power



Upgrade the electricity infrastructure to enable over double the existing demand by 2038



Install an additional 2,500 MW megawatt (MW) of capacity from solar, onshore wind and hydropower by 2038



Install Carbon Capture and Storage (CCS) to large biomass and fossil plants, capturing 8 Mt CO₂/yr by 2030 and CCS retrofits onto Energy from Waste (EfW)

To support this, we have also set a target for **North Yorkshire Council to be net zero in its operational emissions by 2030**. This will include our operational activity over which we have decision making influence and control, including our enterprise companies. We will also work with the companies we buy goods and services from to support their decarbonisation journey. In some cases, there may not be a locally feasible solution to decarbonising.

Where we cannot reduce greenhouse gas emissions, we will improve the capture of carbon dioxide through increased tree planting – a process known as sequestration (recognising this is not an instant or quick fix) and we will investigate other ‘carbon capture and storage’ opportunities and technologies.

Our Strategy therefore covers the period to 2030. This is a fast-moving area in terms of data, national policy, changing infrastructure and innovative technological advances. Consequently, we will revisit the targets every two years when the Strategy is refreshed to review new and emerging evidence. This may include setting a carbon budget target to ensure that we are making sufficient progress.

We know these are extremely challenging and ambitious targets. We must accept that, at present, it may not be technically or financially possible to achieve them and they will require significant Central Government policy interventions to drive the economic and infrastructure systems to change which we will continue to work with partners to lobby for. However, we have set our sights high and are determined to achieve the targets where this is at all possible.

The Strategy will be delivered through an Action Plan written and refreshed every year based on evidence of performance and new policy or advances in technology. This will show how we are making progress and where we need to take further action. (See section 6 below for more detail on this).

We will develop a process as soon as possible, to accurately measure our operational carbon emissions and improve our ability to analyse and anticipate the pathway to net zero and when this will be achieved.



5. Principles and Co-benefits

We have adopted the following principles in both the development and delivery of the Strategy and recognised the co-benefits of taking climate responsible actions to ensure that our approach is efficient, effective and flexible.

(a) Principles

- i. **Equality of opportunity:** We want to enable equal access to the low carbon economy so that every person, business and community is able to take climate responsible action. At a global scale we want to ensure our climate actions do not inadvertently impact negatively on other geographical areas.
- ii. **Work and collaborate with partners** to share common goals, best practice and reduce duplication in our localities.
 - Public bodies: Including local, regional and national government, anchor institutions and our further and higher education and school partners. Preparing for the (proposed Mayoral Combined Authority (pMCA)) to ensure foundations are in place so that activities can transfer as appropriate and maximising the benefits of the Devolution Deal in North Yorkshire.
 - Private organisations: Including local business, utility companies and supporting NYC suppliers to decarbonise.
 - Voluntary and community groups: Including the community energy groups, community based circular economy projects and community businesses.
 - Resident engagement: dialogue and feedback with communities, particularly young people.
- iii. **Using the Evidence:** Using data and behavioural insights to maximise successful impact of interventions and ensuring confidence in 'big ticket' investments through feasibility and business case planning. For example, the Local Area Energy Plan⁹ supports a spatial approach to energy investment to indicate the most appropriate technology is used preventing stranded assets. We want to be flexible and adaptive to accommodate new legislative and policy issues, technological advances and databased evidence.
- iv. **Financially aware:** We will support capital investments with behaviour change activities to ensure effective outcomes and take a risk-based approach to delivery to encourage innovative solutions. We will ensure climate responsible actions contribute to sustainable economic growth and that residents and businesses are able to benefit from the low carbon economy with the skills they need. We will maximise external funding opportunities by ensuring we are aware of these and plan for them.

(b) Co-benefits

This Strategy recognises the tremendous ‘co-benefits’ and ‘co-dependencies’ from climate actions as we move into a low carbon economy. This is where climate activity also has a positive impact on other priorities, services and outcomes for communities.



- i. **Public Health:** The impacts of climate change will result in poorer health outcomes and greater health inequalities. However, the activities undertaken to tackle climate change will have a positive impact. Improved housing energy efficiency reduces fuel poverty, increasing active travel supports healthy living and improving air quality and access to greenspace that can result from climate change activities all support people to live healthier lives experience many co benefits that lead to substantial health gains and reduced health risks. As a result, the benefits and challenges to health from climate change and associated policy are cross-cutting in all areas.
- ii. **Improvements in air quality:** This is anticipated as we move into the low carbon economy, according to the Government department for Environment²⁰. As air pollution is a complex mixture of different chemicals, the individual potential each low carbon measure has to generate cleaner air strongly depends on which pollutant is being considered. For example, increased uptake of electric vehicles has the potential to support reductions in road transport emissions of nitrogen oxides (NO_x) and fine particle matter, which are the main cause of breaches of the Air Quality Regulations and has led to the declaration of several Air Quality Management Areas in North Yorkshire²⁰.
- iii. **Economic Development:** As we move to a low carbon economy there are many opportunities to embrace new technology and use natural capital to support ‘clean’ economic growth. To maximise economic benefit locally from these opportunities, we will work with local businesses and inward investment to build supply chains and grow the skills base to support employment, circular economy and community owned businesses.
- iv. **Resilience and vulnerability** to economic shocks such as the energy price rise and to temperature shocks such as heatwaves is no longer a technical question, it is real for us here in North Yorkshire. Taking climate responsible actions will improve climate resilience for everyone and bring people together to develop solutions for local places such as community owned assets and improved access to greenspaces. Building resilient communities that can respond to the challenges ahead and adapt is essential.
- v. **Financial:** Reducing our energy use and increasing renewable energy generation and security will reduce energy prices for everyone, not least the public sector services.
- vi. **Environmental:** Improved access to high quality greenspaces, improved air quality in town centres, reduced flood risk, protected and enhanced landscapes all result from climate responsible action.
- vii. **Rural Commission and Rural Task Force outcomes³:** The actions outlined in the Strategy will help to achieve the beautiful, connected and future facing thriving rural communities.

6. Delivery of the Strategy – Activities and Performance

This Strategy outlines the approach NYC will take to tackling causes and impacts of climate change and comes at the right time for our new Council. However, taking climate responsible actions is the key to making a difference and we will do this through closely monitoring and driving the delivery of the Strategy 'on the ground'. To do this we will create a Climate Change Action Plan, set milestones and targets and regularly review progress, keep local people involved and consider how we will fund the activities.

(a) Climate Change Action Plan:

The Plan will be drafted by December 2023. Initially, it will bring together the current eight Action Plans from the previous North Yorkshire Local Authorities (you can find these in the 'supporting documents') and the implementation plans being developed for the Routemap. By 2024, it will also have a directorate and service level focus to identify how each part of the NYC will contribute to the targets. The Action Plan will provide milestones and targets and a timeline for delivery of the Strategy and prioritisation of actions and will meet the requirements of the ISO Net Zero Guidelines agreed at COP27 in November 2022²².

(b) Performance Management:

Measuring how the Strategy is being delivered and what impact it is having will demonstrate progress towards our ambitions and identify where we need to take alternative actions. To ensure delivery the following governance process will be operated:

- i. **NYC Transport, Environment Economy and Enterprise Scrutiny Committee** will review Strategy impact and Action Plan progress twice a year with an annual update and report to the Executive. The Strategy will be refreshed every two years to take account of new information and advances in technology.
- ii. **The Beyond Carbon Board** (Lead officers within NYC) will continue to monitor operational carbon reduction activity and widen their remit to include Climate Change Strategy and Action Plan delivery at bimonthly meetings (6 per year). The Corporate Risk Register will also be maintained to reflect climate change risks and impacts.
- iii. **Operational Groups** will be established as required to drive delivery of particular sectors such as transport, housing retrofits and where there are multiple Council touchpoints in delivery such as to the school network. These may be in conjunction with other partners (including protected landscapes) and the LEP to avoid duplication, particularly in transition to the pMCA.
- iv. There is potential to support the establishment of an **external reference group** of public, private and voluntary sector organisations to review progress and support NYC on climate change issues. We will work with regional partners to explore options.



(c) Communications and Engagement:

Encouraging everyone to take climate responsible choices. Only by working together with residents, communities (including Town and Parish Councils, communities representing places or specialist interest groups and our business community) and visitors in North Yorkshire to take climate responsible actions can we achieve our ambitions. Embracing ideas and opportunities, sharing best practices to repeat and scale up and working collaboratively with partners is key for the Strategy and in providing confidence that NYC is addressing climate change and supporting our residents in this period of unprecedented energy price rises. During the development of the Strategy, we spoke to many community-based groups around North Yorkshire and everyone was keen to keep the dialogue going across the County.

We asked residents businesses and visitors for their views on climate change and on the draft Strategy through the Let's Talk Climate survey and other feedback. We received over 1,700 responses.

Most respondents welcomed NYC taking a lead on climate change and wanted people to take as much action as possible, as fast as possible and for NYC to never miss an opportunity to take action.

The Let's Talk survey indicated that 73% of responses are from people who say they worry a lot or a fair amount about climate change. Most people said that they had taken actions at home to tackle climate change such as recycling and reducing energy consumption.

Survey responses show the highest priority key actions, with following actions most commonly ranked in the top three priorities:

- Energy efficient built structures (ranked as a top three priority in 59% of responses)
- Renewable energy growth (54%)
- Encouraging everyone to reduce carbon emissions (47%)
- Travel and transport (46%)
- Reduce waste (35%).

In the free text responses, the most often used terms were public transport, increase use of EVs and increased use of renewable energy in general, providing it is suitable for that location, with particular reference to rooftop solar energy generation and ensuring that new housing is in the right place to reduce travel needs, is energy efficient and supports nature and biodiversity. The importance of carbon storage in peat reserves was highlighted and that the priority should be on reducing carbon emissions as much as possible rather than on capture and storage.



Knaresborough's Town Crier
on Market Day, April, 2023

Feedback in the 'adaptation' section was limited indicating that this is a relatively new area for consideration for most people.

In the 'supporting nature' section, the most frequent suggestions were to improve the amount and quality of tree planting, open green spaces and ensuring new housing supports nature. Several people indicated that economic growth must also benefit the natural environment.

