Executive Summary

The Climate Change Strategy 2022-2030 establishes the vision for how the East Riding of Yorkshire Council will reduce carbon emissions and build resilience to climate change. It details the overarching climate change response for the Council, building on the suite of plans already in place for mitigation and adaptation across the authority and the wider region. The Strategy sets out key priorities and opportunities for climate action across the East Riding, which have been shaped by analysis of local data, expertise across the authority, feedback from our key partners and an initial public consultation.

The Strategy takes an integrated approach to climate change, considering how we become more resilient to the changing climate (climate adaptation) and how we can reduce our impact on the climate (climate mitigation). We recognise that although as a Council we are only directly responsible for an estimated 1% of carbon emissions in the area, we can use our influence to reduce emissions across the wider East Riding.

The Climate Change Strategy has been designed to set the East Riding on a path to net zero by establishing a flexible road map which can be developed over time as new policies and strategies are introduced that impact our ambitions. It has been developed to cover the period 2022-2030 with the aim to kick start rapid action to reduce emissions and build resilience. During this time, we will focus our efforts on quick win actions (those with the greatest impact or are the most feasible). This flexible approach will enable us to reassess our position in 2030, and ensure the Strategy remains aligned with evolving policy, legislation, and technological changes.

We have set a net zero target of 2050 for our own operations and services and plan for this Strategy to be a launch pad for exploring a shared area wide net zero target. An area wide target should be developed collaboratively with residents, businesses and organisations from across the area to create a shared target and ownership. We will also seek to review our target to align with an area wide science-based target where possible.

A more detailed action plan, outlining immediate plans and projects aligned to the Strategy, will be developed covering the period 2022-2025. Following this, the action plan will be reviewed and updated every 5 years. Climate action will be monitored annually and will be scrutinised at regular meetings of Environment and Regeneration Overview and Scrutiny Sub-Committee. Updates will be provided through the Council's Environmental Statement.

Climate Change Strategy 2022-2030

Our Vision East Riding of Yorkshire will be net zero carbon and climate resilient. It will be a healthier and cleaner area supported by renewable energy, sustainable transport and underpinned by a strong local green economy. We will create an environment for people and nature to thrive, helping lead the way to a fairer and more equitable society

Priority Areas for Climate Action

Transport

Transition to low/zero emission vehicles.

Modal shift to active and public transport.

Avoid unnecessary travel.

Energy

Transition away from fossil fuel energy.

Increase renewable energy production.

Smarter and more flexible energy system.

Buildings

Low-carbon retrofitting of buildings.

Improve energy efficiency of buildings.

Transition to zero carbon standards for new buildings.

Waste

Reduce waste through re-use and recycling.

Move towards a circular economy.

Environment

Sustainable land-use to support nature, people and the climate.

Recognise the ecological crisis.

Support emission reduction in the agriculture and food sectors.

Economy

Support emission reduction in the commercial and industrial sectors.

Maximise growth and opportunities in the green economy

Net Zero Council

Undertake carbon reduction initiatives.

Embed culture of climate awareness

Facilitate collaboration across the East Riding.

Resilience

Deliver schemes to reduce the impacts of climate change.

Adapt buildings, infrastructure and behaviours to build resilience in East Riding.

Cross-cutting themes

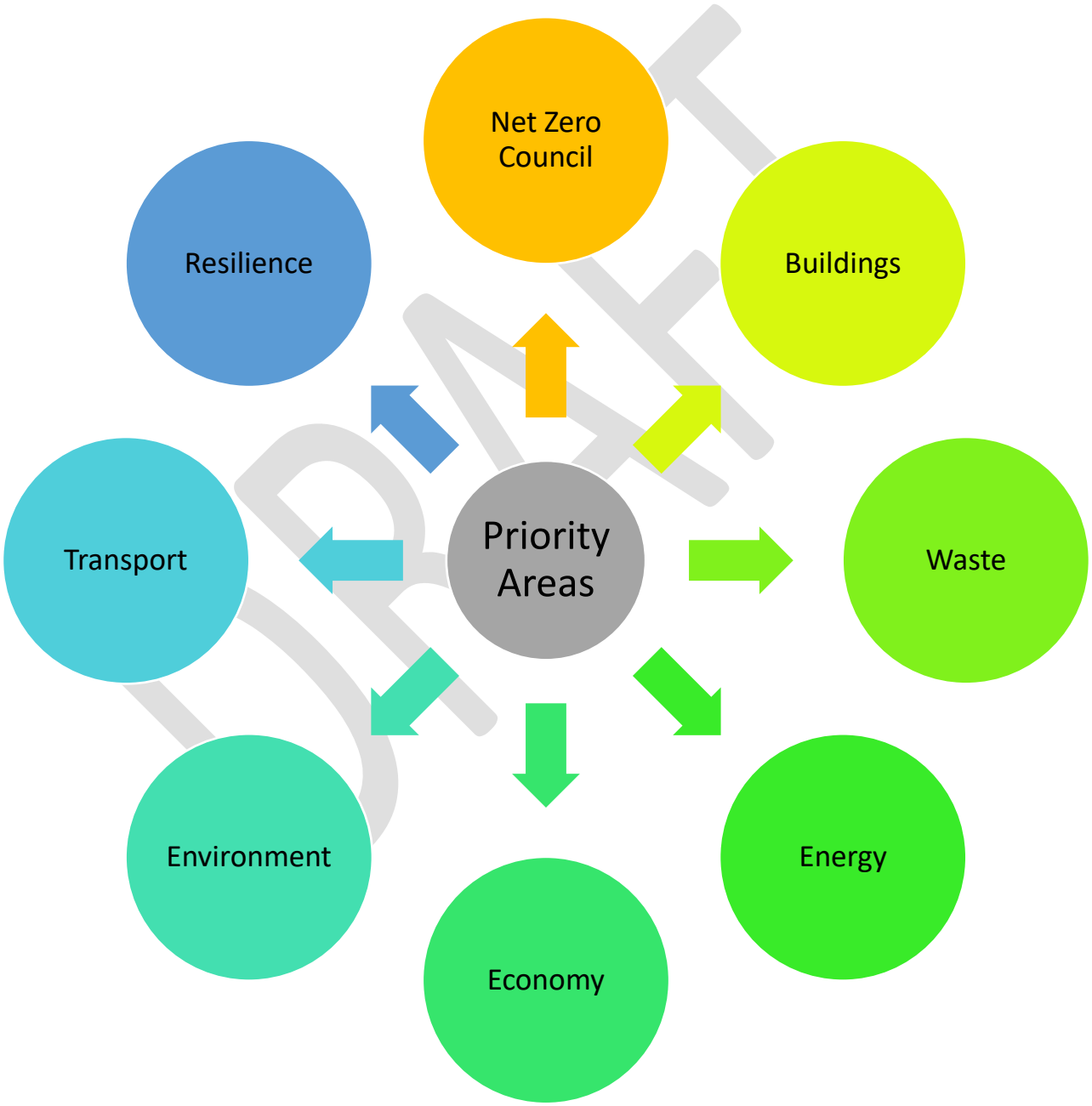
- Health
- Inequalities
- Rurality
- Coast

Monitoring Progress A detailed action plan is currently in development for the period 2022-2025, to align with the Strategy. Climate action will be monitored and scrutinised through regular meetings of Environment and Regeneration Overview and Scrutiny Sub-Committee. Updates will be provided through the Council's Environmental Statement.

Climate Change Strategy 2022-2030

Foreword

East Riding of Yorkshire will be net zero carbon and climate resilient. It will be a healthier and cleaner area supported by renewable energy, sustainable transport and underpinned by a strong local green economy. We will create an environment for people and nature to thrive, helping lead the way to a fairer and more equitable society.



Introduction

In 2019 East Riding of Yorkshire Council established a review panel to understand the risks and opportunities presented by climate change. The recommendations were published in February 2021, at the same time (and in line with national government) the Council declared a climate emergency.

The Panel concluded that the Council should develop a Climate Change Strategy to co-ordinate our response to climate change and define our ambitions and vision for the future. This Strategy aims to fulfil the review panel recommendations and to help understand our impacts on the climate. The Strategy will outline how the authority will play its part in tackling the climate crisis as well as supporting our partners, business and residents to do the same.

Climate change will impact everyone; however, our young people will have to live with the consequences for much longer. Young people across the East Riding have expressed their fears around climate change and are urging us to do more to protect their future.

"Our generation is the first to feel the impacts of climate change and the last generation that can do something about it" – Barack Obama.

Our climate continues to change rapidly, and we must all play our part to prevent further damaging warming. Globally emission of carbon dioxide must be halved by 2030 if we are to keep warming to 1.5 C. By working together across all sectors of society this challenging target can be met. The chair of the Intergovernmental Panel on Climate Change (a body that brings together climate scientist from across the globe) said that:

"We are at a crossroads. The decisions we make now can secure a liveable future. We have the tools and know-how required to limit warming" - Hoesung Lee – Chair, Intergovernmental Panel on Climate Change

Climate change will lead to warmer temperatures, changes in rainfall patterns, sea level rises and more frequent and intense heatwaves and flooding events. Even when we dramatically reduce our emissions of carbon dioxide, we will still be left with a warmed climate that we'll need to learn to live with. This Strategy will consider how we can reduce our impact on the climate and adapt to the inevitable changes we will see in the future.

This Climate Change Strategy has been written to cover the work we're doing as a council and in partnerships, however we hope that it inspires our residents to consider their own impact on the climate. You don't have to be an expert on climate change, and you don't need to be perfect. Every action counts. We'll only succeed in tackling climate change by working together.

Understanding Climate Change Language

Climate change

Climate change is the long-term changes in global temperatures and other characteristics of the earth's atmosphere. The earth is surrounded by a layer of greenhouse gases, which trap heat from the sun, keeping our planet warm. Since the industrial revolution and the burning of fossil fuels like coal, oil and gas, more greenhouse gases have been released into the atmosphere, which traps more of the sun's heat causing the planet to heat up.
Climate change affects everyone and as the earth warms we will experience more unpredictable and extreme weather events such as big storms and heavy rainfall to droughts and wildfire.

Climate risk

Climate risk refers to the potentially negative impacts of climate change for example the potential adverse effects on lives, the economy and the environment.

Climate resilience

Climate resilience is the ability to anticipate, prepare for and respond to hazardous events, trends or disturbances related to climate.

Vulnerability in the context of climate change

Climate change vulnerability is the tendency to be adversely affected by climate change and is a component of climate risk. It refers to the degree to which places/ people/ the natural environment are susceptible to and unable to cope with the adverse effects of climate change, for example extreme weather variability and extremes.

Carbon footprint

A carbon footprint is the total amount of greenhouse gases that are generated by the actions of particular individual, organisation or community. The UK average footprint for 2022 is 9.5 tonnes per person. It includes activities relating to commuting, food, shopping and travel.

Net zero/carbon neutral and the difference between the two (People use interchangeably)

Being **Carbon Neutral** means balancing greenhouse gas emissions by 'offsetting' (removing from the atmosphere) an equivalent amount of carbon for the amount produced. A commitment to being carbon neutral does not require or imply a commitment to reduce overall GHG emissions.
In contrast, a commitment to **Net-Zero** means reducing greenhouse gas emissions with the goal of balancing emissions produced and emissions removed from the atmosphere. For the purposes of this strategy, we will use the following definition (SBTi Net Zero Standard 2021):

- Reducing scope 1, 2, and 3 emissions to zero or to a residual level that is consistent with reaching net-zero emissions at the global or sector level in eligible 1.5°C-aligned pathways
- Neutralizing any residual emissions at the net-zero target year and any GHG emissions released into the atmosphere thereafter

Scope 1,2 & 3 emissions

Greenhouse gas emissions are divided into three different groups or scopes to help trace where those emissions came from and make it easier to report on them. Scope 1 emissions are produced directly at source from fuel combustion for example for company vehicles. Scope 2 emissions are indirect emissions from purchased electricity. Scope 3 includes all other indirect emissions for example those from outsourced services or purchased goods.

Decarbonisation

Decarbonisation refers to the process of removing carbon dioxide from a given activity. For example the decarbonisation of the national grid means the reduction of the amount of carbon used to generate a unit of electricity.

Green economy

A Green Economy is a concept that creates a sustainable low-emission world that benefits both society and the planet. A Green Economy is defined as low carbon, resource efficient and socially inclusive and is driven by investments into activities, infrastructure and assets that benefit the planet.

Circular economy

A circular economy is a model of making and using products, which involves sharing, reusing, refurbishing, and recycling existing materials and products, so that they can be used for as long as possible. It is a solution to the global climate emergency where products and services are designed to maximise their value and use and minimise waste. It can be explained as 'make, use, remake'.

Fairer and more equitable society / equalities

The principles of equity, justice and fairness are fundamental to understanding and addressing the challenges of global climate change. An equitable society is one in which everyone can participate and prosper and is fair and reasonable in a way that gives equal treatment to everyone.

Sustainable transport

Sustainable transport refers to any type of transport that is 'green' and has a low impact on the environment and is also about balancing our current and future needs. Examples of sustainable transport include walking, cycling, car sharing or ultra low emission vehicles (ULEV) e.g. electric vehicles.

Energy efficiency

Energy efficiency means using less energy to get the same job done and eliminating waste energy. For example, energy-efficient LED lightbulbs are able to produce the same amount of light as normal lightbulbs but use 75-80% less electricity.

Fuel poverty

In England, a household is considered to be fuel poor if:

- They are living in a property with a fuel poverty energy efficiency rating of band D or below.
  and
- When they spend the required amount to heat their home, they are left with a residual income below the official poverty line.

Sustainability

Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs. Sustainability does not only refer to environmentalism, but also includes things such as social equity and economic development. Sustainability as a value is shared by many individuals and organisations who want to demonstrate it through their policies, everyday activities, and behaviours.

Climate Risk in the East Riding

It is expected that, as time goes on, the East Riding will experience wetter winters, drier summers, higher sea levels and more extreme heatwaves. These climatic changes are likely to have significant impacts on society, the economy and environment within the county by exacerbating existing risks and introducing new risks. This section provides an overview of the most significant climate-related risks to the East Riding.

Flooding – The East Riding is already highly vulnerable to flooding. It is ranked within the top 10 areas in the country with the highest number of homes at risk of river and tidal flooding, while surface water flooding is a widespread and growing risk, especially in urban areas of the county. Furthermore, almost 60% of the population within the Hull and East Riding catchment of the Humber River Basin District (HRBD) are currently at risk from flooding. With more extreme storms and a 20-30% increase in winter rainfall as a result of climate change by 2100, the frequency and severity of surface water and fluvial flooding in the East Riding is likely to increase. Similarly, sea levels are expected to rise by up to 1m by 2100, leaving low-lying areas of the East Riding at significantly increased risk from tidal flooding.

Coastal Change – The majority (48km) of the East Riding coast is made up of soft glacial boulder clay. As a result, the East Riding has one of the fastest eroding coastlines in Europe, with average erosion rates of up to 4 metres a year and individual losses of over 20m recorded. Based on these rates continuing, approximately 209 residential properties would be lost to the sea within the next 100 years along with businesses, caravans, transport links and utilities infrastructure. However, rising sea levels and increased storminess linked to climate change are expected to result in higher rates of erosion and therefore bigger impacts on communities and businesses.

Heatwaves – By 2100 it is expected that mean summer temperatures in the East Riding will be 3-4 degrees Celsius hotter than today. They are also expected to be drier, with more frequent and more extreme heatwaves. Such temperature rises not only have an impact on how we live our lives but can have a significant effect on public health through heat cramps, heat exhaustion, heatstroke and hyperthermia. This impact is often felt worst by vulnerable residents, including those over 65, who make up a higher-than-average proportion (26%) of the East Riding's population.

While those impacts explored above are of particular importance for the East Riding, and therefore prominent in this Strategy, it is important that plans are made to mitigate, and adapt to, all impacts of climate change. Some additional potential impacts, as outlined in the most recent UK Climate Change Risk Assessment include risks to:

- The viability and diversity of habitats and species.
- Soil health from increased flooding and drought.
- Natural carbon stores and sequestration from multiple hazards, leading to increased emissions.
- Crops, livestock and commercial trees.
- Supply of food, goods and services duel to climate-related collapse of supply chains and distribution networks.
- People and the economy from climate-related failure of the power system.
- The UK from climate change impacts overseas.

Broader Context

International and national bodies, such as the Intergovernmental Panel on Climate Change (IPCC) and the UK Committee on Climate Change (CCC) have given clear messages that governments are not yet doing enough to tackle climate change, but that there is a viable way to achieve net zero and avoid the worst impacts of climate change. We are currently on course for 3-4°C of warming but with a concerted international effort and investment, limiting warming to 1.5-2°C is possible, as per the United Nations Paris Agreement.

Climate change cannot be tacked in isolation. The 17 United Nations Sustainable Development Goals, of which climate change is one, show that there are many factors that influence the health and prosperity of people and the planet.

The UK has a world leading Climate Change Act which sets out our national ambition to be net zero by 2050 and contains budgets for the amount of carbon we are able to release into the atmosphere. We have already seen significant progress to reduce our emissions. From the year 1990 we have reduced emissions by nearly 50% and by 2030 we are on track to achieve a 68% reduction.

In 2021, the UK's Net Zero Strategy was published setting out policies and proposals for decarbonising all sectors of the UK economy to meet the national net zero target of 2050.

Yorkshire & Humber Climate Action Plan

In November 2021 the Yorkshire and Humber Regional Climate Change Commission published the first ever climate action plan for the region. The action plan has been developed to encourage shared responsibility for climate action, and makes the case for significant, tangible actions to tackle the climate emergency. The plan highlights the need to move beyond targets and planning to action and delivery, calling for climate and ecology to be places at the heart of decision making.

A fundamental aspect of the plan is the importance placed on building resilience to the changing climate (sometimes called being climate ready, or climate adaptation). Over recent years a considerable amount of emphasis has been places on reducing our carbon and other greenhouse gasses to limit warming. The Yorkshire and Humber Plan recognises that even when emissions are cut the climate will still change and we need to be prepared and take action to protect our way of life.

The action plan details a framework for change and 50 actions that will focus climate action across the Yorkshire and Humber region. The plan focuses on building a fair and just transition and to build the region's resilience against climate disasters. It also sets a target to achieve net zero by 2038 and specifies the need for "significant progress" by 2030.

Cross cutting themes

The following outline the cross-cutting themes which underpin our Strategy. Solutions to meet the challenges of climate change should where possible also tackle the challenges of the broader societal issues faced in the East Riding of Yorkshire, including the rural nature of the area, health and wellbeing and inequalities.

East Riding Rurality

The East Riding is predominantly a rural area, with 44% of residents living in dispersed rural communities. Rural areas face a different set of challenges to that of urban areas especially when tackling climate change. Some of those challenges faced by our residents include limited availability of public transport, or access to suitable employment. The rural nature of the area also poses challenges to the council, for example we need more vehicles and crew to complete waste collection rounds.

341,173 people live in the east Riding of Yorkshire (ERYC,2022)

93% rural by area
44% rural by population (ERYC,2022)

157,760 households in an area covering approximately **930 sq/m** (ERYC,2022)

Like many areas across the UK the East Riding has a broad range of household income levels, however there are pockets of deprivation in places such as Goole, Bridlington and South-East Holderness. Increasingly, the population in the East riding is becoming older, due to a high percentage of people retiring to the area. Deprived populations and elderly people are more likely to suffer from the impacts of climate change as they have less resilience to severe weather events.

Whilst the landscape and demographic of our area is a strength and presents many opportunities, current economic uncertainties, major policy changes and continuing downward pressure on public sector finances are presenting rural communities with numerous challenges and climate change only adds to these pressures. Throughout this strategy we have identified where challenges, opportunities or actions link to the rural nature of the East Riding of Yorkshire using this symbol:

East Riding Coast

The East Riding of Yorkshire is not only rural, but is also defined by its coast, stretching from Flamborough Head in the north to Spurn Point in the South, a total of 53 miles. The 120-metre-high chalk cliffs, stacks, caves, and coves at Bempton and Flamborough Head support large numbers of seabirds such as puffins, gannets and kittiwakes which together form the UK's largest mainland breeding seabird colony. Several major settlements are located along our coastline (from north to south Bridlington, Hornsea and Withernsea) and have a significant part to play in the prosperity of the area, with fishing, offshore developments and tourism forming a key part of the region's economy. Tourists visit the area specifically for our coastal towns, long sandy beaches, and wildlife

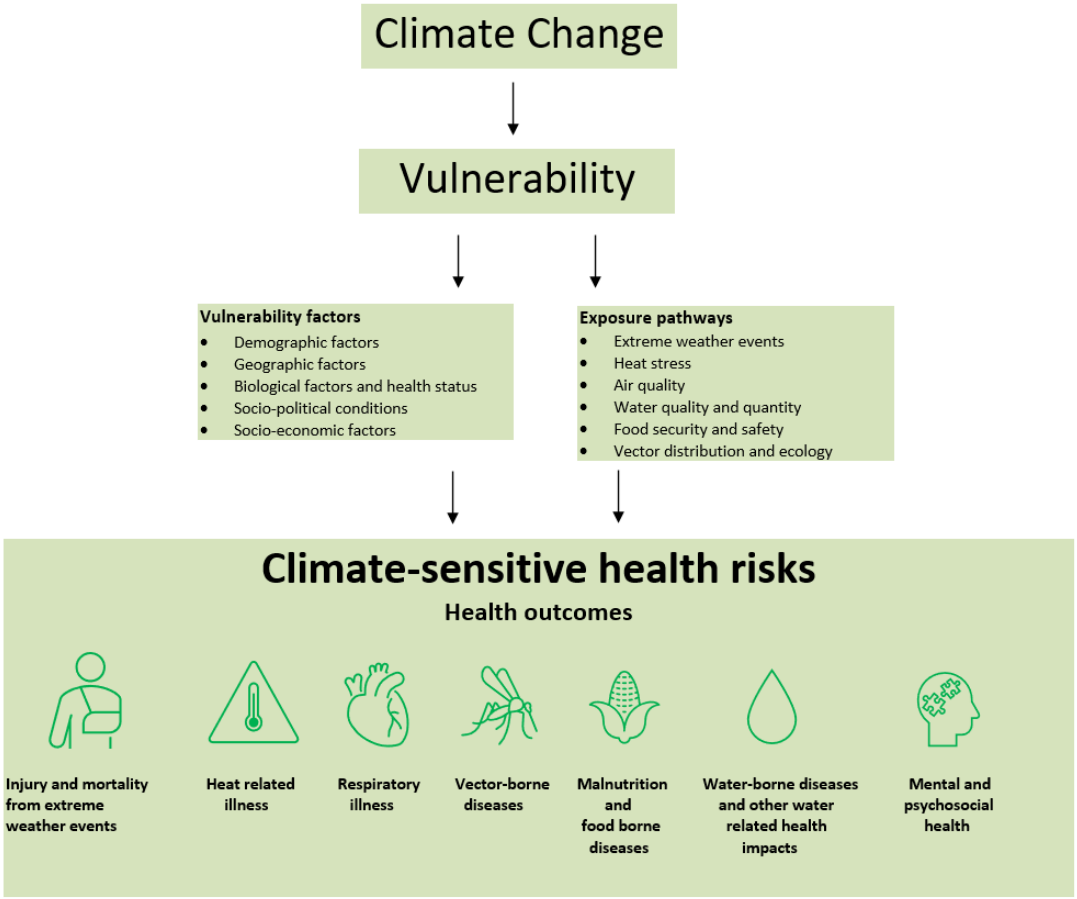
experiences. Whilst the area's connectivity with the Humber Estuary and wider marine environment means that it is perfectly placed to support a broad range of coastal industries.

The coast and its wildlife are however already experiencing the impacts of climate change, and it will be necessary to redress our relationship with the natural environment whilst also securing economic growth. There are many opportunities and challenges linked to our coastline, and a number of climate actions which will link to the coastal nature of the East Riding of Yorkshire. These will be identified within the strategy using this symbol

Health Implications of Climate Change

'Climate change is the biggest health threat facing humanity' (World Health Organisation (WHO)).

It is widely acknowledged that the risks from climate change will affect everyone. Some will be affected more than others. The people whose health is being harmed first, and to a greater degree than the wider population, are often the people who contribute least to climate change. People in low-income households and disadvantaged communities are often hit first and hardest. The diagram below, created by WHO, provides an overview of climate-sensitive health risks, their exposure pathways and vulnerability factors:



These climate-sensitive health risks are disproportionately felt by the most vulnerable and disadvantaged, including women, children, ethnic minorities, low-income households, migrants or displaced persons, older populations, and those with underlying health conditions. Health impacts of climate change will be determined by how vulnerable and resilient people are and how quickly society can adapt to the changes we see. Climate change is also expected to increase the pressures on our health care systems.

Most action we take on climate change will impact health, therefore, as part of the development of this strategy a Health Impact Assessment (HIA) has been carried out. The assessment picks out some of the positive and negative impacts of climate change and highlights steps that can be taken to minimise or maximise the effects respectively.

The strategy will seek to act on the recommendations contained within the HIA either within our action plan following implementation of this strategy, or via relevant Council Strategies and Policies. This symbol will note those areas where Health is a consideration within the challenges/ opportunities or actions:

Inequalities and Climate Change

Certain social groups are particularly vulnerable to the impacts of climate change, for example, single parent households and carers (who are disproportionately female), disabled people and the elderly. The root causes of their vulnerability lie in the intersectionality of their geographical locations, their financial and socio-economic circumstance, and their cultural and gender identity, in addition to their access to services and decision making.

The most vulnerable can also be disproportionately impacted by climate change mitigation measures, which can place a higher financial burden on low-income households, for example, decisions that expand public transport or carbon pricing may lead to higher public transport fares which can have a greater impact on low- income groups.

East Riding of Yorkshire residents will be included in the decision-making process for the climate change strategy. The strategy will be developed and implemented with transparency and provide easy access to information.