Areas where people wanted NYC to put more emphasis on were the influence of the Council in improving the electrical grid capacity, which is seen as a major barrier to decarbonisation and helping communities to develop and delivery local projects, in particular community energy. Increasing activities to support agricultural decarbonisation was also indicated and the key role of the Local Plan system in tackling climate change was highlighted.

A survey was co-designed by Harrogate Youth Council for Young People under 25. Key concerns in response to that survey included the role of large corporate businesses, deforestation, reducing the production and use of 'single use plastics' and protecting public green space and the marine environment. The importance of individuals taking personal responsibility for climate actions was also raised.

If you would like to see more detail on the feedback we received on the draft Strategy, please do contact us at climatechange@northyorks.gov.uk.

We need everyone to think about their daily choices and to take climate responsible actions. People may make travel or housing choices for a range of reasons and for co-benefits such as saving money or improving their health. Working with partners across North Yorkshire and with the Public Health Behavioural Insights team, we can ensure communications about climate responsible choices are effectively targeted and that investments in areas such as cycle paths, EV charging points, public transport, housing efficiency programmes and waste contracts are successfully reducing carbon emissions for the 'end user'. Small businesses are the backbone of the North Yorkshire economy, and we will ensure that they and NYC's many suppliers for goods and service have the skills needed to support sustainable economic growth and to take advantage of new low carbon technologies and opportunities. Communities across North Yorkshire are actively promoting climate positive actions and there is support available from voluntary sector support organisations and specific advice in areas such as community energy. Our School's Energy and Sustainability Service and Youth Services in North Yorkshire provide the opportunity to engage children and young people in taking climate responsible actions. These are great resources to build on, sharing best practice and supporting learning from each other.

As part of the **UK Shared Prosperity Fund**²³, North Yorkshire Council and the York & North Yorkshire Local Enterprise Partnership **has developed two support programmes to support decarbonisation**, one for businesses and one for community groups. To ensure these programmes are fit for purpose, co-design sessions were held in Selby, Skipton, Scarborough and online with North Yorkshire businesses and community groups. The sessions explored the challenges and opportunities in relation to net zero, as well as what support should be provided through the programmes with a wide range of organisations represented. Using all the feedback from the sessions the two support programmes were launched in September 2023.



We will work with partners to develop climate change awareness and actions approach to enable individuals, organisations and businesses to make climate responsible choices.

- Share performance data
- Provide opportunities for communities and businesses to share best practice, (from international through to local examples), celebrate success and scale up local initiatives through real life and online collaboration spaces and e-newsletter.
- Provide access to information about climate change through the libraries network as trusted local hubs
- Support young people to get involved in climate change action
- Develop and amplify climate communication campaigns



(d) Financing the Strategy

The Council delivers a wide range of vital public services and severe cost pressures are anticipated due to the Covid pandemic, current energy crisis and inflation, the impacts of which are anticipated to last many years. It is our role to balance the cost of taking actions and the implications and cost of not taking actions which will be felt by both the Council and by our communities. However, the scope and approach adopted in the Strategy also has the potential to reduce public service costs through reducing both energy use and demands for public services through the co-benefits. For example, by improving local energy security and providing commercial opportunities for the Council, local businesses and community enterprises.

- In some cases, such as policy and behaviour change, there will not be a financial cost to activities as they become 'business as usual'.
- In other cases, pump priming or 'up front' feasibility studies, investment grade business plans and smaller scale capital costs will be required to change to low carbon infrastructure. This may in turn lead to decreased revenue or running costs both for the Council and for residents and businesses, such as through reducing energy costs. Business cases will indicate return on investment. The North Yorkshire Shared Prosperity Fund is an example where we are using 'levelling up' funding to support communities and businesses to decarbonise.
- For larger scale infrastructure interventions, substantial financial investments may be required and Government grants, Devolution Deal finance, emerging financial instruments and private sector partnerships will be explored to support investment. We must be ready to bid for and prepare investment grade business cases for projects to ensure delivery of the Strategy.

NYC has recently been successful bidding for Home Upgrade Grant: Phase 2 (HUG2), securing £14.5m, allowing for energy performance and heating systems in off gas grid homes to be improved. As well as this, NYC has successfully bid for the Local Electric Vehicle Infrastructure (LEVI) grant where a total of £3.237m has been awarded⁴⁰.

- Climate change projects have the potential not only to reduce costs, but also to generate income. Feasibility studies will be used to identify commercial operating models and sustainable business models.

We will ensure we are ready and prepared to seize all appropriate opportunities for additional funding to help achieve the ambitions for the Council set out in the Strategy and for the region in the Routemap.



7. Key Theme 1: Mitigation

This means reducing our impact on the climate by decreasing greenhouse gas emissions that are produced in North Yorkshire. This is done by:

- Decreasing production of the greenhouse gases by reducing energy demand and modernising agricultural processes.
- Generating and storing low carbon energy such as solar power as an alternative to fossil fuels.
- Capturing greenhouse gas emissions and storing them in organic sinks such as trees, hedgerows, grasslands, peat and seaweed (kelp) and capturing carbon from industrial processes.



The Local Area Energy Plan⁹ for North Yorkshire, completed in December 2022, will support decision making as to when, where and how we can undertake these measures most effectively. Mitigation provides many opportunities for investment in the low carbon local economy. Equipping people and businesses in our area to benefit from new technologies and developing new skills is essential through all our priorities particularly supporting the work of the LEP.

Although mitigation activities will be delivered through every service, there are priority areas, where NYC services can best be deployed to have the greatest impact, and these are described below.

The Routemap priorities which NYC can help to deliver for the built environment are to:

- Retrofit buildings at scale to reduce energy demand
- Phase out fossil fuel use
- Future proof new buildings
- Ensure Hydrogen readiness



Our mitigation priorities:

(a) The Built Environment – where people live, work and relax in places like houses, offices shops and industrial sites, town centres, sports centres and community buildings. The Local Plan and economic regeneration programmes will help to ‘shape’ our places in North Yorkshire. NYC itself is responsible for many ‘built assets’ such as houses, industrial estates and even castles and harbours but 17% of carbon emissions in North Yorkshire are from the domestic housing sector. Improving the fabric of buildings to reduce energy demand and decarbonising heat in buildings is called ‘retrofitting’ and making these changes provides homes and

properties that are easier to heat and healthier to live and work in, including reducing air pollution. This is a particular challenge in North Yorkshire due to the age and traditional construction of the building stock and the high-quality protected landscapes and historic listed buildings which require specific retrofit actions. However, there is central government financial support for housing retrofit and building decarbonisation and we need to be ready to take advantage of that investment in this area. We must also ensure new buildings are 'future proofed' so they are both energy efficient and adapted to climate change impacts.

To mitigate carbon emissions from the built environment we need to:

- i. Retrofit commercial, community and residential properties and assets using a 'fabric first' approach.
 - Improve energy efficiency of buildings, homes and assets such as streetlighting.
 - Decarbonise heating in buildings through using low carbon technology (such as 'District Heating') and renewable energy.



In 2021, Hambleton District Council's leisure services secured £4.7m Government Public Sector Decarbonisation Scheme (PSDS) funding to install energy saving systems across their portfolio of leisure centres. Following delays brought about through Covid-19 and various grid infrastructure issues all work was completed by December 2022. This included the installation of Air Source Heat Pumps (ASHPs), solar panels, battery storage, LED lighting, smart metering and upgrading the electrical infrastructure. It is estimated that the work will result in an annual carbon saving of 601ktCO₂e. Pictured to the right is Craven Leisure Centre which has had similar energy saving systems installed.



- Support home and property owners (including landlords) to retrofit properties, including through the use of regulatory enforcement powers. Working with partners to develop and deliver a York and North Yorkshire Retrofit Strategy to improve access to advice and finance and developing the local supply chains and skills required such as installing and maintaining air source heat pumps.

Through the 'Hitting Hard' project, Scarborough Borough Council and Richmondshire District Council developed an action plan of how to effectively deliver retrofit for 'hard to decarbonise' homes. Through the implementation of large scale retrofit programmes across North Yorkshire we have identified a particular challenge in targeting older, technically difficult properties in heritage areas and protected landscapes. This project has provided the technical details to better plan future work programmes to include more tailored building measures and improved access to data. These outputs will be integral in developing a retrofit strategy and will be at the heart of future retrofit projects.

ii. Ensure new buildings are designed to be 'climate responsible'.



- Use Local Plan and building control enforcement to ensure new properties are sustainable do not require retrofitting in future. Influence national policy agenda to improve standards and viability assessments for developments.
- Help North Yorkshire businesses to gain skills and win contracts to develop low carbon buildings, including 'biobased' construction.

We will work with partners, communities, and businesses to scale up building retrofit projects and increase low carbon heating, including for NYC's social housing stock.

(b) Travel and Transport – how we travel around in our daily lives; to work, to visit, to shop and to enjoy ourselves.

The transport sector is responsible for 29% of carbon emissions in North Yorkshire and also contributes to poor air quality. This comes from the way that people travel and how goods are transported within and through the area in vehicles fuelled by petrol and diesel 'internal combustion engine' (ICE) vehicles. Most of our city, towns and villages are rural meaning that we sometimes have to travel long distances to get to shops, schools and healthcare, as well as getting to work and opportunities for low carbon refuelling are limited. The distribution of development such as housing and commercial premises is guided by the North Yorkshire Local Plan. Whilst this is in development, the existing Local Plans from the former seven District Authorities are still in place.

The North Yorkshire Local Transport Plan sets out our plans and strategies for maintaining and improving all aspects of the local transport system. The next version of the plan, due by the end of 2024, will also set out how we will contribute to quantifiable carbon reductions of the impact of transport in North Yorkshire.

The Routemap priorities for transport which NYC can help to deliver are:

- Increase active travel
- Decarbonise and increase use of public transport
- Enable the shift to low carbon vehicles
- Enable cleaner logistics (the movement of goods and products)
- Ensure hydrogen readiness



The road infrastructure is managed at various levels. National Highways are responsible for motorways and major road network whilst NYC is the Highway Authority, responsible for all adopted roads and footways within North Yorkshire and for the management, maintenance and improvement of the highway network, including public rights of way. To promote safe active travel ('walking and wheeling') routes NYC also produce 'local cycling and walking plans' and speed management policies.