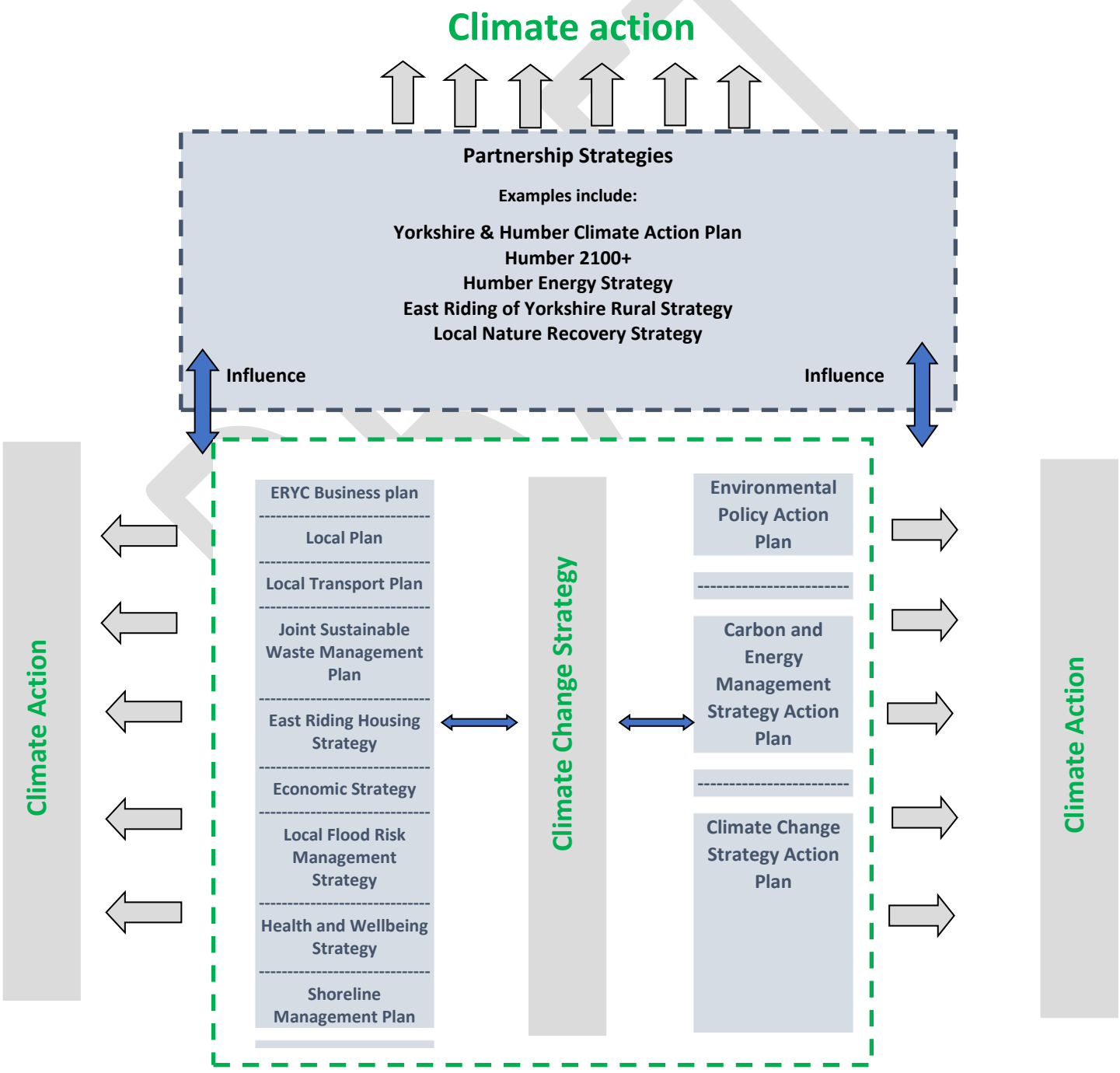
The Council are keen to regularly consult with vulnerable residents on the issue of climate change to ensure that the strategy is inclusive and mitigates/maximises any negative/positive impacts respectively, and that any measures are taken to ease the burden on protected groups as far as possible. This symbol will note those areas where equality is a consideration within the challenges/ opportunities or actions:

Linkages to other Strategies and Policies and Corporate Requirements

The Climate Change Strategy will set the overarching direction of travel and identify key opportunities for action to tackle climate change across the East Riding. It will form part of a suite of plans, policies and strategies that contribute to climate action.

The diagram below highlights the interdependencies between the Climate Change Strategy, other Council plans and strategies and those of key partners, with all of these contributing to climate action across the East Riding. The green dashed box highlights Council strategies links, whereas the blue dashed box represents partnership strategies with the green arrows highlighting climate action delivery.

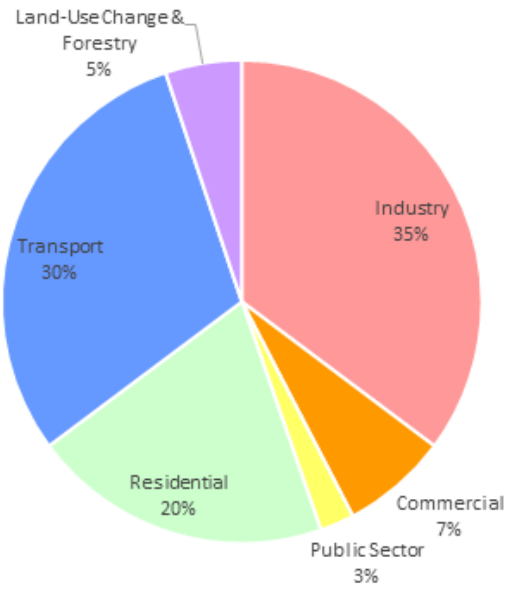
East Riding of Yorkshire Council strategy landscape to support climate action across the East Riding:



Where are we now?

East Riding of Yorkshire

The estimated carbon footprint of East Riding of Yorkshire was 2731.9kt CO_2e in 2019. *Please note we will endeavour to continually update this data in alignment with the release of emissions statistics by Government.*
To identify priorities for climate action we need to understand where our emissions come from. The chart below shows the main sources of emissions in the East Riding, breaking it down into key sectors. These are the latest estimates of the territorial emissions produced by the Government, where emissions are allocated according to the point where that energy is consumed. This does not account for emissions from imported goods into the East Riding.



The industrial sector produces a large proportion of the emissions in the East Riding, despite a reduction in emissions over recent years. The region is nationally recognised for its industry and manufacturing, particularly around the Humber Estuary. The industrial cluster in the Humber region emits more emissions than any other UK cluster and accounts for a large proportion of the total emissions in the East Riding.

Emissions from road transport have only marginally declined since 2005 and still remain a large part of the total emissions in the East Riding. This is because, despite, improvements in vehicle efficiency and clean technology, these gains have been offset by an increase in road traffic.

Notably, there has been a 60% reduction in emissions from electricity in the East Riding from 2005-2019. This is largely due to an increase in renewable energy capacity contributing to the decarbonisation (less carbon used to produce electricity) of the national electricity grid. This is alongside phasing out the use of carbon intensive fuels sources like coal, which have contributed to the overall reduction in residential and industrial emissions in the East Riding of Yorkshire.

Agricultural emissions are somewhat captured in the sectors for 'Industry' and 'Land-Use Change & Forestry' and have only seen a slight decline. This data, however, is not likely to present the true

picture of agriculture in the East Riding, as emissions from livestock and fertilisers are not well captured. It is suggested that 10% of the total greenhouse gas emissions in the UK are from agriculture.

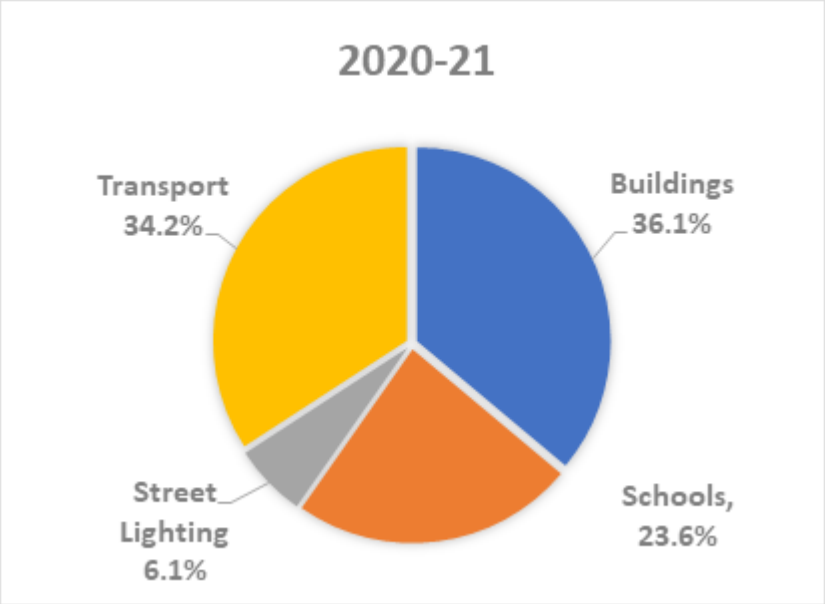
Not all the emissions we produce in our daily lives are captured in the data above, because carbon emissions are produced from the products we purchase and consume like food and drink, clothes, shoes, consumer electronics and appliances. Each product that is purchased has a carbon footprint, which will depend on how the product is sourced, prepared and transported during it's lifecycle.

It is estimated that in the East Riding the emissions produced from food and diet, along with the consumption of goods and services (including leisure and entertainment activities) per-household is similar to the UK average. Changing personal daily habits and what we consume can help tackle climate change.

East Riding of Yorkshire Council

The estimated carbon footprint of East Riding of Yorkshire Council was 29,875t CO_2e in 2020-21.
The Council is one of the largest unitary authorities in the country, is responsible for a large array of property and infrastructure assets and provides public services to an area of over 930 square miles.

The Council directly accounts for approximately 1% of the total carbon footprint of the East Riding of Yorkshire. This includes the total emissions from assets that are owned or managed by the Council including buildings, schools, streetlights and the fleet of transport. The chart below illustrates the relative contribution of these asset groups to the Council's overall carbon footprint, using the most recent data we have available.



The council holds data on carbon emissions back to 2007/08 and since then buildings have always been the largest contributor to our overall emissions, this year that was just over a third (36.1%). This is followed closely by transport (34.2%), which reflects the area wide trend of steady increases in emissions overtime. Schools account of 23.6% of emissions and are a focus for future carbon reduction activity. Street lighting accounts for just 6.1% of emissions and has seen significant reductions due to the upgrade to high efficiency LED lamps.

Over the last decade, the Council has reduced its total carbon emissions. This has been the result of the Council's carbon reduction initiatives and having an Environmental Policy process that delivers environmental improvements, demonstrated through our ISO14001:2015 accreditation. Major external factors have also contributed to this including the decarbonisation of the electricity grid.

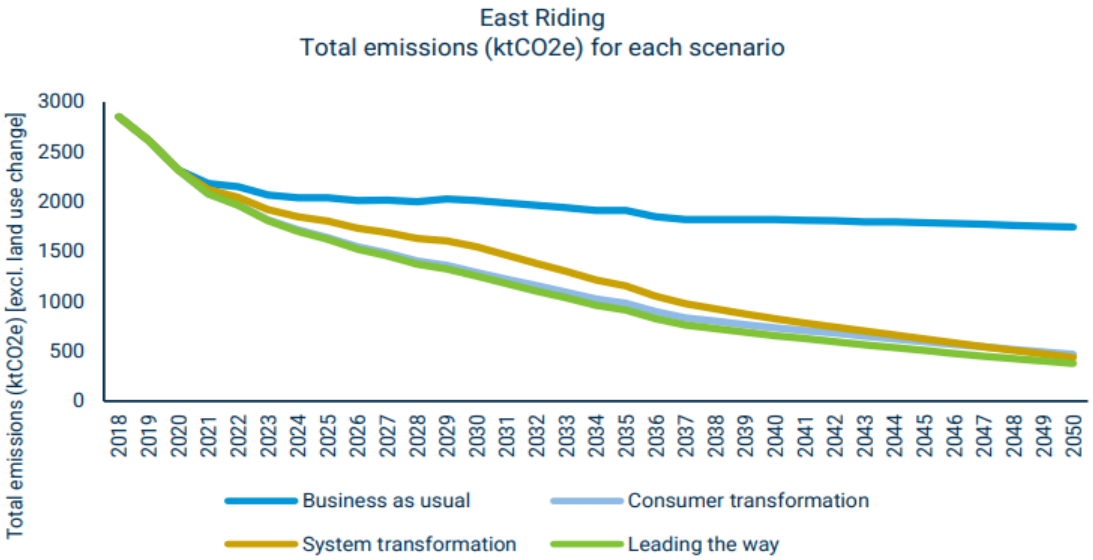
The Council's Carbon and Energy Management Strategy found that whilst the Council's carbon emissions are predicted to decrease in the short-term, due to the decarbonisation of the electricity grid, the Council will fail to meet the Climate Change Committee's (CCC) 4th and 5th carbon budget targets later this decade. To meet these, the Council will have to significantly increase investment in carbon and energy reduction technologies and set relevant policies to reduce the authorities carbon footprint.

More data would support further understanding of the emissions we produce. In particular, the emissions that occur indirectly as a result of the Council's activity. These are often referred to as scope 3 emissions and usually represent 70-80% of a local authority's total emissions. Typically, these relate to the emissions associated with the things we buy (procured goods) and services, outsourced contracts and staff commuting. As part of our carbon monitoring and reporting we will explore ways to capture these emissions and set subsequent reduction plans.

Pathways & Trajectories

The Tyndall Centre for Climate Change Research have calculated carbon budgets for each of the local authority areas in the UK. This helps local authorities to understand the contribution they must make towards the Paris Climate Change Agreement. The carbon budget sets out the maximum amount of carbon dioxide that can be emitted in a local area to limit global warming to 1.5 degrees compared to pre-industrial levels. With no change to the current emissions produced, it was predicted that the East Riding of Yorkshire would use its carbon budget by 2026.

We have undertaken a study to further understand the various pathways to achieve net zero. The research suggested that to align with a Science Based Target of 1.5 degrees, East Riding of Yorkshire will need to achieve net zero emissions by **2044**.
The challenge for achieving this should not be underestimated and will require significant changes to the way our energy system operates and fundamental lifestyle changes. Even if we follow the more ambitious pathways presented by the National Grid or Northern Power Grid, this may not achieve the net zero goal by 2044 and would require offsetting of residual emissions, which should always be a last resort. This is presented as the 'Leading the way' scenario on the graph below.



According to study we had commissioned, this scenario would require as a minimum a:

- 78% reduction in transport emissions with private vehicles and public transport powered by electricity or hydrogen;
- 89% reduction in industrial emissions; and
- 94% reduction in building emissions by maximising thermal efficiency and the majority of homes and commercial buildings operating a heat pump.

Measuring progress on climate adaptation is more challenging, primarily because the impacts of climate change are so varied and are changing all the time.

Nationally, the Government is required to produce a five-yearly climate change risk assessment, which helps set the National Adaptation Programmes, with the next set for 2023. The Climate Change Committee produces an assessment (every two years) of the UK Government's progress with adaptation. The most recent report found that action on adaptation has failed to keep pace with the worsening reality of climate risk and acting sooner will save more resources rather than waiting to deal with the consequences.