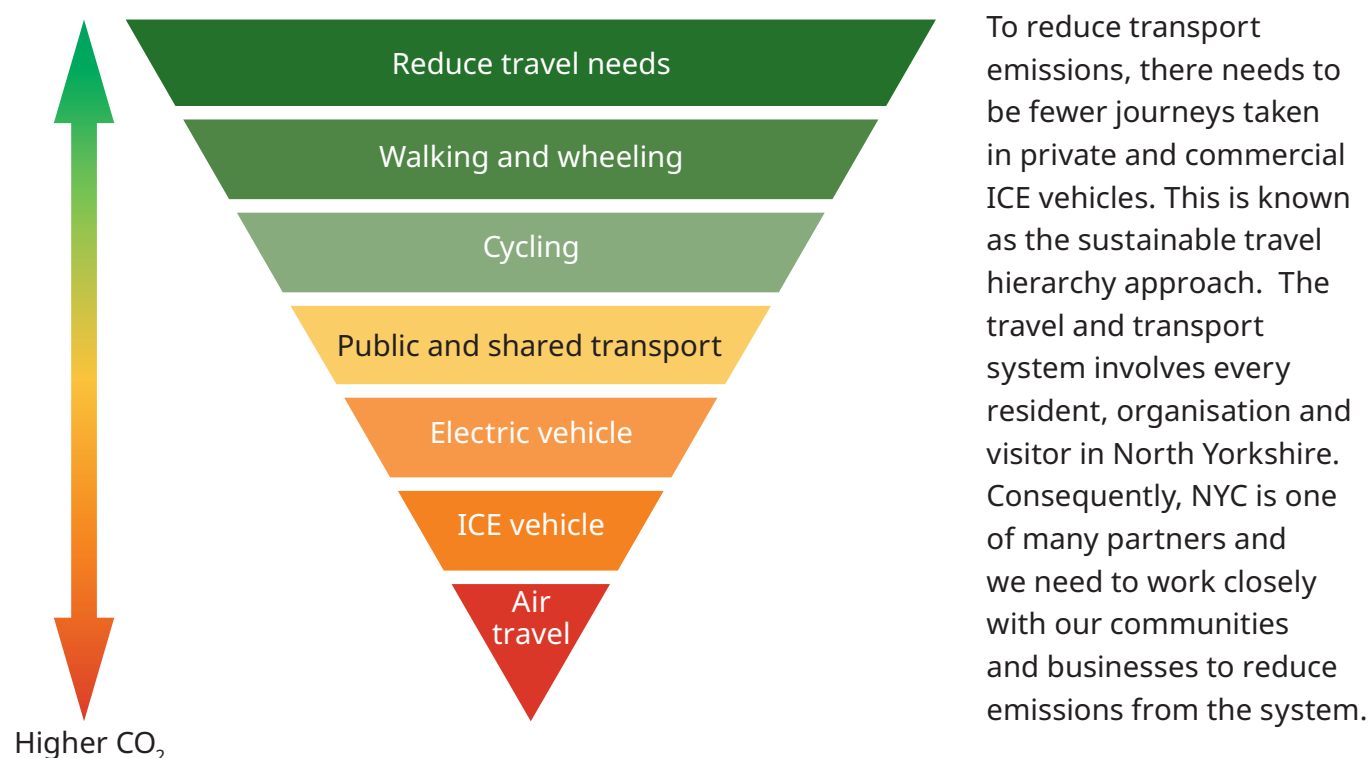


In terms of public transport provision, NYC strategy is to ensure that as many communities as possible continue to have access to at least one service centre via a public or community transport service and that these services give value for money and are focused on services which meet the day-to-day transport needs of local communities.

Whilst the Council does not operate any rail networks, we do provide strategic input to rail matters locally and regionally to ensure residents, visitors and businesses have appropriate access to the rail network and we are able to support customers to use rail transport through 'place shaping' infrastructure measures at stations and through the community rail partnerships.

The Council has also developed a strategic approach to Electric Vehicles Charging Points (EVCPs), installed many public charging points and secured over £5m for further installations.

There are many examples of community groups in North Yorkshire that support a wide range of transport options responding to local travel needs.



[Sustainable Travel Hierarchy adapted from Energy Saving Trust²⁴]

To mitigate carbon emissions from travel and transport we will reduce travel in fossil fuel vehicles by:

- i. Reducing the need to travel by improving access to digital services and ensuring services are provided close to people's homes, workplaces and businesses.

We will continue to improve high speed broadband and mobile telephone coverage across North Yorkshire through the NYNET²⁵ programme.

- ii. Increase walking and cycling opportunities for shorter trips through providing safer routes, 'Local Cycling and Walking Plans', training through 'Bikeability' and innovation using e bikes, e-scooters and community-based projects.

Local E Motion: Richmondshire District Council and Scarborough Borough Council commissioned a series of studies on electric powered personal transport options through the Community Renewal Fund. Four locations were chosen: Eastfield and Whitby in Scarborough and Catterick Garrison and Hawes/Leyburn in Richmondshire. This study looked at e-scooters, ebikes, demand responsive travel and car clubs. After public consultation and an analysis on the most effective schemes for tackling emissions and inequality a feasibility study was completed to advise on how to take the schemes forward.²⁶



- iii. Enable and support people to choose multi person travel options, such as public transport (buses and trains), community-based transport, demand responsive travel, car share and car clubs.



Co-wheels, a social enterprise company operating a pay-as-you-go car rental scheme in Harrogate (facilitated by Harrogate Borough Council in 2020) aims to reduce dependency on vehicle ownership and consequently removes private vehicles from the roads. To date an estimated 10,950 kg CO₂ has been saved if the same mileage had been completed in the average private vehicle.

- iv. Increase access to 'alternative fuels' for personal and commercial vehicles. Implement the NYC EV Charging Strategy,²⁷ investigate the feasibility of green hydrogen and other low carbon fuels as technology develops.
- v. Ensure all low carbon travel choices are supported by the Local Plan making process and Neighbourhood Plan place making and Local Transport Plan and promote sustainable travel options to residents, businesses and in the visitor economy.
- vi. Ensure that North Yorkshire has the skills required to support low carbon travel options.

We will have a Local Plan in place or progressed as far as possible by 2028, which responds to the climate emergency.

We will aim to have the Local Transport Plan for North Yorkshire in place by Summer 2024 (subject to Government guidance).



(c) Waste and Circular Economy – Reduce waste, waste management

emissions and the need to create new resources.

By reducing the amount of waste that we create and by finding new uses for that waste, we reduce the need to create new resources which uses energy. This approach is called the 'circular economy' as it keeps goods in circulation for longer and reduces emissions from the things that we buy that cause greenhouse gases outside of North Yorkshire - these are called *consumption emissions*. The Council is responsible for both waste collection and disposal in collaboration with City of York through Yorwaste and Allerton Waste Recovery Park and various recycling organisations. This presents an opportunity to speed up the pace of change for waste reduction and use of new technology for reuse, recycling and decarbonisation of the waste system.

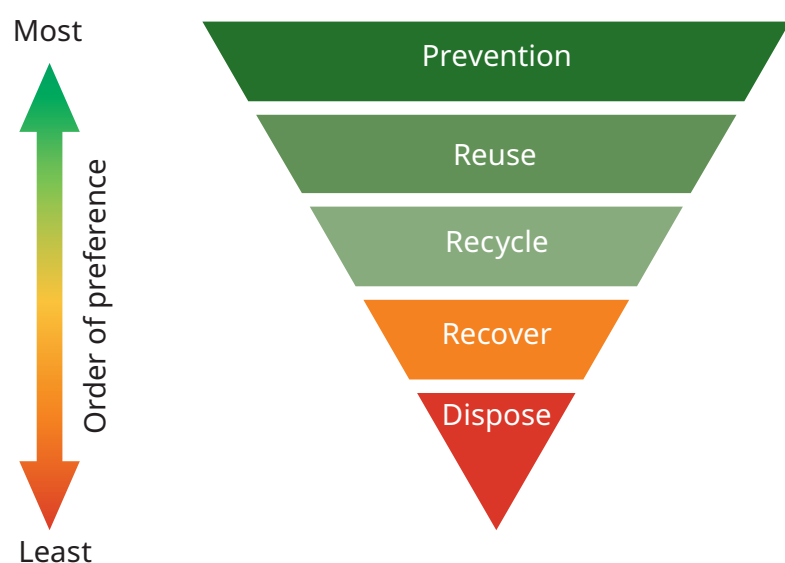
New waste reduction legislation included in the Environment Act 2021 such as consistent collections (including food waste); the deposit return scheme; and producer responsibility obligations will change both the type of waste we collect and way it is collected. We will be able to improve messaging to residents, reducing confusion over what can be recycled and support local community initiatives which eliminate unnecessary waste such as repair cafés and Reuse stores.

The Routemap priorities for waste and circular economy which NYC can help to support delivery of include:

- Accelerate Carbon Capture , Utilisation and Storage (CCUS)
- Improving energy and resource efficiency
- Move towards circular business models and sustainable supply chains



To mitigate carbon emissions from waste we will:



- Take the 'waste hierarchy' approach to our waste management. We need to encourage behaviour change to reduce, reuse and recycle to minimise waste. We will focus on reducing the need for unnecessary single use plastics and reducing food waste. We will not replace products until the end of their effective life and will consider eco-design and longevity when purchasing products.

The North Yorkshire Rotters are a group of volunteers supported by North Yorkshire Council. They promote home composting, reduce, reuse and recycling and the 'love food hate waste' campaigns at events and offer free talks and school workshops across North Yorkshire. These campaigns highlight the practical ways that our residents can reduce waste, save money and help the environment.²⁸



- ii. Investigate the options to decarbonise the waste collection and disposal systems in North Yorkshire including at Allerton Waste Recovery Park.
- iii. Support delivery of the York and North Yorkshire Circular Economy Strategy¹³ in policy development and support businesses and communities to deploy 'circular' projects to create a competitive circular economy. Policies such as the Economic Development Strategy and Procurement will influence this area.

Circular Malton & Norton's Eden Circular Hub is intended to be a UK showcase, combining a community based anaerobic digester facility generating clean energy from local commercial food waste, with the provision of innovation support services in the field of sustainability, bio and circular economies. Such innovation support is a first for a rural area, thereby creating accessibility, enabling businesses to boost productivity and resilience and through education, exciting the younger generation and signposting opportunities as well as upskilling for all. The community feedback shows this concept creates excellent pride in the town and activates local people to realise their actions will make a difference in addressing climate change.



(d) Renewable energy transition – increasing the amount of energy we generate and store from renewable sources such as solar power, hydro, geothermal and emerging technology and markets for 'green' hydrogen is an important priority, after the energy reduction measures outlined above (a) to (c). Renewable energy also includes 'Energy from Waste' from the Allerton Waste Recovery Plant through anaerobic digestion and incineration. Renewable energy is an opportunity for economic growth for our businesses. However, developing large scale renewable energy generation is a particular challenge in our rural areas due to the lack of capacity of the national electrical grid infrastructure and competing demands for land use. Energy security is now a national priority and the opportunities we have in North Yorkshire to generate reliable, affordable and smaller scale, localised community owned power is becoming a reality. We need to ensure the right scale technology is used in the right place.

The Routemap priorities which NYC can help to deliver include increase in low carbon energy generation.



To mitigate carbon emissions by increasing renewable energy generation we need to:

- i. Plan for renewable energy generation. The Local Area Energy Plan (LAEP)⁹ shows us where and when renewable energy could be developed and where it will be needed.
- ii. Lobby, with partners, for improvements to the electrical grid capacity which will enable LAEP implementation at scale and speed.
- iii. Increase renewable and low carbon energy capacity at differing scales such as on individual buildings, carparks and harbours and at large scales such as solar parks.
- iv. Support innovation in energy storage including battery storage and green hydrogen production and storage.



There are two former landfill sites both operated by Yorwaste (a company jointly owned by NYC and City of York Council (CYC)) which could generate renewable energy. There is potential for solar power generation at both sites, potentially with addition of wind subject to further investigation. Both sites have potential for up to 28 MW of solar capacity with around a further 4 MW of wind so a total opportunity of up to 64 MWs of installed capacity which could produce up to 78,000 MWhs of electricity per year (equivalent to around 27,000 households) which would also exceed the combined electricity used by both the former North Yorkshire County Council and City of York Council. In addition, the solar power has the potential to manufacture green hydrogen on site as a fuel for larger vehicles.

- v. Support community energy projects and co-ops to improve local energy security, create community owned assets and overcome grid constraints. Working with organisations supporting community energy capacity in the region and sharing information.



- vi. Ensuring North Yorkshire has the skills to take forward renewable energy transition.

We will investigate how NYC assets such as land and buildings can best be used to generate low carbon energy. This includes opportunities at the jointly owned assets Energy from Waste plant and closed landfill sites.

(e) Agricultural emissions – supporting North Yorkshire’s agricultural economy to decarbonise and to decrease air and water pollution.

North Yorkshire has a strong agricultural economy with both food security and many businesses dependent upon land-based industries both directly and indirectly such as food manufacturing. The landscape and settlements that we cherish have been created by the types of farming that happen here and this also supports the visitor economy. However, emissions from agriculture are 31% of the North Yorkshire



total. As a Council we have less interaction with this sector than other economic sectors, but we can work in partnership to support decarbonisation activity.

- i. Support agricultural businesses to calculate and reduce their emissions and increase the carbon storage capacity of their land through partnerships such as protected landscapes and Grow Yorkshire initiatives.²⁹
- ii. Increase supporting / innovation efficiency of food production through low carbon technologies.
- iii. Support local food supply chain initiatives such as reducing food miles, and improved quality to encourage sustainable diets. The North Yorkshire Food Strategy will lead this work.



'Farming in Protected Landscapes' funding is managed by National Landscapes and National Park Authorities to deliver on four priorities – climate, nature, people, place. The programme currently runs during the Agricultural Transition Period to 31 March 2024. The programme allows farmers and land managers located within protected landscapes to receive funding for projects on their land that will achieve the priorities. It is an ideal way to address both agricultural decarbonisation and adapting to climate change at a landscape scale. In Nidderdale National Landscape a variety of projects have been funded including soil carbon audits, tackling invasive non-native species, training for regenerative farming, tree and hedgerow planting, soil health and sediment reduction.

(f) Capturing and storing carbon – where we cannot decrease emissions through the activities outlined (a) to (e) above, we need to capture and store them to reach net zero. Carbon Dioxide that is released from fossil fuels can be removed from the atmosphere by natural processes such as growing new trees and protecting carbon stores such as existing woodlands and peat bogs. This is best achieved in partnerships such as the White Rose Forest, Yorkshire Peat Partnership and local community scale. It can also be done through industrial technology processes 'Carbon Capture and Storage' (CCS). The carbon must be locked away permanently to ensure this process is effective and existing carbon stores such as mature trees and peatland must be preserved.

To mitigate carbon emissions using capture and storage we will:



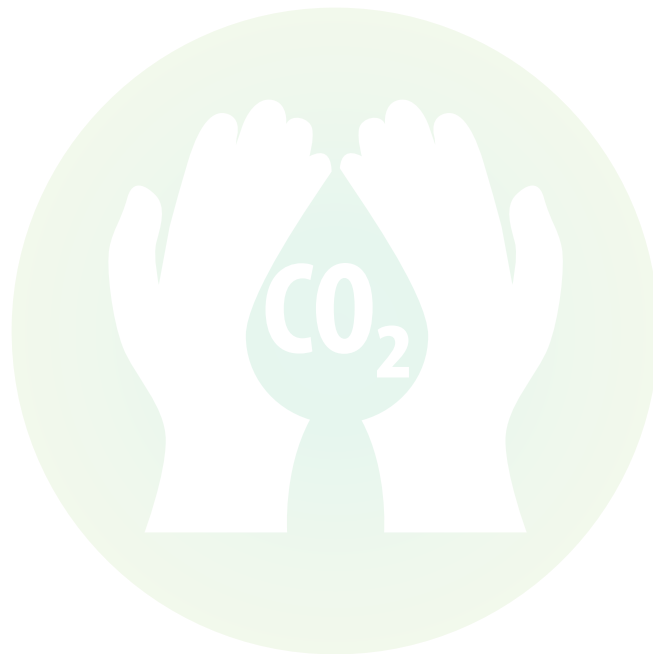
- i. Encourage the use of farming techniques to store carbon in the landscape such as regenerative agriculture, tree, hedgerow and soil management.
- ii. Increase new carbon storage capacity, through the number of trees and hedgerows planted and protected and ensure North Yorkshire has the skilled workforce to manage the increased treescape. There is also potential to develop kelp forests in the marine environment.
- iii. Preserve existing carbon stores such as peatlands and mature trees, including carbon storage of 'fallen timber'.



Peat restoration - Jenny Sharman YPP

North Yorkshire contains 90,600 hectares of upland peatland - 24% of England's total – storing over 40m t CO₂e. By 2022, the Yorkshire Peat Partnership had bought 44% of this into restoration management. In 2021/22 they blocked grips and gullies with 18,000 dams and baffles and planted over 1.2m native plug plants.³⁰

- iv. Support regional partners to develop large scale carbon capture technology and projects around the Humber estuary and at our Energy from Waste plant.



8. Key Theme 2: Adaptation and Resilience

This means preparing for the changes we will see in our climate.

The global and regional climate has already changed with average temperatures now more than 1°C warmer than pre-industrial times, bringing with it heavier storms, rising sea levels, and longer droughts and heatwaves. The climate will continue to change over the course of this century until we reach the 'Paris Agreement' goal of becoming carbon neutral globally. The impacts might be short term 'shocks' (such as a flood) and longer term 'stresses' which impact on our lifestyles such as increase in household insurance prices. In line with recommendations from the UK Committee on Climate Change¹¹ in North Yorkshire we will prepare for the impacts of a 2°C rise, while assessing the potential impacts of a 4°C rise.

The Government's Climate Change Risk Assessment³¹ sets out 56 risks and opportunities which need to be addressed in this country and overseas such as opportunities for new species colonisation, changes in land suitability for agriculture and forestry, and risks to human health from poor air quality. Their review highlighted 8 most urgent risks:

1. Natural habitat destruction
2. Degraded soil health
3. Degraded natural carbon stores such as woodland and peat
4. Lower yields for crops and livestock
5. Disrupted food supply chains – globally and nationally
6. Disrupted power supplies
7. Human health and wellbeing from extreme temperature and other weather events
8. Impacts to the UK from climate change impacts around the world. Movement of people globally and disruption to world supply chains and economies.



Climate adaptation work to date has been spread out across different areas of the previous councils and is undertaken in partnership with regional partners such as the Environment Agency.

Adaptation plans are at an early stage across the public sector and although we have many years' of experience dealing with flood risks, adaptation to wider impacts is a relatively new area of work for all sectors including businesses and communities.

The formation of NYC provides the perfect opportunity to better co-ordinate and expand our work to ensure the Council and our residents, communities and businesses are ready for the impacts of climate change.

The Yorkshire and Humber Climate Commission provides an opportunity to work closely with other local government organisations to improve joint working, knowledge sharing and implementation plans which is a relatively new area of work for most local authorities. We must use this opportunity to prepare for extreme events, proactively protect our infrastructure and communities and support nature here in North Yorkshire.

We must also prepare for the impacts of global instability caused by climate change and the resulting economic and human impacts. We will do this through creating a detailed and evidence-based adaptation plan developed over the next two years. This will help us to understand the risks and prioritise vulnerable people and locations and to take a more 'proactive' approach to the longer-term stresses.

Our adaptation priorities:

(a) Climate Resilient Council – how the Council prepares for climate impacts on its assets and in its work. The corporate activities of the Council will face increasing risks from climate change. Council buildings and services will be disrupted by changing weather patterns including extremes that impact upon both staff and physical resources and infrastructure.