Locally, we continue to monitor and track elements of climate risk in the East Riding across our different work streams and partnerships. This includes:

- A programme to assess the levels of risk from coastal erosion, which includes twice yearly aerial image and Light Detection and Ranging (LiDAR) surveys of the whole East Riding coastline.
- A series of assessments and studies to improve understanding of surface water flood risk, test the effectiveness of flood mitigation works and record the condition of flood defence structures. This includes our cutting-edge approach to produce 'baseline' integrated computer models of the area's drainage catchments, which we can overlay with rainfall and tide level data to simulate combined sources of flooding.
- Our emergency planning team regularly update and share an assessment of the major risks we face in the East Riding, including those from climatic and weather events, so the core responders can plan and prepare for emergencies as necessary.
- Measuring progress with partnerships, such as the Humber Resilience Forum and the Regional Flood and the Yorkshire Regional Flood and Coastal Committee (RFCC).

Whilst we have these procedures in place for measuring climate risk, we will continue to undertake research to further understand all the risks from climate change, estimating the costs of achieving climate resilience and how the Council can support residents and businesses with adaptation measures.

What is important to our residents?

Initial Public Consultation

Recognising that early engagement was critical to the development and success of the Climate Change Strategy, East Riding of Yorkshire Council utilised the online engagement platform, Commonplace, to better understand public opinion on climate change in the local area. The consultation took place between November 2021 and February 2022. We had 300 responses and the below highlights the results.

We found the key climate priorities for respondents, in order of popularity, were:

- Transport and air quality.
- Trees and green space.
- Buildings and homes.
- Energy supply.
- Community action.

We also found, the top priorities for driving climate action, in order of popularity, were:

- Political leadership.
- Community involvement.
- Funding.
- Education and awareness.
- Transparency.

Some of the other frequently mentioned topics, outside of the set questions of the survey were:

- Electric vehicle infrastructure.
- Electrification of the rail network.
- More engagement with residents on climate change and the environment.
- Supporting active travel

We have worked with members of the Youth Parliament, the Regional Youth Climate Action and East Riding Voluntary Action Services to hear what our young people think about their future and more specifically climate change. Climate Change was a key priority for candidates for the youth parliament. East Riding of Yorkshire Council will support young people to have their say on how climate change is addressed.

The East Riding of Yorkshire Council recognise the importance of individual actions and those of community groups, businesses and partner organisations. Consultation and engagement will remain an important tool to delivery of the climate change strategy.

We have reflected the views of residents within our strategy. The next opportunity to input into the strategy will be between August and September 2022. During this 8-week consultation we will seek views on the draft Climate Change Strategy.

Our Approach

This strategy outlines the approach the East Riding of Yorkshire Council will use to reduce carbon emissions and build resilience to climate change. It is designed to set the East Riding on a path to net zero by establishing a flexible road map which can be added to over time as new policies and strategies are introduced that impact our ambitions.

The strategy will take an integrated approach to climate change, considering how we become more resilient to the changing climate (climate adaptation) and how we can reduce our impact on the climate (climate mitigation).

The strategy has been developed to cover the period 2022-2030 with the aim to kick start **rapid action** to reduce emissions and build resilience. During this time, we will focus our efforts on quick win actions (those that make big carbon savings or are simple to implement). We'll also develop our data to ensure we have the best information on which to base future decisions. This approach will enable us to reassess our position in 2030, and ensures the strategy remains aligned with evolving policy, legislation and technological changes.

The Strategy is...

- Based on our current understanding and evidence which will develop and evolve overtime.
- Integrated. A Strategy that will set aims for reducing emissions and building resilience to the climate within East Riding.
- A Strategy that will set our priority areas for action to 2030.
- A plan that has been developed in collaboration with key partners and aims to reflect the views of residents.
- Flexible. We will update this regularly to ensure that it aligns with evolving policy, legislation and technological & market changes.
- A Strategy that builds on the positive actions taken by the Council, its partners, local businesses, and residents within the East Riding.
- A Strategy that has sustainability at its core. We will strive to ensure actions represent a sustainable solution to the challenges of climate change, making best use of resources and having socio-economic benefits.
- Designed to support, coordinate, and facilitate climate action.

The Strategy is not...

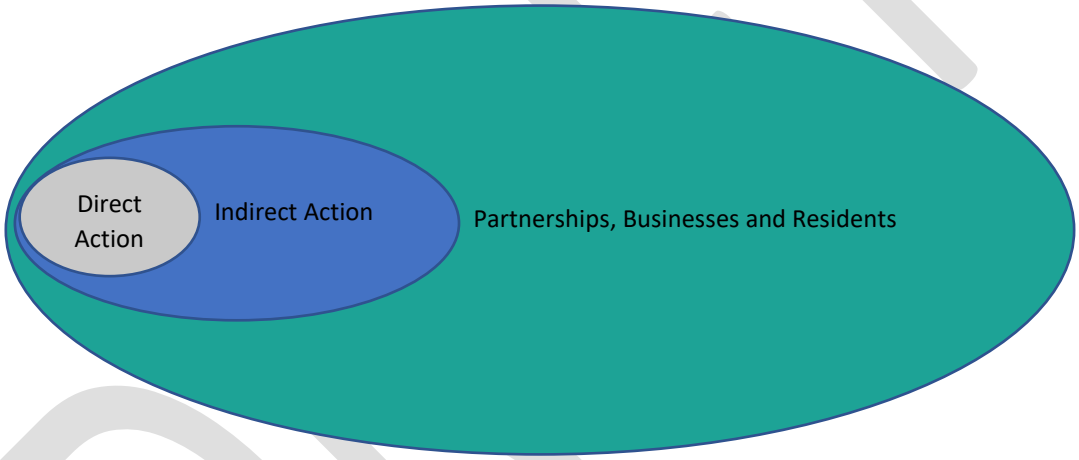
- Perfect. The Council has led on the development of this Strategy at pace, acting in line with the climate emergency that we are facing.
- A fixed path to achieving net zero. We will continue to review our strategy to ensure we're still heading in the right direction.
- Enough on its own to meet our climate targets. Everyone must play their part.
- A Strategy that will dictate action. Instead, we hope to work with partners, businesses, and our residents to establish the most suitable actions for the East Riding.

Scope

East Riding of Yorkshire Council recognises that we directly impact a small proportion of the emissions of the East Riding, however we do influence them indirectly. This strategy has been developed to cover 3 broad areas of our work.

- East Riding of Yorkshire Council **directly** reduces carbon emissions and takes action to adapt to the changing climate. *ERYC is directly responsible for just 1% of emissions in the East Riding.*
- I**ndirect** climate action will facilitate change through the services the Council delivers. *ERYC is responsible for the delivery of many key services, such as planning, housing, economic development and waste etc estimates suggest that we might influence as much as 30% of the area's emissions in this way.*
- East Riding of Yorkshire Council work in **partnership** with other organisations, businesses and communities and we will support climate action across the East Riding through collaboration.

Local Authority Sphere of Influence



Governance

This strategy is a living document, which means that as our knowledge of climate change improves, or more national policy and legislation come into effect this will be reflected within the strategy. We will review the strategy yearly to ensure it is up to date and accurate. We will also provide a yearly update on progress through a revised Environmental Statement. This will reflect key activity taken throughout the year and achievements made, including reporting our corporate and area wide carbon footprints.

Taking action to address the Climate Emergency can-not be done solely by officers, but instead needs a multi-disciplinary approach. We will need to draw on skills and resources from across the organisation and with wider partners. It will need to be part of the way we do things and embedded in the way we deliver our services. We will review our service plans to ensure that they align with the ambition of the strategy.

We will also explore the opportunities to develop an area wide climate change action group. This could take several forms and will be subject to public consultation to ensure it meets the needs of residents. Such a group would aim to expand on existing community involved and support future action. It would enable regular two-way dialogue and share ideas with and across local community representatives.

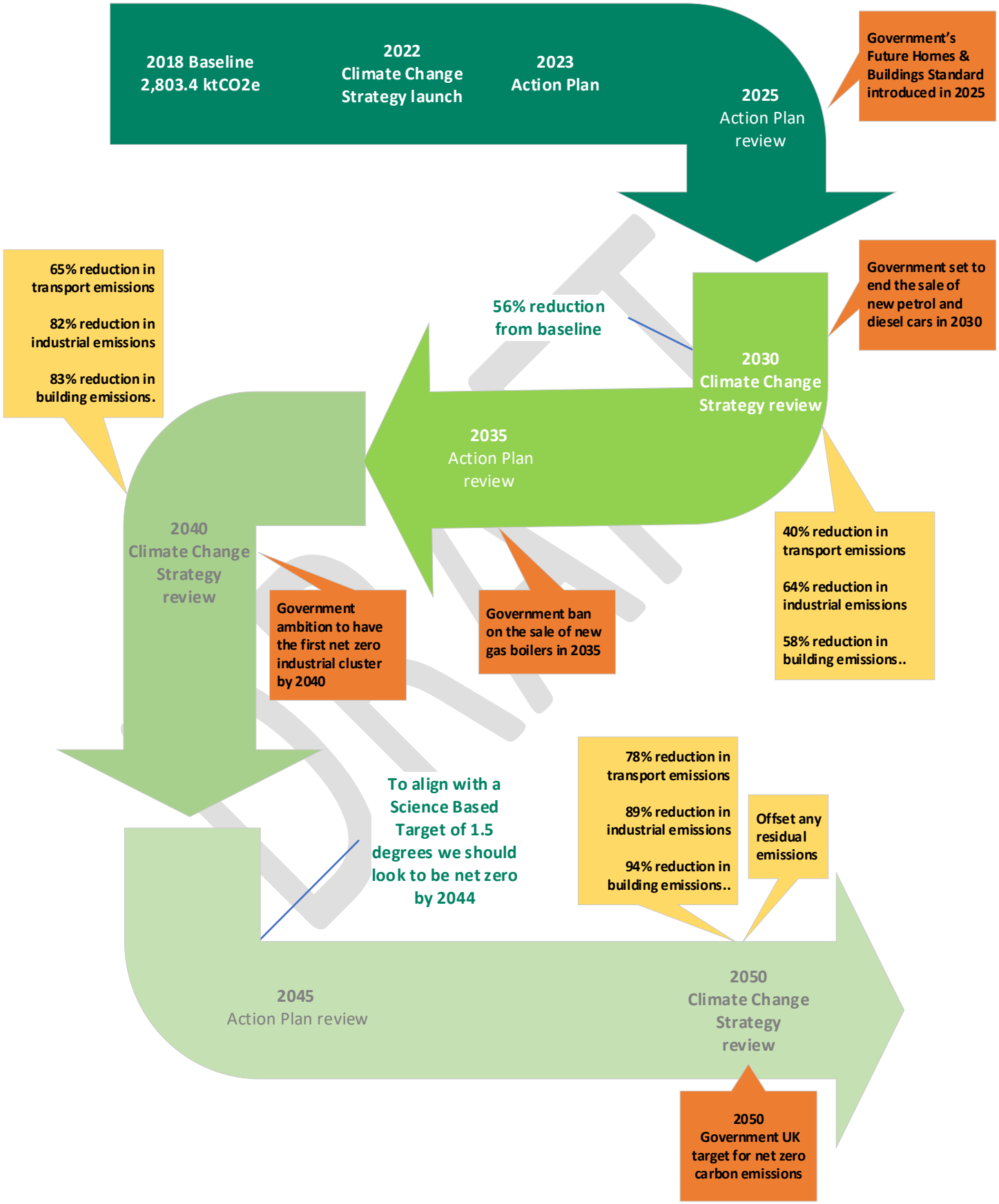
Due to the broad range of areas the climate change strategy covers it is essential to have an action plan detailing activities and projects that contribute to the strategy vision and priorities. The action plan for this strategy is in development and will cover each of the priority areas identified. The action plan will be updated every 5 years, except for the initial action plan, which will be for the period 2022-2025. The initial period of the action plan will lay the foundations for future activity and focus in on actions that will deliver rapid emission reductions.

Climate action will also be monitored through our corporate risk register, which as well as quarterly reporting will be reviewed annually to ensure that we are capturing all the risks effectively and that they are still appropriate. Action will also be scrutinised at regular meetings of Environment and Regeneration Overview and Scrutiny.

Targets

The council set a target for its services to be net zero by 2050 in line with national government. This target will be reviewed over the period of the next action plan to ensure we are able to achieve it, and identify opportunities to bring this date forward if possible.

An area wide emissions target has not currently been set. This is because such a target needs to be developed through extensive consultation across partner organisations, businesses and residents. During the course of the action plan, we will consult widely on a potential area wide target which can be supported and monitored by the action group as defined within the governance section.



Roadmap based on an ambitious scenario for achieving the fastest credible decarbonisation, achieving net zero before 2050. Scenario built around the key elements of future energy scenarios by Northern Powergrid and National Grid ESO.

Priority Areas

Transport

Transport is the sector that emits the most greenhouse gas emissions across the UK, accounting for 31.5% of carbon dioxide emissions in 2021. In East Riding, the transport sector is second only to industry as the highest emitting sector, making up 30% of all carbon emissions within the East Riding of Yorkshire. The majority of transport emissions in East Riding are from road transport.

To achieve our net zero ambitions there will have to be a transition to low and zero emission vehicles, a modal shift towards active travel and public transport, and an avoidance of unnecessary travel through digital and rational solutions. As set out in the UK Government's Transport Decarbonisation Plan, the electrification of road transport is only part of the solution and it is essential we avoid a car-led pathway to net zero and instead make public transport, cycling and walking the natural first choice for all who can take it.