To adapt to climate change at the Council, we need to:

- i. Ensure the retrofit of Council buildings makes our assets less vulnerable to climate change by including adaptation in building improvement plans
- ii. Deliver climate adaptation work within and at the same time as decarbonisation measures
- iii. Embed climate risk into the Council's service delivery and risk management procedures
- iv. Assess climate risk in each of the Council's services
- v. Keep up-to-date data on climate impacts and responses faced by each service
- vi. Develop a North Yorkshire Council Climate Adaptation Plan by 2025 using the Local Government Association (LGA) Toolkit and support from the Yorkshire & Humber (Y&H) Climate Commission

We will create, by March 2025, a North Yorkshire Council Climate Adaptation Plan to support services and residents, communities and businesses to prepare for our climate to change. This will assess our risks and identify options for adaptation.

(b) Support communities to be climate resilient – this is the ability of communities to reduce exposure to, prepare for, cope with and recover better from, shocks and stresses. Our communities in North Yorkshire have shown their ability to support each other through response to the Covid-19 pandemic and this provides a platform to develop climate resilience activities. Some communities are further along this journey whilst others require more support to develop local voluntary sector approaches. Developing approaches to local energy security, food supply chains, flood defence groups and transport and care services for vulnerable community members are examples.

To enable communities to be climate resilient we will:

- i. Work with communities to develop adaptation solutions at local neighbourhood scale
- ii. Improve climate adaptation communications to ensure everyone is aware of actions they need to take to prepare
- iii. Prepare and communicate seasonal health and disease outbreak responses

(c) Responding to extreme events – how the Council provides infrastructure and processes to respond to events such as flooding. With sea levels rising, coastal flooding and erosion will become more likely, requiring stronger coastal management and defences. Flooding from surface water and rivers caused by heavier and more frequent storms will need more effective interventions to protect people, property and infrastructure.

To adapt to increasing extreme events we need to:

- i. Maintain up-to-date Shoreline Management Plan and Coastal Strategies updated with climate risk data collected nationally and locally, social and environmental value data to underpin the actions of coastal strategies
- ii. Deliver effective coastal protection and management projects and be aware of additional funding sources for coastal management
- iii. Ensure Emergency Planning procedures are updated with changing climate risks. Input from resilience and emergencies team

(d) A resilient built environment – making sure our buildings and infrastructure such as roads and bridges can cope with a changing climate and the current and future conditions not necessarily planned for when they were originally developed. This includes improved ventilation and shading for example and new maintenance and repair procedures may be needed. In the new developments that are built across our area, we need to ensure that the ability to cope with these challenges and to quickly recover is designed in from the start.

To develop a resilient built environment, we need to:

- i. Embed climate adaptation in retrofit activity and infrastructure maintenance programmes
- ii. Ensure climate resilient developments are the standard, particularly in Council-led new developments
- iii. Reviewing best practice in climate adaptation in Development Plans

(e) Placing nature at the heart of adaptation – making sure we support the adaptation of nature to climate change and use nature-based solutions in our adaptation activities. Climate change will have profound impacts upon nature. Changing conditions mean that many species will lose habitats. In some areas, particularly along our coastline, unique habitats will be squeezed beyond their ability to host their current number and range of species. Through maximising our habitat protection and management, and providing habitat corridors to enable species to move freely, we can reduce this impact. At the same time, we can make use of nature's ability to regulate our environment to reduce the impacts of climate change on people. Nature will play a key role in creating climate resilient places across North Yorkshire.



To place nature at the heart of adaptation, we need to:

i. Support nature to adapt:

- Identifying through mapping our key at-risk species and habitats
- Developing nature adaptation plans for key species and habitats
- Planning a route for habitat connections
- Ensuring new nature projects use climate-resilient species



ii. Use nature in wider adaptation actions:

- Use trees to provide shade in both existing urban areas and in new developments
- Maximise the use of natural flood management schemes along our coasts, in river catchments and in new developments

250,000 trees have been planted in North Yorkshire as part of the River Aire Catchment programme.³² It is currently the UK's largest natural flood management implementation scheme using natural methods to slow the flow of surface water by disrupting its direction of travel or temporarily holding it in higher parts of the catchment, then gently releasing it so that lower areas are not overwhelmed by flood water. By delivering this scale of natural flood management, the scheme will also provide several wider environmental and social benefits, such as:

- increasing biodiversity, tree canopy cover and new habitats for wildlife
- capturing and storing carbon
- increasing awareness and the implementation of effective land management
- helping to regenerate rural and urban areas
- improving water quality

Nature underpins our economy, enriches our lives and helps protect us from environmental threats. We rely on healthy, well-functioning ecosystems to provide us with food, clean air and water, natural fibres and timber and our way of living and economy is based on natural world ecosystems. The food that we eat, the water we use, the clothes we wear and the businesses that drive our economy are reliant on the health of the natural world ecosystem, and this is under threat.

Climate change will make this worse as animals and plants lose their habitats and cannot adapt to changing temperatures and acidity of the oceans. The numbers and variety of plant and animal life, described as 'biodiversity' is not just a 'nice to have', it is essential. Climate change poses one of the greatest threats to biodiversity and natural ecosystems locally and globally. Nature needs our support to adapt to the changes which are already having an impact. The forests and soils that act as a natural store for carbon, clean our air and protect us from flooding are being damaged and the insects that pollinate our crops are decreasing – around the world and on our doorstep in North Yorkshire. The Convention on Biological Diversity is the United Nations programme to drive forward this area of work and recently almost 195 countries agreed the Kunming-Montreal Global Biodiversity Framework. The Framework sets out the global blueprint for tackling biodiversity loss.

“We have a vicious cycle: climate change leads to biodiversity losses, which in turn leads to further climate change. As governments around the world develop plans to reduce carbon emissions and conserve biodiversity, the message is simple: we must solve both problems together”.³⁴

13%
decline in
average species'
abundance

5%
decline in
average' species
distribution

41%
have decreased
in abundance

53%
of species show
strong changes

15%
of species are
threatened

The Government's 25 Year Environment Plan¹² and the Environment Act 2021 provides the national context for supporting nature. This sets out Government action to help the natural world regain and retain good health. New funding mechanisms like the Environmental Land Management Scheme present a clear opportunity to enable nature recovery, while Government has also committed to working with North Yorkshire Council towards a Natural Capital Investment Plan that will maximise the economic benefits of nature recovery in North Yorkshire.

There are many opportunities in our North Yorkshire countryside to support nature. Using 'nature-based solutions' for climate change mitigation and adaptation can promote healthy ecosystems and species recovery. We can support biodiversity from the local to the landscape scale by having 'more, better, bigger and joined-up' network of well managed protected sites. This means building on the strong foundations of our existing network and seeking opportunities to create new and expanded sites, improve the quality through conservation management and improve their connections across the landscape.

Our communities have a great love and respect for their local environments, and we have many partnerships from national organisations to village amenity groups to help support nature. In North Yorkshire we have many protected areas of countryside:



Despite these designations, many of the sites require conservation and active management to maximise their natural functions such as biodiversity value, carbon sequestration or water storage for natural flood management. They will require active management by people to maximise their natural functions.

These countryside resources – the *natural capital* – also support the local economy and thousands of jobs through agriculture, land management and tourism.

Supporting North Yorkshire's natural ecosystems to thrive will help us not only to mitigate and adapt to climate change but also to take new economic opportunities. Linking ecosystems, biodiversity and nature recovery with climate change activity will ensure mutual benefits to both the natural world and the human population.

The Routemap priorities for land use which NYC can help to support include:

- Enhance marine and coastal ecosystems to improve carbon sequestration
- Enhance natural capital and improve biodiversity
- Increase storage of carbon in our landscape



Our Supporting Nature priorities are to:

(a) Work in partnerships. To ensure a joint approach between the many organisations working to support nature. Examples include regulatory bodies such as the Environment Agency, statutory nature conservation bodies, Local Nature Partnerships, Wildlife Trusts, farming and land management groups, land managers and local community groups.



Through these we will:

- Build the evidence base locally to prioritise areas (geographic and habitat) or urgent action to protect and restore nature sites and improve air and water quality and light pollution
- Support community-based groups to improve biodiversity of their local areas through both monitoring and physical improvements
- Encourage landowners to adopt more nature-friendly farming and increase the biodiversity value of their land

Two Local Nature Partnerships (LNP) cover our area, which act as strategic partnerships promoting the value of nature to a wide range of audiences and identifying ways that investing in our natural environment can support our health, economic and climate change ambitions. The North Yorkshire and York LNP covers the city of York and the county of North Yorkshire, excluding the Yorkshire Dales National Park, Nidderdale National Landscape and the Forest of Bowland National Landscape. These are part of the Northern Upland Chain LNP, which covers the Northern Pennine protected landscapes up to Northumberland National Park and focuses on upland issues and opportunities shared by these landscapes.³⁵

- (b) Prioritise nature-based solutions** in climate change activity – understanding how the interventions that we will take in response to climate change can also support nature through increased protection, restoration or management. For example, natural flood management, using trees and soils to store carbon, promoting ‘bio-based construction’ and using ‘green living walls’ for insulation. Sequestration projects, initiatives such as storing carbon in trees or other natural environments, should also take account of biodiversity.
- (c) Implement Statutory requirements** – we can ensure that legislative requirements are used to support nature.
- i. **North Yorkshire and York Local Nature Recovery Strategy** – This statutory document will outline the species and habitats of greatest importance in our area, map their distribution and identify where ecological networks should be strengthened to support nature recovery. It will also identify the ambitions of existing organisations and partnerships to help nature recover in North Yorkshire. NYC is the provisional responsible authority tasked by the Secretary of State to develop the LNRS and report to Government on its progress.
 - ii. **Biodiversity Net Gain (BNG)** – This is an approach to development, land and marine management that leaves biodiversity in a measurably better state than before the development took place. In the future, most developments will need to deliver a minimum 10% BNG either within the development site or using off-site compensation habitats.

The adopted Harrogate District Local Plan (2014-2035) includes a policy requiring major development to avoid any net loss of biodiversity and supporting schemes which achieve a net gain. This is supported by a Supplementary Planning Document, “providing net gain for biodiversity” adopted 2021. This requirement comes ahead of the statutory use of BNG metrics from November 2023 but is in line with the National Planning Policy Framework ³⁶

- iii. **Local Plan** – NYC will develop a Local Plan by 2028 and this will support nature through its policies and development control practices.

(d) Support nature through economic growth – There are opportunities presented to grow the economy in a sustainable way. Much of North Yorkshire’s economy is based on our landscape and the natural ecosystems. This will be developed through the ‘wrap around’ group on the Sustainable Economic Growth outlined below in section 9. Below are key areas for supporting nature.

- i. **Natural Capital Investment Plan:** Support the development of a Natural Capital Investment Plan for York and North Yorkshire, working with partners. This will ensure a strategic and coordinated approach to investment in natural capital which will help us to mitigate and adapt to climate change.
- ii. **Identify and meet skills gaps:** There is a gap in the skills and knowledge required to support nature recovery both in the public and private sectors. This includes areas such as ecology as well as specific land management techniques. Working with partners, such as the Local Enterprise Partnership and local colleges we will identify the skills needed to support nature over the next decade and put in place plans to ensure local people are able to benefit from the opportunities in this area of work.



iii. **Sustainable tourism:** Support the local tourism industry to recognise the value of the natural environment in attracting visitors and ensure our 'visitor economy' policies seek to protect and support nature through both strategic and practical interventions.

(e) **Sustainable land use and green spaces:** We must ensure that land managers in the public, private and community sector support nature in the way that the land is managed. For NYC, this includes public open spaces such as parks and play areas, highway verges and street trees, coastal areas and the county farm estate. We will also manage green areas associated with properties such as crematoria, sports centres, castles and outdoor learning centres. Our processes will also be shared with other organisations to promote good practice.

We will support nature through improved greenspace management on NYC land and support others to do likewise on their land.

(f) **Tree planting at scale:** The Routemap targets include the ambition to plant 37,000 hectares of new woodland by 2038. To achieve this, we need to build the supply chain to identify suitable land, suppliers of trees and other items associated such as fencing, and to ensure that we have people with the skills to manage the woodlands for many years into the future. This can only be done in partnership with landowners, businesses, communities and colleges, such as through the White Rose Forest³⁷. We also anticipate significant tree loss across the county due to 'ash die back' disease and we will prepare a plan to respond to this issue. It is proposed to have a 'wrap around' group for all the initiatives to support tree planting and this is covered in section 10(e)iv.



The White Rose Action Plan 2021-25³⁷ sets out our targets for tree planting and woodland creation across North and West Yorkshire over the next four years. Seven million trees, the equivalent to 3,500 hectares, could be planted in North and West Yorkshire between 2021 and 2025, with the support of landowners and farmers, with funding from the Government's Nature for Climate fund. We will focus on supporting projects that maximise community benefit within our two strategic planting programmes: Landscapes for Water and Green Streets®.³⁷

(g) **New opportunities in the marine environment** – North Yorkshire includes 67 km (42 miles) of coastline. Marine and coastal environmental management can be complex with no single organisation responsible for the entire coastline or the ecosystems of the Yorkshire coast. Supporting nature along the coast and responding to the causes and impacts of climate change (including water temperature rise and acidification) is best done in partnership and the Yorkshire Marine Nature Partnership,³⁸ managed by East Riding of Yorkshire Council provides this platform. Partners work to improve water quality, monitor and manage coastal change, support strategic planning and economic development opportunities, enable sustainable fisheries and preserve and record coastal heritage. There are opportunities identified to support nature recovery and natural sequestration with kelp seaweed. As with land-based nature, the Partnership has also identified that we need to improve our data and information about the coastal environment, to support prioritisation of activity.

A 2022 survey, published by the Department for the Environment, Food and Rural Affairs (Defra) in collaboration with the Ocean Conservation Trust, the Scottish Government and Natural Resources Wales, sheds light on public awareness, knowledge and attitudes surrounding the marine environment. This survey highlighted the immense value that the general public place on our ocean and marine environment as well as their willingness to take action to help to preserve it.³⁹



10. North Yorkshire Council

- Net Zero by 2030

The scale of NYC's operations will see it serve the greatest geographical area of any local authority in the country, and it will have an overall spend of about £1.4 billion per year.

Council services are delivered by five directorates. Within those directorates are the service departments such as Education, Adult Social Care, Public Health, Transport, Environment, Housing, Economic Development and Planning just to name a few. We also have local authority companies that deliver highways, property and housing activities. We will have responsibility for over 900 vehicles across all our services, plus employees' own cars used for their work. We will own, manage and lease many buildings, requiring power to heat and be responsible for the local authority streetlights on roads and pavements. We will have around 13,000 members of staff.

The scale of the organisation presents a huge opportunity to take climate responsible actions and to derive co benefits across multiple strategies. To do this we will:

(a) Measure and report on our emissions and plan how and when we will hit our target. We use a nationally recognised formula to calculate our carbon emissions from delivering the services which are under our direct control. These are divided between:

Scope 1 – Direct emissions from gas boilers and council owned vehicles (our fleet).

Scope 2 – Indirect emissions from consumption of purchased electricity (assets and EVs).

Scope 3 – Business travel using staff's own cars (our 'grey' fleet) and water usage.

From 2023 we will be able to more accurately calculate our carbon emissions from our operational services. This will show our progress and highlight priority areas where further activity is required to meet the target. We can then determine what is needed to 'offset' the target with renewable energy generation and with carbon capture projects.

(b) Fleet and Property: We know that the council's property and fleet account for a large proportion of our carbon footprint. For example, in 2021 the vehicles NYCC used to deliver its services accounted for 28% of emissions. Energy use to power its properties and assets comprised the remainder, with 31% directly on fossil fuel oil and gas. To reduce these emissions, we need to follow the built environment and travel hierarchy approach outlined in the Mitigation theme (chapter 7 above) and create a fleet and property decarbonisation plans, including rationalisation, to reduce the use of fossil fuels whilst increasing the proportion of renewable energy usage. This is not going to happen overnight, and we will be dependent on the development of new and improving technologies, the speed at which the market brings forward new products, electrical grid capacity and funding to switch to alternative fuels in many cases. We also use the Liftshare platform to enable car sharing for commuting and work-related journeys.



(c) Procurement and Commissioning: How and what we buy in to deliver our services is called procurement and commissioning and is estimated to be worth £656m per year in the new authority. It is not included in the County's operational carbon emissions figures. It is an extremely complex calculation that would not be cost effective to quantify and also 'double counts' emissions from our suppliers that record their own emissions. However, we do want to ensure that we are choosing low carbon products and services to meet our operational targets (such as switching to alternative fuels) and that our suppliers are also taking climate responsible actions to meet regional targets. We can help them to do that through our procurement strategy and working with our supply chains and small businesses through our economic development and business support strategies.

Craven District Council (CDC) adapted the procurement strategy in 2021 to reflect environmental sustainability when the Council set a goal to become 100% carbon neutral by 2030. To help achieve the Council's environmental objectives, CDC considered environmental sustainability issues in its procurement processes by:

- Ensuring that environmental criteria were included in the assessment of suppliers, contractors and their products where relevant
- Ensuring that suppliers were compliant with environmental legislation as part of the procurement process
- Educating suppliers regarding CDC's environmental and sustainability objectives

(d) Embedding climate change into 'business as usual': To achieve our target, we must all make climate responsible decisions. All NYC employees will need to understand the causes and impacts of climate change and how their actions will contribute:

- i. We have bespoke climate change awareness training that is available to all employees and Councillors, and this will continue to be promoted.
- ii. We will use a Climate Change Impact Assessment for Council reports and transformational programmes. These will review the impact of decision on our three climate change themes.
- iii. We will support employees to share resources, learn from each other and build a body of knowledge, expertise and good practice across the Council. This includes the existing online sharing platforms and an expansive staff 'green group' and committee of Sustainability Champions to coordinate council-wide activity.

(e) Collaborative areas: To ensure a joined-up approach to climate change where many different parts of NYC and other partners deliver interventions and to pool knowledge and resources, we will develop a 'wrap around' groups for specific areas and issues.

- i. Schools and educational establishments:
 - Help them to reduce carbon emissions from their buildings (energy efficiency and renewable energy)



- Improve school travel (to and from school), also linked to obesity and air quality strategies and 'Bikeability' schemes
- Use their grounds to support nature
- Schools catering and waste – reducing food miles and food waste
- Improve climate change awareness and encourage knowledge sharing between schools and for children and parents in the wider community through the School's Energy and Sustainability service
- Careers advice related to green economy and skills
- Young people's engagement in the climate change agenda – what do they see as important / how they can get involved and preparing for future climate impacts ('Growing up in North Yorkshire' survey)

ii. Low Carbon Economy:

- Support embedding low carbon initiatives into placemaking and regeneration programmes
- Support business to adopt low carbon and circular practices
- Develop local supply chains to maximise economic multiplier of our investment in climate change activities
- Support local climate change skills development, including through Adult Education service and partnerships with the LEP and colleges.
- Develop a sustainable visitor economy

iii. Public Health and climate change:

- Air quality
- Active Travel
- Social prescribing and access to greenspace
- Food Strategy including production, manufacture, sustainable diets and waste.
- Behavioural insights to support everyday choices.

iv. Tree and Woodland issues:

- Land availability / suitability
- Supply chain for tree planting at differing scales in urban and rural locations
- Response to Ash Die Back
- Economic opportunities and skills development
- Health and wellbeing

v. Energy and Grid Capacity (working with LEP and City of York):

- Supporting businesses to decarbonise
- Installing EVCPs
- Lobbying for improvements to grid capacity
- Community Energy
- Renewable energy project development and implementation

As a Council we will:

- Seek to become operationally net zero by 2030 and measure an accurate pathway to achieve that and monitor performance.
- Embed climate change into every service and into policy and decision-making process so that taking climate responsible actions becomes 'business as usual'.
- Create property and fleet decarbonisation plans and a staff travel policy to reduce mileage by March 2024.
- Encourage our suppliers to take climate responsible actions.
- Raise awareness of the causes and impacts of climate change and climate responsible actions required with all Officers and Members.
- Ensure every Directorate and Service has a Climate Change Action Plan to support prioritisation, by March 2024.
- We will address specific areas of council business where collaborative actions are required to ensure efficient and effective actions.