Reducing carbon emissions and improving healthy lifestyles is a key objective set out in East Riding of Yorkshire Council's Local Transport Plan (2021-2039) which sets our transport funding priorities and solutions to help us meet net zero and increase climate resilience.

What we have done

- Supported and encouraged the use of electric vehicles (EV's), through our Public Electric Vehicle Infrastructure Strategy, by installing a basic network of charging points across the East Riding including at 15 Council owned car parks and across our leisure centre facilities.

- Implemented a number of initiatives to support and encourage more people to use active travel modes more often. This has included:

    - the development of a series of 14 Local and Cycling and Walking Infrastructure Plans (LCWIP's) covering all our main settlements, to target investment in walking and cycling routes, such as the infrastructure improvements between Cottingham and Hull and Beverley and Hull, completed in 2022.
    - development of numerous town centre walking and cycling maps and several leisure cycle maps for settlements including Pocklington, Driffield, Goole, South Holderness and Beverley.
    - the *Walking the Riding* website which contains details of over 300 local walks of varying lengths and difficulties.
    - the *Walking for Health* programme run in partnership with the NHS to encourage people to attend a group walk led by a qualified and experienced walk leader.
    - the Council's partnership with British Cycling to run a programme of SkyRide local cycling events at locations across the East Riding.

- Encourage more people to travel by public transport as an alternative to using their cars. Examples of schemes we have successfully delivered to encourage public transport use have included:

- the completion of the Bridlington Integrated Transport Plan (Phase 2) in 2020, providing a coach pick-up and drop facility and a new bus hub adjacent to the railway station.
- in partnership with bus operators, the development of an app to enable passengers to access real time bus information, such as arrival times, on their smartphones, improving passenger experience by making users aware of any delays and reducing waiting times.
- accessibility enhancements have taken place at transport hubs, like the footway surface improvements and additional signage at Goole station to support those with mobility issues and encourage active travel integrated with rail travel.

- Supported and empowered a number of local community transport groups and schemes to assist people who cannot access private or public transport, including through:

  - setting up a network of 'Parish Transport Champions' and 'Parish Transport Toolkit' to help identify transport barriers and devise innovative solutions which meet local need.
  - help and support the volunteer led East Riding Community Transport Operators Network.

- The rollout of seven new zero-emission electric vans, three electric cars and one electric minibus for the council to use in delivering services, with charging points installed at three of our depots so far.

- We manage and maintain a large proportion of the East Riding's transport network. This includes a highway network of approximately 2,206 miles, a footway/cycleway network of over 1,082 miles and other transport assets such as street lighting and road signs. The impacts from climate change are reducing the service life of transport infrastructure, requiring more regular maintenance and management which means more energy and raw materials are consumed.

Key Challenges & Opportunities

Challenges to Delivery

- **Addressing the heavy reliance on car travel** - In East Riding, the distance between remote settlements and local services, coupled with higher than average car ownership, means there is estimated to be more trips made by car compared to other areas in the Yorkshire and Humber region.
- **Addressing freight transport -** The East Riding generates a high proportion of carbon emission from freight transport, with a large amount passing through the Ports of Hull and Goole. High volumes of road freight on the M62/A63 corridor and other major road networks are a specific challenge.
- **Capital cost of Zero and Ultra Low Emission Vehicles -** The current market for ultra low emission vehicles makes them unaffordable for many residents and businesses across East Riding.
- **Rurality -** East Riding of Yorkshire is predominantly rural (93% rural by area) which is a key factor for high car ownership rates and car use being the preferred mode of transport; both fundamental challenges to reducing carbon emissions. This means community transport services and electrification of road transport will be vital in our decarbonisation effort for these areas.

- **Funding -** There is currently insufficient funding to undertake all of the proposed transport schemes set out in Council strategies, with reductions seen in funding from National Government for many areas of sustainable and active travel, including for our Local Cycling and Walking Infrastructure Plans.
- **Levels of Walking -** Despite national government strategies and local improvements in infrastructure and promotion, there has been a decrease in average trips made by walking across England.
- **Impact of Covid-19 -** The pandemic and social distancing has caused disruption to bus and rail patronage and industry forecasts suggest a recovery to previous levels will take years.

Opportunities

- **Encouraging healthy lifestyles -** Encouraging and supporting active travel to reduce emissions, can help to reduce the negative effects of a sedentary lifestyle and also reduce the likelihood of developing chronic health conditions and associated long-term healthcare costs.
- **Homeworking -** There is an opportunity to take advantage of the demand for homeworking across the East Riding, since the Covid-19 Pandemic, to reduce emissions associated with commuting.
- **Active travel opportunities -** The rural scenic nature, flat landscape and compactness of East Riding's large towns offer local residents and visitors an enticing option to travel on foot or by bike.
- **Reducing congestion -** Schemes to encourage active travel and use of public transport will also reduce traffic congestions by encouraging more people away from using the private car.
- **Efficient maintenance -** We continue to develop new approaches to minimise the environmental impact of road maintenance schemes. For instance, since 2011 we have swept up loose chippings and stockpiled them for washing, grading and recycling. This has resulted in savings of £40,000 a year. It has also led to carbon emission reductions from making less deliveries of road chippings and less consumption of virgin aggregates for road surfacing.
- **Uptake in cycling -** The Covid-19 pandemic led to a change in travel patterns and an uptake of cycling across England with cycling levels increasing to the highest levels since national travel surveys were undertaken. There is a huge opportunity to capitalise on this at a local level.

Areas of Action

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East Riding of Yorkshire Council can…

- Explore how the Council can expand the installation of publicly accessible EV charging points across the East Riding.
- Explore measures to reduce the carbon emissions of the Council's fleet by:
  - Transitioning to electric vehicles.
  - Procuring vehicles at the highest emission standards.
  - Monitoring driving behaviours to reduce fuel consumption and carbon emissions.
- Undertake infrastructure improvements to the local walking and cycling networks, funded through the Local Transport Plan process.

- Invest in infrastructure to support sustainable multi-modal journeys, such as improved cycle parking at bus and rail stations.
- Support and encourage residents to walk or cycle for short trips through promotional tools, free cycling training and other behaviour change programmes.
- Work with schools to encourage children and parents to walk, cycle or scoot to school and provide support to schools to help them achieve a Modeshift sustainable travel accreditation.
- Promote car sharing for residents who cannot use or access more sustainable forms of travel.
- Maintain the Public Rights of Way network in the East Riding to provide a better experience for all users, supporting the shift away from car travel.
- Develop an East Riding Local Plan that supports developments where there are services, facilities, homes and jobs which reduce the need to travel and can be served more easily by sustainable modes of transport.
- Support and empower parish councils, local communities and groups to devise innovative and sustainable transport solutions, offering our Parish Transport Toolkit we have created and utilising the network Parish Transport Champions.
- Work with other authorities, local universities, businesses and healthcare providers to encourage and support active travel across the region.
- Work with partners on innovative projects that improve the experience of rail and bus journeys in the East Riding.
- Explore with partners projects to decarbonise the rail network and continue to put forward proposals for rail electrification in the Humber area.
- Work with other authorities, East Yorkshire Buses, the Rail Industry and the Highways Agency to improve accessibility to public transport and continue to encourage use of public transport in areas with high quality public transport links.
- Help create a network of public and privately owned electric vehicle infrastructure across the East Riding.
- Explore with partners innovative projects that support on-street EV residential parking and the creation of EV charging community hub locations.
- Assess ways to reduce emissions associated with freight transportation, such as by using renewable fuels or through transportation by rail or water instead of roads.
- Through our Broadband East Riding Programme, work with suppliers to ensure our residents, visitors and businesses enjoy faster broadband connectivity enabling digital options that reduce unnecessary travel.

How can you reduce your carbon footprint?

- For shorter trips, walking and cycling is a good way to reduce your carbon footprint and can have a positive impact on your health.
- If you cannot access more sustainable forms of travel, have you considered car sharing? It is a great way to help the environment and can save you money on travel costs too. Liftshare manages a car sharing scheme that is open to all. See link https://liftshare.com/uk

Energy

> ‘The energy system is changing rapidly. The UK’s net zero decarbonisation targets are accelerating the growth of new low carbon energy sources. Energy demands are changing as consumers choose new technologies for heat and transport. And smart technology and digitalisation is driving a change in how consumers interact with energy.’
>
> National Grid, Future Energy Scenarios 2021

Although using energy in our homes is easy (we often push a switch to turn on a light), producing, transforming, transporting and distributing that energy across a region is a more complex and difficult task. All of this together is commonly described as our ‘energy system.’ Based on future scenarios of our energy system, if we are to meet net zero by 2050 or earlier, we would likely require the following:

- A transition away from unabated natural gas. Some natural gas will be required for hydrogen energy production in the short-term.
- An increase in renewable energy production, particularly wind and solar power.
- To make more use of hydrogen energy, which will help with inter-seasonal flexibility (when we cannot rely on solar and wind power).
- An increase in the use of bioenergy (sourced from recently living organic materials), and combine with carbon capture and storage, where possible, to create negative emissions.
- A mass transformation of how we consume energy with the electrification of home heating, transport and industry.
- Become smarter and more flexible in the way we use energy, balancing demand to reduce peak energy requirements.
- Store energy more effectively and reduce energy waste.

East Riding of Yorkshire Council continues to take action to support the transition to a cleaner energy system and this priority area sets out how the Council can further support the ambitions listed above. Fundamental changes to the way we will consume energy, however, such as the electrification of transport, heating buildings and industry are set out in more detail in other priority areas.

What we have done

- We have undertaken an array of energy projects significantly reducing the authority’s carbon footprint and reducing emissions across the East Riding. The Council has previously been successful in bids to support the development or installation of:
  - District energy networks. The Council has two district energy projects in advanced stages of development at Beverley and Goole.
  - Large scale solar PV technology, such as the installation of a solar farm at South Cliff Holiday Park, in Bridlington.
  - Low-carbon heating. We have installed over 650 air source heat pumps in Council owned houses and replaced old boilers with high-efficiency biomass boilers in a number of Council maintained schools.

- Projects to support decarbonisation in schools. This has included a school insulation programme, the replacement of old inefficient boilers and programmes to help finance efficient lighting and controls.

- Taken a proactive approach to mitigating climate change in the East Riding Local Plan. More specifically, we look to provide opportunities for renewable and low carbon technologies, decentralised energy and heating and low carbon design in developments across the East Riding.

- Supported the private energy sector through local economic measures that have helped the area become a leader in low carbon technology. This has previously included supporting the creation of the largest Enterprise Zone in England and the Humber Freeport. Within the area there has been investment from the likes of Siemens Gamesa and Associated British Ports into renewable technology, establishing the region as a world-class centre for clean energy production. We are also leading on the Fusion Yorkshire bid to secure a new home for the UK Atomic Energy Authority's STEP Programme.

- Run the collective energy switch scheme YORSwitch, where the Council helps to negotiate for competitive prices with the energy companies to get residents the best deal. This scheme can help reduce energy bills and the vulnerability of lower socio-economic groups to the impacts of climate change by equipping them with a method to make financial savings.

Key Challenges & Opportunities

Challenges to Delivery

Natural Gas – Gas has long been promoted as a transition fuel as it has lower carbon emissions than coal, but still requires a similar scale of centralised infrastructure. As a result, we now have one of the most developed gas networks in the world. This makes the replacement or decarbonisation of the network a key challenge nationally, which is particularly significant given the Government's commitment to phase out the installation of new gas boilers by 2035.

Costs – Whilst we have identified opportunities for carbon reduction initiatives and energy projects, such as new solar farm projects or geothermal heating, the economic viability of projects on this scale are challenging. Rising electricity prices will lead to high running costs for electric vehicles and heat pumps meaning these technologies become less financially viable for businesses and residents.

Fossil Fuel Economy – The Humber is home to many traditional heavy industries, such as oil refining and steel production, whose long-term future is under pressure from decarbonisation. Ensuring this economy remains sustainable during this transition to net zero is essential to the region. To overcome this challenge partners have come together to create a Humber Industrial Cluster Plan setting out a strategy to achieve net zero.

Environmental Impact – A challenge is also using our natural resources sustainably and creating new infrastructure which does not have a negative impact on the wider environment. For instance, offshore wind can negatively impact seabird populations which are already under significant pressure from climate change. As such, we need to plan energy infrastructure developments efficiently.

Opportunities

Hydrogen – The Humber industrial area is leading on the development of hydrogen production and storage facilities to create one of the UK's most efficient gas-fired power station and support the roll-out of low-carbon hydrogen infrastructure. Hydrogen has the potential to be blended into the gas network, used for domestic heating and power transportation.

Offshore Wind – The Humber region has been identified as a flagship region for wind power and will be key to achieving the Governments offshore wind power targets. This is unsurprising given that region is recognised internationally for offshore wind energy with Ørsted's Hornsea Project One, the largest offshore wind farm in the world, powering more than one million homes. Even larger offshore projects are in development, with the majority of the turbines manufactured at the Siemens Gamesa factory in Hull.

Carbon Capture and Storage - Major energy companies have come together to develop offshore carbon capture and storage in the North Sea, forming The Northern Endurance Partnership. This partnership provides the infrastructure needed to transport carbon dioxide from emitters in the Humber to secure offshore storage in the North Sea. In October 2021, this partnership's East Coast Cluster was selected as a priority cluster in phase-1 of the UK Government's Carbon Capture, Usage and Storage cluster sequencing process. Once developed it will transport and store 50% of all UK industrial cluster emissions. This will serve the Zero Carbon Humber project, aiming to establish a fully decarbonised industrial cluster on the Humber.

Industrial Clustering – The Humber is just one of the six energy intensive industrial clusters in the UK. These industrial districts provide unique partnership opportunities for integrating processes, building more efficient supply-chains, utilising by-products or waste materials and conducting research and development on low-carbon technologies.