11. Conclusions

This Strategy sets out NYC's approach to fulfilling its ambition become net zero in our operational activities by 2030 and to work with partners to achieve York and North Yorkshire net zero by 2034 and carbon negative by 2040. The Strategy works hand in glove with our partners in the City of York Council and the LEP (in advance of the proposed Mayoral Combined Authority) and defines our part in delivering sub-regional objectives outlined in the Devolution Deal.

Critically this approach means that our climate change plans are linked to the economic ambitions of York and North Yorkshire, through its innovative devolution and green growth agenda. Together we will ensure that our residents live in clean, safe and green communities, where people and organisations embrace the potential of a strong economy alongside environmental responsibilities.

It is an evidence-based approach to making real progress against a challenging ambition. We recognise that our success lies in us all taking action to shift our behaviour and to live more sustainable lives to help safeguard our communities and the environment. But we cannot do this alone. Importantly this document also underlines our intention to work in partnership with national Government. We simply cannot deliver on our net zero ambition in North Yorkshire without changes to the national policy landscape and national action. To this end, we will continue working with our partners to shape the national strategy for delivering on the UK's net zero carbon target. It will also be critical that we work alongside the business and academic community and other key partners to ensure we are able to secure the required innovation and investment required to undertake this work.

The scale of our ambitions must reflect the scale of the challenge. How we respond to this challenge will define our generation. We believe that our Strategy meets this challenge.



Supporting Documents (Technical appendix)

Introduction to climate change – articles produced by the House of Commons
<https://commonslibrary.parliament.uk/climate-change-explainers>

Referenced and background documents and organisations

1. Intergovernmental Panel on Climate Change <https://www.ipcc.ch/>
2. Climate Emergency declaration <https://edemocracy.northyorks.gov.uk/ieListDocuments.aspx?CId=1147&MId=6413&Ver=4>
3. Rural commission <https://www.northyorks.gov.uk/your-council/north-yorkshire-rural-commission>
4. North Yorkshire [Council Plan Council plan | North Yorkshire Council](#)
5. UK Government Net Zero by 2050 <https://www.gov.uk/government/publications/net-zero-strategy>
6. Y&NY Routemap to Carbon Negative and targets <https://yorknorthyorks-ca.gov.uk/routemap-to-carbon-negative-stakeholder-workshop/>
7. Y&H CC Action plan <https://yorksandhumberclimate.org.uk/climate-action-plan>
8. 'Legacy' authorities climate action plans [Climate change strategy 2023 to 2030 | North Yorkshire Council](#)
9. Local Area Energy Plan – West, Central and Eastern North Yorkshire <https://yorknorthyorks-ca.gov.uk/what-we-do/strategy-and-policy/local-area-energy-plans/>
10. Paris Agreement <https://www.un.org/en/climatechange/paris-agreement>
11. Climate Change Committee <https://www.theccc.org.uk>
12. Defra 25 year plan <https://www.gov.uk/government/publications/25-year-environment-plan>
13. Circular Economy Strategy <https://yorknorthyorks-ca.gov.uk/project/circular-yorkshire/>
14. UK Climate Projections <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/about/index>
15. The Lancet <https://www.thelancet.com/countdown-health-climate>
16. Data from BEIS – [UK local authority and regional greenhouse gas emissions national statistics - GOV.UK \(www.gov.uk\)](#)



17. Scatter Cities - <https://scattercities.com>
18. CREDs Carbon Places - <https://www.carbon.place/#10.24/54.0633/-1.1797>
19. Devolution Deal <https://www.northyorks.gov.uk/devolution>
20. Air Quality <https://www.legislation.gov.uk/ukxi/2010/1001/contents/made>
21. Air Quality and Net Zero Defra Air Quality Expert Group, 2020, "Impacts of Net Zero pathways on future air quality in the UK". ONS natural capital air quality - <https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapitalaccounts/2022>
22. ISO Net Zero Guidelines: This document provides guiding principles and recommendations to enable a common approach with a high level of ambition, to drive organizations to achieve net zero GHGs as soon as possible and by 2050 at the latest. <https://www.iso.org/netzero>
23. North Yorkshire Shared Prosperity Fund <https://www.northyorks.gov.uk/community-and-volunteering/grants-and-funding/uk-shared-prosperity-fund>
24. Sustainable Travel Hierarchy <https://energysavingtrust.org.uk/an-introduction-to-the-sustainable-travel-hierarchy/>
25. <https://www.nynet.co.uk>
26. E Motion study: <https://www.cenex.co.uk/projects-case-studies/e-motion-personal-electric-transport-in-yorkshire/>
27. NYCC Electric Vehicle Charging Study: [Previous consultations | North Yorkshire Council](#)
28. North Yorkshire Rotters <https://www.northyorks.gov.uk/bins-recycling-and-waste/reduce-and-reuse/north-yorkshire-rotters>
29. Grow Yorkshire <https://yorknorthyorks-ca.gov.uk/our-strategy/localgrowthplan/>
30. Yorkshire Peat Partnership <https://www.ypppartnership.org.uk/>
31. UK Committee on Climate Change adaptation report <https://www.theccc.org.uk/publication/progress-in-preparing-for-climate-change-2019-progress-report-to-parliament/>
32. Natural Flood Management <https://whiteroseforest.org/about/>
33. <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf> and <https://stateofnature.org.uk/>
34. Sir Patrick Vallance : We've overexploited the planet, now we need to change if we're to survive - GOV.UK (www.gov.uk) <https://www.gov.uk/government/speeches/weve-overexploited-the-planet-now-we-need-to-change-if-were-to-survive>

35. Local Nature Partnerships: www.nypartnerships.org.uk/lnp and <https://www.nuclnp.org.uk/about-us/>
36. Harrogate Borough Council Biodiversity Net Gain Providing net gain for biodiversity SPD – [Providing net gain for biodiversity supplementary planning document | North Yorkshire Council](#)
37. <https://whiteroseforest.org/about/actionplan/>
38. Yorkshire Marine Nature Partnership <https://yorkshiremarinenaturepartnership.org.uk/>
39. <https://www.gov.uk/government/news/protecting-the-marine-environment-is-vital-say-public>
40. [Electric vehicle charging points rolled out on the coast | North Yorkshire Council](#)
41. <https://www.theccc.org.uk/wp-content/uploads/2023/06/Progress-in-reducing-UK-emissions-2023-Report-to-Parliament-1.pdf>



Policy Context

UN Climate Change Conference (COP21) in Paris <http://www.cop21paris.org> reached the historic Paris Agreement. https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf The Agreement sets long-term goals to guide all nations:

- Substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2°C while pursuing efforts to limit the increase even further to 1.5°C;
- Review countries' commitments every five years;
- Provide financing to developing countries to mitigate climate change, strengthen resilience and enhance abilities to adapt to climate impacts.

<https://www.un.org/en/climatechange/paris-agreement>

The intergovernmental Panel on Climate Change is the United Nations body for assessing the science related to climate change <https://www.ipcc.ch> and the UN Sustainable Development Goals <https://sdgs.un.org/2030agenda> adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries – developed and developing – in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. <https://sdgs.un.org/goals>

UK policy on climate change

The Government's main climate change policy document is the Net Zero Strategy (Build Back Greener) <https://www.gov.uk/government/publications/net-zero-strategy> which was published on 19 October 2021 (updated April 2022). It sets out policies and proposals for decarbonising all sectors of the UK economy to meet the Government's net zero target by 2050, which is a legal requirement established under The Climate Change Act 2008. <https://www.legislation.gov.uk/ukpga/2008/27/contents>

The Net Zero Strategy builds on the Government's 10 point plan for a green industrial revolution <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution> which was published on 18 November 2020. It focuses on the following areas:

- Advancing offshore wind
- Driving the growth of low carbon hydrogen
- Delivering new and advanced nuclear power
- Accelerating the shift to zero emission vehicles
- Green public transport, cycling and walking



The Committee on Climate Change (CCC) is an independent body established under the Climate Change Act. The CCC website <https://www.theccc.org.uk/what-is-climate-change/a-legal-duty-to-act/#:~:text=The%20Climate%20Change%20Act%20commits,20%25%20of%20the%20UK's%20emissions>, sets out how climate change policy is implemented across Government:

Department for Business, Energy and Industrial Strategy <https://www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy> (BEIS) – leading on policy for reducing emissions (mitigation). BEIS is responsible for ensuring secure energy and promoting action on climate change in the UK and internationally.

Department for Environment and Rural Affairs <https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs> (Defra) – leading on domestic adaptation policy (adaptation). Defra is responsible for developing the National Adaptation Programme to address the risks set out in the most recent UK Climate Change Risk Assessment 2022 <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022>

The Climate Change Act also requires Government to produce a UK Climate Change Risk Assessment <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2017> (CCRA) every five years a National Adaptation Programme https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209866/pb13942-nap-20130701.pdf (NAP).

The CCC is responsible for providing advice to Government on tackling climate change and monitoring the Government's progress on reaching net zero.

Its latest statutory progress report <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament> to Government was published in June 2022. It provided recommendations based on a new monitoring framework and set out the following headline statements:

- The UK Government now has a solid Net Zero strategy in place, but important policy gaps remain.
- Tangible progress is lagging the policy ambition. With an emissions path set for the UK and the Net Zero Strategy published, greater emphasis and focus must be placed on delivery.
- Successful delivery of changes on the ground requires active management of delivery risks. Not all policies will deliver as planned. Some may be more successful than expected, while others will fall behind.
- Action to address the rising cost of living should be aligned with Net Zero. There remains an urgent need for equivalent action to reduce demand for fossil fuels to reduce emissions and limit energy bills.
- Slow progress on wider enablers. The Net Zero Strategy contained warm words on many of the cross-cutting enablers of the transition, but there has been little concrete progress.
- The UK must build on a successful COP26. The UK presidency of the UN COP26 climate summit in Glasgow last November successfully strengthened long-term global ambition and introduced new mechanisms to support delivery. It should prioritise making those new mechanisms work in practice and strengthening global 2030 ambition, while preparing for a focus on climate finance and adaptation at COP27 in 2022 and COP28 in 2023.