Biomass – Yorkshire and Humber is leading the way in the UK in terms of biomass energy and fuel production. This includes the 22MW Solar 21 biomass plant in Aldbrough, the Y Pellets wood refinery near Goole and Drax power station in Selby, which is fuelled by compressed wood pellets sourced from sustainably managed forests and waste from existing forestry work.

Areas of Action

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East Riding of Yorkshire Council can…

- Lead by example, maximising opportunities for renewable energy and sustainable energy consumption throughout the Council's estate.
- Assist schools with energy projects by identifying new funding opportunities, providing financial support, energy audits and general advice.
- Look to finalise construction, and identify new opportunities, for district energy networks in suitable locations across the East Riding, maximising opportunities for the utilisation of waste energy and renewable technology.
- As a planning authority, support new developments that enable low carbon energy with neighbourhoods planned around infrastructure such as local microgrids, enabling energy autonomy through self-generation and direct consumption.

- Support work to reduce the environmental impacts of new energy infrastructure construction, operation and decommissioning, in order to achieve truly sustainable energy production.
- Explore further economic measures to support the expansion of the renewable and low-carbon energy sector.
- Work with landowners to assess the benefits and potential of hosting renewable generation.
- Explore with partners the creation of a whole-system local area energy plan for East Riding to help inform our energy decarbonisation roadmap.
- Work with the North East and Yorkshire Net Zero Hub to support local energy projects and attract finance for energy projects.
- Explore and investigate emerging technologies to support energy decarbonisation and storage in the area, such as carbon capture utilisation and storage, hydrogen technology or heat networks.
- Promote the importance of maximising the use of energy assets through energy reduction, flexibility and storage.
- Promote to residents and businesses the benefits of sustainable energy consumption and switching to green energy tariffs.

How can you reduce your carbon footprint?

- Switching to a green energy tariff can reduce your carbon footprint.
- Installing renewable energy technologies (e.g., solar panels) on a property can significantly reduce the carbon footprint of your home and save you money.
- Replacing lights with LED bulbs, washing your clothes less frequently and not leaving your devices on standby can help you save energy and money.
- Line drying clothes where possible promotes energy saving.

Waste

Greenhouse gas emissions from waste management practices currently account for approximately 5% of the territorial carbon footprint for the East Riding. These are mainly comprised of methane released from landfill sites, with some also from waste-water treatment and the incineration of waste. In East Riding, a large proportion of our waste is classified as household, commercial, industrial or agricultural waste.

To reduce the carbon footprint of our waste activities in the East Riding, we will need to reduce the amount of waste we produce by keeping resources in use for as long as possible and preventing waste through the re-use of materials and products where possible. The waste hierarchy is a useful guide for reducing emissions in waste management practices, prioritising action further up the hierarchy.

As well as focusing on waste management practices, our ambition is to help East Riding become a circular economy. This means moving away from the linear process of taking materials from the earth, making products out of them and throwing them away. We want to create a more cyclical process where materials flow, there is a focus on recovery or regeneration of resources and we design products that can be 'made and made again' It is important we consider material use and the life cycle of products because based on what we use in our average daily lives across East Riding, over a third of our personal carbon footprint is from the purchase of goods (including food and diet).

The circular economy, in particular, will require partnership action across all sectors of society, as a unitary local authority only has limited control over the full lifecycle of products and materials.

What we have done

- Our statutory function for waste includes daily household waste and recycling collections covering an operational area of 933 square miles. We operate a three wheeled bin scheme collecting household waste. This includes:

    - **Green Bin Waste -** for household waste that cannot be recycled, this is taken to a waste transfer station where waste is filtered, shredded and turned into refuse derived fuel. It is then used in a multi fuel energy processing plant at Ferrybridge to generate electricity.
    - **Blue Bin Waste -** all waste in the blue bin is taken to a material recycling facility in Teeside where it is sorted into different materials to be sent for reprocessing. The majority of materials are sent to UK reprocesses.
    - **Brown Bin Waste** – all waste in the brown bin is taken to an in-vessel composting facility where it is processed over time to become compost. Each year the Council holds compost giveaways for residents and provides free compostable caddy liners to all residents to encourage food waste recycling.

    As an authority, we have been recognised for our excellence in waste management and recycling. In 2020 we won APSE Service Team of the Year for waste and recycling. In 2020/21

we have reused, recycled and composted 60.8% of household waste and process a high proportion of municipal waste (that cannot be recycled, reused or composted) into refuse derived fuel.

- We operate a chargeable commercial and business waste collection service for general waste and mixed dry recyclables from over 3,800 businesses, alongside a similar service for bulky household waste. All waste is diverted from landfill to electricity generation.

- The Council manages 10 Household Waste Recycling Sites (HWRS). These are places to take used or unwanted household items, such as extra garden waste, furniture, household electrical items and batteries. FCC Environment operate these on behalf of the Council. Waste management on these sites adhere to the waste hierarchy approach, with a recycling rate of 79% and achieving 0% waste being sent to landfill. All waste that cannot be reused, recycled or composted being sent away to a site to be processed into fuel.

  We also promote the reuse of products at the HWRS sites with a reuse shop at the Humberfield site and more recently have set up a project to sell unwanted large domestic appliances (e.g. fridges, freezers) that are brought to the recycling sites, with all money going to the Dove House Hospice.

- The Council also has waste, recycling and sustainability officers leading on engagement and campaigns to encourage waste reduction and recycling. This has included:

  - Engagement with schools and community groups supporting best practice in waste management and behaviour change to influence waste reduction and recycling.
  - Campaigns on social media and communication platforms encouraging composting, less food waste and more recently have created a Council app which helps distinguish which items of rubbish should go in which household waste bin.
  - Engagement with internal members of staff, particularly through our Environmental Policy and ISO14001:2015 process, on sustainable waste management practices and pollution prevention across the Council.

Key Challenges & Opportunities

Challenges to Delivery

- **Covid-19 pandemic** – This pandemic has brought new challenges to waste management, in particular the huge amount of extra medical waste produced which have limitations on how it may be recycled or reused.
- **Commercial waste** – The local authority has limited influence over the management of commercial waste, particularly if they do not use the Council's collection service.
- **Control on production –** Many of the products we consume originate from outside the area, and even the country, meaning we have limited control locally over sustainability in the early stage of a products lifecycle
- **Collection of waste -** We are still awaiting clarity on national changes, through the Environment Act, for the collection of separate waste streams and the impacts this will have, particularly if food waste has to be collected separately from other compostable waste.

- **Transfer of waste -**The transfer of commercial and industrial waste between companies and organisations for alternative or re-use is hampered by overly complex and restrictive waste legislation.
- **Replacement products** There is limited capacity for the large-scale repairing of products, which means that it is more practical, and often cheaper, for individuals and organisations to purchase replacement products and dispose of faulty items, rather than repair them.

Opportunities

- **Environment Act –** The act that came into law in November 2021 plans to extend producer responsibility for waste, create a deposit return scheme for single use drinks containers and further charges for single use plastics.
- **Saving money –** Having sustainable waste management practices in place as an organisation can reduce the amount of waste your business produces, saving disposal costs.
- **Sustainability –** As well as reducing carbon emissions, circular economy principles have wider sustainability benefits, including lowering demand on the finite resources we have available and reducing pollution like plastics.
- **Waste heat –** With the large industrial sector we have on the Humber there is the potential to utilise the waste heat produced from industries to be made available for third parties, without it simply being discharged into the atmosphere.
- **Product efficiency information –** Legislation has come into place, through the Environment Act, giving powers for Government to introduce new resource efficiency information on products, including labelling on the recyclability and durability of products.
- **Yorkshire Circular Economy** - Initiatives by organisations , such as CATCH, are working to instill a circular economy approach across the Humber Industrial Cluster, including the re-use of waste products.

Areas of Action

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East Riding of Yorkshire Council can…

- Continue to review our household waste management procedures using the waste hierarchy principle, increasing the percentage of waste to be reused, recycled and composted, with the remainder sent for energy recovery.
- In line with the Environment Act, review the efficiency of our household waste collections.
- Enable reuse and repair above recycling through setting up and organising sites where household waste in good condition can be donated rather than disposed of.
- Explore innovative means to engage with Council staff to improve sustainable waste practices.
- Work with key partners, such as FCC Environment and Hull City Council, to continue to set up initiatives to help increase sustainable waste management, based on the success of previous schemes like trialling bag sorting at household waste sites or the electrical item collection events.
- Engage with the public, schools & communities to support learning and share best practice, including on:

  - Preventing waste
  - Waste contamination
  - Maximising the value of products through repair and re-use opportunities.
- Work with partners and businesses to reduce commercial waste, encouraging re-use and recycling.
- Work with local government and waste industry bodies to influence and implement the resources and waste strategy for England through extended producer responsibility, consistency in recycling collection and the deposit return scheme.
- Explore new opportunities for the utilisation of waste heat across East Riding.

How might you reduce your carbon footprint?

- Consider how a product is packaged. Can you reuse or recycle these materials?
- Avoid single-use plastics where possible and use reusable shopping bags and cups.
- Use your brown kitchen caddies to store food waste at your home before transferring it to your brown wheelie bin.
- Have you considered donating old clothes, rather than throwing them away?
- Do you have any unwanted domestic large appliance still in good working order? You can donate these at your local recycling site. https://www.eastriding.gov.uk/environment/bins-rubbish-recycling/tips-and-recycling-sites/recycling-site-finder/

Environment

At a local level we have to support the sustainable use of land across East Riding meeting our objectives to support nature, people and the climate. This has to take into account nature recovery, tree planting, recreation, food production, renewable energy and creating high-quality places to live. Whilst many of these types of land use are picked up through the Climate Change Strategy, this priority area focuses on three: nature, farming and food systems.

There are fundamental links between the natural environment and climate change.

- Soils, forests, wetlands, peatlands and oceans absorb and store carbon. There is potential for cutting future emissions through the maintenance of healthy ecosystems and restoring degraded environments. On the other hand, damage to ecosystems can reduce their capacity to capture and store carbon.
- Working with and enhancing nature can provide cost-effective and accessible solutions for climate mitigation and adaptation.
- The climate is changing much faster than nature and wildlife can adapt to it. The pressure our natural resources are under has led to an **ecological crisis** with species and habitats declining at an alarming rate, with the UK experiencing some of the highest rates of biodiversity loss in the world.
- The impact of climate change on biodiversity and ecosystems can lead to other pressures such as pollution, over-exploitation, invasive species, flooding and habitat loss and fragmentation.

Agriculture and the food sector will also play a large role in the UK's climate change response, accounting for around one-third of territorial emissions (including emissions overseas from imported food & drink). In the agricultural sector emissions are largely the result of livestock, fertilisers and operational activity, whilst emissions linked to food and drink production and consumption more broadly, can be related to supply chains, transportation and waste. In East Riding, agricultural land makes up 90% of the land area and supports over 2,000 farming and food manufacturing businesses, illustrating its importance to our economy and cultural identify.

What we have done

- The Council's Environmental Policy set outs objectives for managing and improving the Council's environmental performance. A key theme in the Policy is the 'Natural Environment' which sets out how we act on our statutory duty to conserve and enhance the natural environment and promote the wider social and economic benefits of doing this. The Council is currently in the process of reviewing the Policy and this will reflect the new requirements made on biodiversity and nature in the Environment Act, including the enhanced biodiversity duty, to develop a Local Nature Recovery Strategy and to implement biodiversity net gain for developments.

- We continue to work with the farming sector on sustainability and climate change across our departments and at different levels, including through:
  - engagement with the National Farmers Union and Country Land Business Association.
  - providing business advice
  - owning a number of farms and small holdings which are let to tenants.
  - interacting with farming and food business across our service areas, from planning to food services.

- Facilitate the East Yorkshire Local Food Network, which works to develop and expand the local food and drink sector, whilst emitting fewer carbon emissions.
- The Council hosts and facilitates several key environmental partnerships, including the:

    - **East Riding Rural Partnership –** promotes the economic and social wellbeing of residents living and working in rural communities across East Riding, equipping them with the tools to enable them to contribute to environmental improvements and tackling climate change.
    - **Humber Forest –** works together with communities, businesses and landowners to increase tree cover and maintain existing woodland.
    - **Hull and East Yorkshire Local Nature Partnership –** works strategically to promote the value of the natural environment and the services it provides to the economy and health of our communities.
    - **Yorkshire Marine Nature Partnership –** provides a vehicle for collaboration amongst a variety of external and internal partners in order to better support, understand and holistically manage Yorkshire's marine ecosystems, including its role in climate change.

- As an authority we proactively support young people to engage with climate and nature. This includes a project we have helped fund through East Riding Voluntary Action Services (ERVAS) to support the employment of a 'Green Mentor' who will enable young people to lead the way as 'Green Influencers' on social action projects in their communities.

Key Challenges & Opportunities

Challenges to Delivery

Invasive Non-Native Species (INNS) - Increasing summer temperatures could lead to an increase in non-native species colonising the area or being able to reproduce more successfully and thus potentially become invasive.

Marine environment – Whilst some impacts of climate change in the marine environment are well-documented, the complexity of marine and coastal ecosystems means that data gathering and implementing management measures can be particularly challenging.

Nature-based solutions – Many nature-based solutions to manage flood and coastal change risk in East Riding are not suitable, such as our coastline's geology and nature preventing nature solutions to coastal erosion.

Food price – Some of the sustainable and ethical food products can be more expensive, which can disproportionally affect those on low incomes.

Supply chains – Supporting the implementation of a sustainable and resilient food supply chain that extends across all aspects of the East Riding's food network is a huge challenge, requiring change from outside the region.

Opportunities

Regenerative agriculture – Technologies that regenerate and revitalise the soil and environment can help rebuild soil organic matter and restore degraded soil biodiversity, storing more atmospheric carbon and creating more resilient soils that can better withstand climate change impacts like flooding and drought.

The Agriculture Act –This includes the Environmental Land Management Scheme, rewarding farmers for public goods, such as improving soil health, measures to reduce flooding and storing carbon.

The Environment Act - In line with the requirements in the Environment Act, we will lead on the creation of a Local Nature Recovery Strategy that identifies opportunities for nature's recovery and deliver wider benefits, including climate change mitigation and adaptation. We will also implement into our planning system a way to deliver measurable net gain improvements for biodiversity by creating or enhancing habitats in association with development.

Government Food Strategy – The national food strategy, published in 2022, contains an objective to deliver a sustainable, nature positive and affordable food system setting out this will only be achieved through a reduction in greenhouse gas emissions in the food system.

Covid-19 – A survey undertaken by Natural England found that more than 40% of people noticed that nature, wildlife and visiting local green and natural spaces has been more important to their wellbeing since the start of the pandemic in 2020. There is an opportunity to capitalise on this newfound appreciation for the natural environment.

Natural Capital Approach – Working closely with partners in both the terrestrial and marine environments, the natural capital approach allows the value of our natural resources to be included in decision-making. This includes both monetised goods (such as food and fuel) and the non-monetised services we receive (such as health & wellbeing benefits of spending time in nature).

Areas of Action

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East Riding of Yorkshire Council can…

- Explore the value of declaring an ecological emergency, recognising the links between the nature and climate change.
- Ensure through the review of the Environmental Policy that the Council implements measures to enhance the natural environment and reduce food waste through its owns policies and procedures.
- Create habitats and plant trees on Council land, where appropriate, maximising opportunities for carbon sequestration
- Work with partners, such as the Humber Forest, to calculate carbon sequestration rates of tree planting and to explore the creation of a carbon-based tree planting Strategy for East Riding.
- Explore further opportunities for carbon sequestration in East Riding, including in marine and intertidal habitats.
- Lead on the development of a Local Nature Recovery Strategy.
- Integrate biodiversity net gain into our local planning policy.

- Promote nature-based solutions and development of blue-green infrastructure wherever possible.
- Work with Council farm tenants to encourage more climate and wildlife friendly practices.
- Engage with local farmers and national farming bodies promoting sustainable agriculture practices.
- Work with partners, such as the Yorkshire Marine Nature Partnership, to advocate for the marine and coastal environment and further explore opportunities for environmental progress.
- Help measure local natural capital with key partners to help inform climate decision-making.

How might you reduce your carbon footprint?

- If you are interested in planting trees on your land or volunteering to help plant trees, check out this link to get involved with the Humber Forest https://www.humberforest.org/get-involved/
- As weather patterns shift due to climate change, some insects that depend on particular flowers might suffer, so consider planting a diverse variety of pollinator friendly plants with ranging flowering times.
- Planting trees and plants can help tackle climate change by absorbing carbon dioxide and reduce risks of flooding by slowing rainwater runoff.
- Consider shopping locally for your food and drink.

Buildings

Introduction

Domestic properties in the East Riding account for approximately 20% of the county's carbon emissions. A priority for significantly reducing carbon emissions in East Riding is to retrofit the existing building stock with technology to produce low-carbon or renewable energy and ensure buildings can then retain this energy as efficiently as possible.

Typically, most of the energy used in homes is to heat space. Therefore, we will require a shift away from gas and oil central heating systems to heat pumps, biomass or hydrogen boilers (when commercially available) in our existing building stock. This will have to be coupled with measures to ensure buildings retain heat. Factors that determine whether a building retains heat include how it was built, how much insulation has been installed, the efficiency of the windows, how draughty it is and the behaviour of those who live there.

In the average UK home:

- 64% of energy is used for space heating.
- 17% for heating water
- 16% for lighting appliances and appliances
- 3% for cooking

BEIS (2021), Energy Facts from: Energy Consumption in the UK.

With provision to be made for 1,400 new houses each year, as set out in the East Riding Local Plan, we will have to transition towards these buildings being designed and built to zero carbon standards as soon as possible, if we are to not contribute further carbon emissions as an area.

What we have done

- Utilised funding opportunities to offer low-carbon and energy efficiency support in to homeowners, targeting those on lower incomes as a priority. These opportunities have included the schemes and grants below.

    - **Future Energy Scheme Grant**s – Funding to install energy efficiency measures and low-carbon heating (including air source heat pumps) in properties off the gas network, that have an EPC rating of E, F or G.
    - Grants for loft or cavity insulation.
    - **Green Homes Grant** – Received funding to install 60 air source heat pumps in separate dwellings that have no gas central heating systems.
    - The council is working with Communitas Energy CIC who, in partnership with Northern Gas Networks, manage an assisted connection voucher scheme, which will either partly or completely cover the cost of connecting a property to the Gas Network if eligible.

- Invested in energy improvements in the Council's own housing stock, as set out below.

    - Annual capital investment programme of circa £5m on more efficient heating systems, new roofs, windows, and doors helping to improve the energy efficiency rating of the properties
    - **Warm Homes Fund –** received funding to deliver the replacement of 115 more energy-efficient central heating systems in homes that are in the 25% most deprived areas or where the household meets the qualifying criteria.

- **Green Homes Grant** – received funding to install 30 air source heat pumps in properties that had the lowest energy performance rating (D or below) and where the tenant's household income fell below £30k per annum. These properties would have previously had inefficient electric storage heaters or solid fuel heating.
- **Future Homes Standard** – prepared to build new Council homes to this standard from 2022, ahead of the regulations being introduced in 2025.

- We have put policies in place within our East Riding Local Plan which support development proposals that contribute to a reduction in carbon emissions and incorporate climate change adaptation.

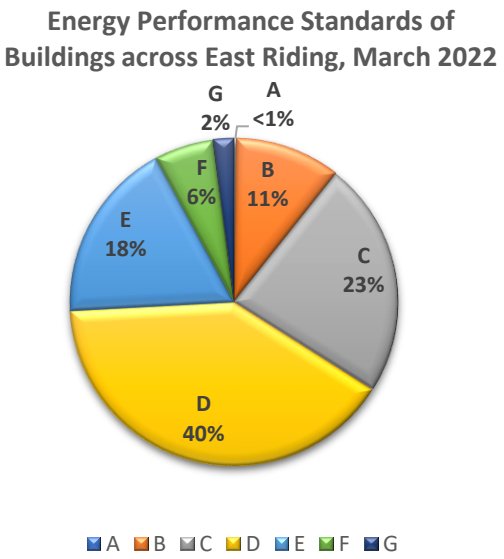
- Provided advice and support on energy efficiency measures to residents, including signposting to Government funding as available. *This includes the Governments recent Energy Company Obligation (ECO4) and Boiler Upgrade schemes.*

Key Challenges & Opportunities

Challenges to Delivery

Rurality – Approximately 32% of properties in the East Riding are not connected to the mains gas. This means they rely on different heating fuels like oil or liquefied petroleum gas (LPG) which are more carbon intensive and expensive compared to mains gas.

Energy Performance Ratings – Approximately 66% of the properties in East Riding have an energy performance rating of D or below. The Government's Heat and Buildings Strategy recognised that most homes below EPC band C will need to be upgraded between now and 2050.



Fuel Poverty – According to the most recent data, the percentage of households deemed fuel poor in East Riding was 14.7%, compared to an average in England of 13.2%. In response, we have been targeting those on lower incomes for energy efficiency improvements and low-carbon heating grants.

Costs – The costs of household energy efficiency and low carbon retrofits remains high. Whilst very limited grant funding is available, changes to the market and further Government support will be required to reach current targets.

Opportunities

Future Homes & Building Standard – The new standard, setting changes to Building Regulations, should ensure that all new homes built from 2025 will produce 75-80% less carbon emissions compared to current regulations, and produce 31% less from 2022.

Gas Boilers – The Government's Net Zero Strategy included the ambition for no new gas boilers to be sold by 2035. Although not yet set into law, there has also been indications by Government that as

part of changes to building regulations there may be a gas boiler ban for new homes as early as 2025. Furthermore, in Spring 2022, the Government's Boiler Upgrade Scheme has opened for applications. This provides upfront capital grants to support the installation of heat pumps (or biomass boilers in some circumstances) in domestic and non-domestic buildings

Health – Improving the quality of our indoor environment through deep energy retrofits, such as improved insulation, can provide benefits to physical health by creating healthy indoor living environments with healthy air temperatures, humidity levels, noise levels and improved air quality.

Social Housing Decarbonisation Fund – An application will be made in 2022 to the fund which is for social housing landlords to deliver improvements to the fabric of their properties (wall, loft, and other insulation measures) to achieve an energy efficiency rating of C or above. This will make the property ready for the transfer to low carbon heating such as air source heat pumps in the future.

Areas of Action

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East Riding of Yorkshire Council can…

- Deliver an ambitious programme of energy efficiency improvements to the East Riding of Yorkshire Council's housing stock.
- Capitalise on new funding opportunities to support the rollout of energy efficiency and low-carbon improvements across the East Riding, with targeted support for low-income households and those off the gas grid.
- Ensure that climate change is embedded throughout the East Riding Housing Strategy.
- Develop future Local Plan policies to ensure low-carbon opportunities and climate risks are identified in new developments, reviewing local energy efficiency standards following the release of the Future Homes and Building Standards.
- Work in partnership with local contractors, community interest groups, energy providers and local energy hubs to raise energy standards across the private and public sectors
- Provide advice to residential and non-residential sectors on low-carbon and energy efficiency opportunities, including the promotion of Government funding opportunities (e.g. the national Boiler Upgrade Scheme).

How might you reduce your carbon footprint?

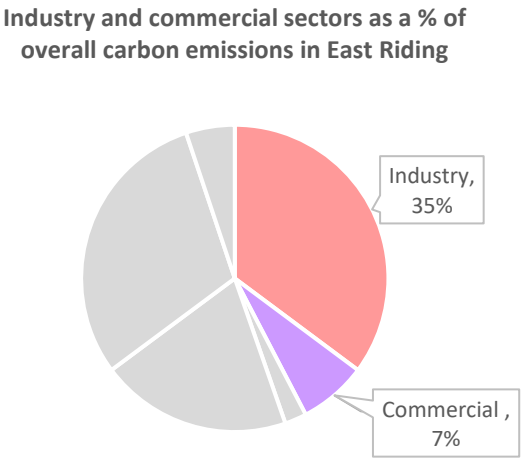
- Have you considered the energy performance of your home or business? You may be able to find the energy certificate for your property, along with tips for improving its efficiency, here https://www.gov.uk/find-energy-certificate.
- See the Council website for advice and support on improving energy efficiency at home. https://www.eastriding.gov.uk/housing/energy-efficiency/energy-efficiency-at-home/

Economy

Introduction

The commercial and industrial sectors are significant contributors to climate change in the East Riding of Yorkshire, accounting for over 40% of the County's carbon emissions.

Across these two sectors, industry makes up a large proportion of the emissions, reflecting the industrial base present in East Riding, particularly in the areas bordering the Humber Estuary.



It is important we work together to drastically reduce commercial and industrial emissions, whilst making sure our diverse economy thrives, building on our natural strengths in the food, manufacturing, tourism and renewable energy sectors.

Growing the green economy will also be vital for powering the transition to net zero, as we look to increase capacity and skills in key sectors such as sustainable farming, electric vehicles, domestic retrofit and renewable energy.

What we have done

- Provided support to maximise growth and opportunities in the green economy, delivering on the 'sustainable economy' priority of the East Riding Economic Strategy 2018-2022. Below are some examples of this support.

    - Led on the designation of key sites across the Humber to form the largest Enterprise Zone in England. The sites of Green Port Hull and Able Marine Energy Park offer an attractive space for the renewable energy sector with opportunities to co-locate with businesses in the supply-chain providing cost reductions.
    - Helped establish freeport status for the Humber aiming to expand and strengthen the clean growth and decarbonisation cluster of businesses across the region, including offshore wind manufacturing and processing facilities to create materials used in the production of electric vehicles.
    - Led on the Fusion Yorkshire bid to secure a new home for the UK Atomic Energy Authority's STEP Programme (Spherical Tokamak for Energy Production). Nuclear fusion is increasingly seen as one of the most promising options for generating cleaner energy.
    - Set up the ERGO centre, a hub for renewables and environmental technologies and innovation. The centre, located at the heart of the UK's Energy Estuary, provides a collaborative space where key players can come together to strengthen the renewables and low carbon agenda.
    - Our business investment and tourism services offer a comprehensive range of service for start-up and established businesses, as well as inward investors, with expertise on the growing low-carbon sectors.

- Stimulated the local green economy by delivering carbon reduction programmes in sectors such as housing retrofit, utilising local contractors and suppliers.

- Worked with partners to support businesses of all sizes helping them to reduce carbon emissions. Officers from across the authority are able to offer a range of advice and expertise to local businesses on climate change. We are also a lead partner of the Aura project, led by the University of Hull, providing advice and support for businesses to reduce carbon emissions, save on energy costs, increase efficiency and productivity or access to new markets.

- Promoted through our communications and social media platforms the climate change and wider environmental benefits of supporting the local economy and making environmentally informed purchases.

Key Challenges & Opportunities

Challenges to Delivery

Carbon intensive business – East Riding is home to many traditional heavy industries that are essential to our economy but remain carbon intensive. Working with these to decarbonise is a priority on our pathway to net zero.

Working population – Compared to the national average, a lower proportion of the population of East Riding of Yorkshire is of working age and there are less jobs available for this working age population. Whilst these pose different challenges for the local economy, green job creation and then attracting high skilled workers in the low-carbon and sustainability sector can help overcome these.

Skills deprivation – There are pockets of skills deprivation in some urban and coastal areas in East Riding. Alongside green job creation, working with schools, colleges and training providers in these areas to enhance career opportunities in the green sector will be necessary for creating a greener economy and ensuring we reduce rather than exacerbate existing inequalities through climate action.