Policies for nature-based solutions

The Government's 25-year Environment Plan <https://www.gov.uk/government/publications/25-year-environment-plan> for England in 2018 made a commitment to take a 'natural capital approach' <https://post.parliament.uk/research-briefings/post-pn-0542> to environmental protection. It included proposals for a nature recovery network, tree planting, an England Peatland Strategy, <https://naturalengland.blog.gov.uk/2019/08/12/peat-pilots-set-to-revive-english-peatlands> and creating financial incentives through the Agriculture Bill <https://services.parliament.uk/bills/2019-21/agriculture.html> for natural carbon storage.

Others have also made proposals; the farming industry set out its approach for achieving net-zero by 2040 <https://www.nfuonline.com/nfu-online/business/regulation/achieving-net-zero-farmings-2040-goal> in September 2019. The Government's environmental bodies <https://www.gov.uk/government/news/environmental-bodies-set-joint-vision-to-tackle-climate-change> set out their approach to land use change in January 2020, with a focus on woodland creation, restoring peatlands, supporting farmers and working with nature.

Funding for projects, through a Nature for Climate fund, <https://www.gov.uk/government/publications/budget-2020-documents/budget-2020> was announced in the April 2020 budget.



Links to existing carbon reduction / climate change strategies of the eight legacy Borough, District and County Councils of North Yorkshire (Council).

<https://www.northyorks.gov.uk/environment-and-neighbourhoods/climate-change/climate-change-strategy-2023-2030>

NYC Equality Strategy/ NYC Health and Wellbeing strategy <https://www.northyorks.gov.uk/your-council/equality-and-diversity/our-equality-diversity-and-inclusion-policy#:~:text=As%20a%20local%20authority%20we,and%20those%20who%20don%27t>



Glossary

Term	Definition
Climate Change	Climate change is a change in the state of the climate that persists over a long period of time, usually a decade or more. Climate change can be due to humans or external forcings like volcanic eruptions.
Greenhouse effect/Global Warming	The greenhouse effect, often referred to as global warming, is where heat is trapped close to the surface of the earth by greenhouse gases, like carbon dioxide, methane and water vapour. The greenhouse effect is what allows humans and other animals to populate the planet, because it keeps it at a liveable temperature. However, because there is a higher concentration of greenhouse gases in our atmosphere, there is more and more heat being trapped. It is important to note here that this process does not mean the same thing as climate change, which is described above.
GHG (Greenhouse Gas)	Greenhouse gases (often abbreviated to GHGs) are natural and anthropogenic gases that absorb and emit radiation, which causes the greenhouse effect. They primarily include water vapour, carbon dioxide, nitrous oxide, methane and ozone. There are also some entirely human-made greenhouse gases, including chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.
Anthropogenic	Anthropogenic refers to something produced by human activities. It is often used to explain where emissions or emissions reductions come from, for example the term anthropogenic emissions, which often refers to emissions from use of fossil fuels.
Carbon	Generally, when people refer to carbon, they are referring to the greenhouse gas carbon dioxide (CO ₂), but it is sometimes used to refer to the other greenhouse gases too. However, it should not be used to refer to all the greenhouse gases, as it is only one example of one.
Blue Carbon	This is the carbon captured by the world's ocean and coastal ecosystems, like seagrass and salt marshes.
Biodiversity	Biodiversity describes the variety of life on earth, including plants, animals and bacteria. It is often used in relation to a particular area, like a forest or a lake. Ideally, we are looking for high biodiversity in our ecosystems. Earth's biodiversity is very rich in that there are many species that have not been discovered yet, but many species are also threatened with extinction because of human activities.

Term	Definition
Biodiversity Net Gain (BNG)	Biodiversity Net Gain, sometime abbreviated to BNG, is where the environment is enhanced by development and land management. It is mostly used in relation to developments. For example, if a normal development clears habitats for housing, this will result in a loss of biodiversity. If a development is considering Biodiversity Net Gain, then they would replace or enhance habitats associated with the development.
Carbon Budget	A carbon budget is the estimated limit of cumulative emissions that can be emitted over a certain amount of time in order to keep global temperatures within a certain threshold, in most cases 1.5°C (to align with the Paris Agreement). This budget is often presented as how much carbon dioxide we can emit per year or per decade before crossing that threshold.
The Paris Agreement	The Paris Agreement is an international treaty on climate change that has the goal of limiting global warming to below 2°C, but preferably to 1.5°C compared to pre-industrial levels. It was agreed in 2015 at COP21 and is legally binding.
Carbon Sequestration	Carbon sequestration is the process of capturing and storing carbon dioxide (CO ₂) from the atmosphere. Forests, grasslands, soils and oceans are all natural carbon sinks that sequester carbon, and carbon capture technology is an artificial process that captures carbon.
Circular Economy	The circular economy is a way of working that promotes using only what we need, minimising waste and making the most of our resources. We currently live in a linear economy, where we take resources, make them into things and then waste them. A circular economy approach would mean that instead of wasting them, we find ways to reuse what we make and design it in a better way so that we make the most of our resources. Circular economy is sometimes abbreviated to CE.
Climate Change Adaptation	Climate Change Adaptation is adapting to the climate change impacts already happening or expected to in the future. Even if we stopped all emissions today, there are still some impacts of climate change that we are committed to that will impact us and future generations. Adaptation might involve reducing our vulnerability to erosion due to rising sea levels or increased summer temperatures. It also includes utilising any positives of climate change, such as longer growing seasons.
Climate Change Mitigation	Climate Change Mitigation describes efforts to reduce or remove emissions of greenhouse gases, which are causing our planet to warm. Such as reducing fossil fuel use and/or increasing the capture and storage of gases (for example, by planting trees).

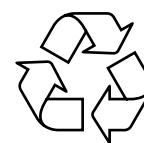


Term	Definition
Co-benefits	These are the additional positive benefits related to lowering greenhouse gas emissions, which may or may not be intended. For example, some co-benefits of improving energy inefficiency may be reducing energy costs or reducing the negative health impacts of buildings (for example, reducing the likelihood of respiratory illnesses by reducing damp and mould).
CO₂e – Carbon dioxide equivalent	This is a metric that compares emissions from other greenhouse gases to the amount of carbon dioxide that would produce the same amount of warming. Different greenhouse gases have different properties. For example, methane creates strong warming over a short time period, whereas carbon dioxide creates gentler warming over a longer time period. Using this metric means that we can express a carbon footprint with one number rather than using a different one for each greenhouse gas.
Decarbonisation	Decarbonisation is the way that countries, organisations, regions or individuals aim to get to net zero emissions, or to decarbonise. This usually includes reducing the greenhouse gas emissions of transport, electricity, heating etc.
Gross Emissions	Gross emissions are the total amount of emissions from a country, organisation etc., without deducting any measures they have in place, such as offsetting or using electric vehicles. Net emissions do include these measures.
Net Emissions	Net emissions are the gross emissions from a country, organisation, area etc. with deductions made from any measures that they've put in place, like offsetting. This term is not to be confused with net zero, net zero carbon or carbon neutral.
GVA (Gross Value Added)	GVA stands for Gross Value Added, and measures the contributions of an activity, company or municipality to something bigger like an economy, sector, producer or region. It is used to illustrate the value of industries, products etc.
Net Zero (Emissions)	Net Zero refers to anthropogenic (caused by humans) greenhouse gas emissions and anthropogenic greenhouse gas removals becoming balanced over a period of time. The difference between Net Zero and Net Zero Carbon is that Net Zero focuses on all greenhouse gases including carbon dioxide, methane, etc. Reaching net zero emissions is dependent on what metrics are chosen to compare the emissions of different greenhouse gases.

Term	Definition
Net Zero Carbon	Net zero carbon means that anthropogenic carbon dioxide emissions are balanced by anthropogenic carbon dioxide removals, thus achieving net zero carbon. This term is often used to indicate that emissions are reduced to as low as feasible, with a small amount of offsetting for residual emissions.
Carbon Neutral	Although carbon neutral is technically an interchangeable term with net zero carbon, carbon neutral is sometimes considered to indicate that an approach relies more heavily on offsetting. Although offsetting is important, it should only be used in small amounts for residual emissions that can't be reduced in other ways. Therefore, net zero carbon is the preferred term.
Carbon Negative	Carbon negative is a step further than carbon net zero. Instead of carbon emission and carbon removal being equal, more carbon is removed than emitted. This doesn't necessarily mean that carbon emissions have lowered, as it may rely on carbon capture technology.
Offsetting (carbon offsetting)	Offsetting (also known more specifically as carbon offsetting), refers to the practice of compensating for greenhouse gas (GHG) emissions by investing in projects or activities that reduce or remove an equivalent amount of carbon dioxide (CO ₂) or other GHG emissions from the atmosphere. This can be done with natural methods such as planting trees or restoring peatlands, or with carbon capture technology.
Consumption Emissions	Consumption emissions are the emissions resulting from the economic activity required to meet a nation's demand for goods and services, regardless of where these emissions happen in the global supply chain. They reflect the carbon footprint of a nation's consumption and lifestyle choices. These emissions are separate to emissions relating to production within a country's territory, known as production emissions.
Production Emissions	Production emissions are the counterpart to consumption emissions. These are the direct emissions produced within a country's territory during the production and manufacturing of goods and services.
Scope 1 Emissions	Greenhouse gas emissions can be split into three groups or scopes. Scope 1 emissions are direct emissions from sources that are owned or controlled by the organisation. For an organisation, an example of this might be the tailpipe emissions from a vehicle fleet. Regionally, an example of this may be emissions from transport or using buildings.



Term	Definition
Scope 2 Emissions	Greenhouse gas emissions can be split into three groups or scopes. Scope 2 emissions are the indirect emissions from purchased electricity, steam, heating and cooling. For an organisation, an example of this may be the emissions from purchased heating. Regionally, an example of this may be emissions from purchased electricity in the region.
Scope 3 Emissions	Scope 3 emissions are all the other indirect emissions that occur elsewhere in the value chain of the company. For an organisation, this might include the emissions of purchased goods and services like food or machinery. Regionally, an example of this may be emissions associated with low carbon technology such as those used to construct electric vehicles. Scope 3 emissions are difficult to measure because they occur elsewhere in the supply chain, and so many organisations do not include them in their climate plans.



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