Understanding climate change – A survey undertaken by the Carbon Trust in 2020 found many small and medium sized companies (SME) were yet to fully appreciate the importance of climate change for their business and most thought it would not impact their organisation. This suggested more work is needed to communicate the impact of the climate emergency sufficiently to all parts of the economy.

Opportunities

Natural environment – Our environment in East Riding underpins our local economy through agriculture, forestry, fishing, tourism and through an abundance of natural energy resources. This means to strengthen and grow our economy we must protect and invest in our natural environment which can also have wider health and wellbeing, climate mitigation and adaptation benefits, through carbon restoration or flood resilience, for example.

Green jobs – The share of jobs in the Yorkshire and Humber that are in the green economy is above the UK average, indicating a solid foundation for future growth as we look to focus on the production of higher-skilled, better paid and permanent jobs.

Renewable energy – The Humber has established a merited reputation as the UK's Energy Estuary, with a world-leading renewable energy sector and ambitious industrial decarbonisation targets, indicating further growth opportunities for the local energy economy.

Warmer climate – With East Riding set to experience warmer days we can expect there to be an increase in coastal tourism as a result. Maximising the local economic opportunities from the visitor economy can help facilitate economic growth, whilst presenting opportunities to enable and encourage sustainable and responsible tourism.

Areas of Action

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East Riding of Yorkshire Council can…

- Stimulate the local green economy by working with local contractors and suppliers to deliver carbon reduction programmes in sectors such renewable energy, district heating and housing retrofit.
- Develop an approach to mapping and valuing natural capital and ecosystem services across the sub-region, highlighting the importance of our natural environment to the local economy.
- Deliver education and training to ensure East Riding residents are better placed to take advantage of job opportunities in the green economy.
- Provide advice and support to local businesses to help them reduce their carbon emissions.
- Support innovation, commercialism and growth in the local green sector, through further investment in local economic growth and promoting the attractive opportunities for low-carbon and renewable enterprises in East Riding.
- Look to support businesses in the green sector, through financial incentives such as business grants or shared energy networks.
- Work with local partners at the Aura Innovation Centre to engage with SMEs, raising awareness of climate change and sharing opportunities for reducing carbon emissions.
- Maximise collaborative opportunities for renewable and environmental enterprises through our Ergo partnership.
- Work with local schools to engage staff and students on climate change and environmental issues, showcasing the opportunities for careers in the green sector.
- Promote the climate change and wider environmental benefits of supporting your local economy and making environmentally informed purchases.
- Showcase examples of how businesses are responding to climate change across East Riding.

What can you do?

- Consider shopping local. Locally owned businesses often make more local purchases requiring less transportation and cutting carbon emissions.
- If planning a holiday, have you considered local or domestic destinations? Staying local can reduce your carbon footprint.
  https://www.visithullandeastyorkshire.co.uk/
  https://www.visitbritain.com/gb/en
- When installing renewable energy or heat pumps, source a reputable local trader to help build local supply chains.
  https://mcscertified.com/find-an-installer/

Net Zero Council

In February 2021, East Riding of Yorkshire Council declared a climate emergency and confirmed our ambition to be net zero by 2050. This target relates to reducing the emissions that are produced from our services and operations. Whilst we have set this initial target, our intention is to continually review this to reflect our ambition and ability to meet an earlier deadline.

To achieve this will require significant investment in decarbonisation projects and embedding a strong culture of climate awareness across the organisation so our staff feel empowered to make change.

Our established Environmental Policy, Environmental Management System and Carbon and Energy Management Strategy will continue to drive forward positive action to reduce the Council's carbon footprint.

What we have done

Over the previous decade, we have undertaken an array of carbon reduction initiatives, significantly reducing the authority's carbon footprint. These initiatives have included:

- through the award of Public Sector Decarbonisation Scheme funding we have been able to undertake a range of decarbonisation solutions on Council buildings such as Bridlington Spa and County Hall, including energy efficient lighting and windows, insulation, air source heat pumps and new air conditioning.
- the installation of photovoltaic panels (PVs) on buildings, leisure centres, offices, and social housing across the East Riding.
- lighting improvement schemes, including the replacement of inefficient lighting with LED lights across council sites.
- the installation of electric vehicle (EV) infrastructure across Council sites, including leisure centres and at over 15 Council owned car parks.
- the rollout of seven new zero-emission electric vans, three electric cars and one electric minibus for the council to use in delivering services, with charging points installed at three of our depots.
- the installation of a solar farm at the Council's South Cliff Holiday Park, in Bridlington.
- securing funding towards installing low carbon heating and making improvements to energy efficiency for a limited number of housing – so far the council has helped install over 650 air source heat pumps in Council owned homes.
- the installation of high-energy efficient boilers and ground source heat pumps at a limited number of Council maintained schools.
- the development of an environmental management e-learning package to give staff an awareness of the environmental impacts of the Council.

Key Challenges & Opportunities

Challenges to Delivery

Old building stock – We own and manage a number of old or even historical listed buildings, which tend to have a lower energy performance than modern buildings, and for the latter, it limits options for energy efficiency improvements.

Energy costs – Despite reducing our overall energy consumption overtime, the total energy costs for the Council have actually risen, largely due to the increase in price of grid supplied electricity.

Scale of council operations – With an estimated 6,209 corporate employees, 4,955 school-based employees, services ranging from libraries to highways maintenance to social care, the scale and complexity for reaching net zero as a large unitary authority should not be underestimated.

Homeworking – The increase in homeworking since the Covid-19 pandemic has reduced emissions from staff commuting, but the increase in domestic energy and heating use at our staff homes will have to be factored into the Council's carbon footprint. Calculating and reducing these emissions poses a challenge.

Opportunities

Business travel – There are many potential ways to reduce emissions associated with business travel at the authority, through the use of lower emission vehicles, pool car schemes, car sharing and the transition to online events.

Schools – Many schools managed by the authority have an energy performance that is below the national average suggesting there are many opportunities for dedicated energy project work with our schools.

Scope 3 emissions – The indirect emissions that occur from our activities are estimated to make up 70-80% of our overall carbon footprint, yet we are only at the starting point for understanding and tacking action to reduce these.

Behaviour change - Changing how we work and live on a daily basis has an important role in reducing the further onset of climate change. Moving forward we will explore different interventions to change behaviour potentially including climate literacy training for staff, campaigns on environmentally conscious behaviour and providing supporting mechanism to encourage change.

Agile transformation – The Councils agile project, leading on the transition to becoming a more modern, flexible and responsive workforce brings more opportunities for staff to work digitally or from work hubs, potentially closer to their residence. This brings opportunities for reducing unnecessary travel.

Areas of Action

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East Riding of Yorkshire Council can…

- Explore how to integrate climate change further into decision-making processes within the Council.
- Through our Carbon and Energy Management Strategy process, maximise opportunities to reduce carbon emissions across our range of assets, including:
  - Council owned buildings (e.g. offices, leisure centres, libraries)
  - Council maintained schools
  - Street lighting

  - Council fleets vehicles.
- Look to reduce scope 3 emissions by better understanding emissions that occur indirectly as a result of the Council's activity, including from procured goods and services, outsourced contracts, staff commuting and homeworking.
- Include climate change as a cross-cutting theme within the update of the Council's Environmental Policy, illustrating its linkages with the wider sustainability themes of the Policy and to raise opportunities for joint-action.
- Explore the rollout of a carbon literacy programme.
- Explore further the financial implications of meeting a target of net zero by 2050 (or sooner) to support financial planning and budgeting within the authority.
- Look to expand our sustainability and climate change section of the Council's website, providing information updates on climate action in East Riding and tips for us all to reduce our personal carbon footprint
- Continue to provide updates on our response to climate change through *Your East Riding* and on social media platforms.
- Explore options to bring people together across East Riding to discuss recommendations for climate action and partnership working, for instance, through a climate assembly, digital forum or through community groups.
- Share our experience and best practice of carbon reduction with parish councils, businesses and communities.
- Work with public sector partners (such as the Association for Public Service Excellence and the Local Government Association) to share knowledge and delivery of carbon reduction in local government.
- Collaborate with young people in East Riding to ensure they have a fundamental role in how we can respond to climate change moving forward.

Climate Resilience

Flooding, coastal erosion and heatwaves can have significant impacts on society, the economy and the natural environment. In the East Riding, this has been demonstrated by the devastating economic and human impacts of the June 2007 and December 2013 floods, the complete loss of homes and businesses due to ongoing coastal erosion and the public health impacts of heatwaves in 2018 and 2019.

Climate change is likely to result in an increase in the frequency and intensity of these weather events, therefore their impact is likely to also increase significantly. To limit these impacts we must ensure that the East Riding is resilient to climate change. While in some cases this may mean negating the impacts of climate change (for example through flood and coastal defence schemes), in most cases it will involve adapting our buildings, infrastructure and behaviour to reduce the inevitable impacts of future extreme weather events.

The scale of adaptation required will be dependent on the level of future greenhouse gas emissions, however the 'baked in' impacts of past emissions will require significant action to take place to make the East Riding a climate resilient county.

What we have done

- Delivered major flood alleviation schemes in the region. Since 2014/15, the Council has delivered more than £100m of flood and coastal risk management capital investment, reducing the risk of flooding and coastal erosion to approximately 24,000 residential and more than 1000 commercial properties. Notable projects include:

    - Anlaby and East Ella Alleviation Scheme
    - Cottingham and Orchard Park Flood Alleviation Scheme
    - Paull Wall
    - Hessle Foreshore Tidal Defence Scheme
    - Pocklington Flood Alleviation Scheme.

    The Council has recently been successful in funding bids for a further 4 flood alleviation schemes in Thorngumbald, Hedon, Preston and Burton Pidsea, totalling £11m. A further project that reduces flood risk to homes and businesses, and improves water quality on the Hornsea Mere has been approved for £2.7m of funding. The five projects will be constructed over the next 4 years, subject to further detail design and planning approval.

- Managed and promoted a natural and adaptive approach to coastal change management through the development and delivery of local policies, strategies and plans, including the Flamborough Head to Gilbraltar Point Shoreline Management Plan (SMP) and the East Riding Local Plan. Our approach has been recognised as an example of best practice nationally. A key part of delivery has been working with communities and businesses to support them to adapt to, or relocate away from, coastal erosion risk. We have been able to do this through:

    - delivering a comprehensive coastal erosion monitoring programme, including aerial surveys of the coastline.
    - informing residents and stakeholders of the risk to their assets from coastal erosion.

- providing advice and support to residents to help them proactively plan for their relocation away from risk, including into Council accommodation.
- offering limited financial assistance to residents affected by coastal erosion to support them to adapt to, or relocate away from, risk.

- Delivered coastal defence projects, such as the South Withernsea Coastal Defence Scheme, completed in 2020, reducing the risk of coastal erosion to approximately 70 residential properties, 250 chalets and caravans, utilities infrastructure and locally important transport links.

- Lead on the Humber Emergency Planning Service to minimise the impact of extreme weather events across the region. Climate and weather-related risks are measured in the two-year forward-looking risk assessment undertaken by the service. Examples of what the service leads on are:

    - the development of emergency plans for responding to flooding.
    - to encourage and provide advice for communities to prepare contingency plans for emergencies.
    - to promote business continuity to small businesses and the voluntary sector.
    - to work with partners to promote heatwave readiness.

- Worked in partnership across the region to manage climate risks. Some of the key partnerships we have been involved in or have actively supported are:

    Hull and East Riding Living with Water – aims to build understanding across Hull and East Riding about the threats and opportunities water brings.
    - **Humber 2100+** - a partnership between the Environment Agency and 12 local authorities which looks to build on the existing Humber Flood Risk Management Strategy to redefine the strategic approach to managing tidal risk from the Humber.
    - **Yorkshire Regional Flood and Coastal Committee (RFCC***)* – builds understanding, sets coherent plans and encourages targeted investment in flood and coastal erosion risk management.
    - **Flood Innovation Centre, University of Hull** – the centre provides support to small and medium-sized businesses to develop new products and services to help with flood resilience.
    - **Humber Local Resilience Forum** – leads on multi-agency emergency planning in the Humber with representatives including the emergency services, local authorities and the NHS.
    - **North-East Coastal Group** – a forum for coastal practitioners to discuss issues, problems, solutions and to share best practice on coastal management in the North-East of England.
    - **Local Government Association Coastal Special Interest Group** – aims to share good practice on coastal change management and represent the issues and ideas of local authorities to national Government.

Key Challenges & Opportunities

Challenges to Delivery

- **Knowledge –** There is often a lack of understanding and recognition of the impacts of climate change beyond flood risk**.** We need to better understand the wider impacts of climate change in the East Riding and the range of potential solutions required and available.
- **Engagement -** One of the biggest challenges to becoming a more resilient region is engaging with as many communities, businesses and stakeholders as possible to promote cultural and behavioural change. This will require large scale and prolonged participation across the region, targeting multiple sectors including residents, businesses and educational institutions.
- **'Defend-first' approach** - Much of the national budget for flood and coastal erosion risk management continues to be used on defences meaning there is less financial support for adaptation and transition. It has been proved in this area that this can be successful and cost effective, particularly in areas where it is not sustainable to install or maintain hard defences.
- **Risks to transport assets -** The flat topography to the south of East Riding increases the risk of flooding to key rail and road transport networks, the rapidly eroding Holderness coastline poses unique challenges for transport systems towards the east of the region and the chalk Wolds to the north presents risks of groundwater flooding.
- **No one-size-fits-all solution –** As climate change brings different pressures across areas of the East Riding we recognise that an area-wide single adaptation plan will not be effective.
- **Older population –** East Riding has a higher proportion of older adults (65+) compared to the England average. Older populations are more likely to be vulnerable to extreme heat, poor air quality and extreme events. As an authority we aim to ensure homes are suitable for this population across the East Riding, taking into account future climatic change.
- **Resilience of energy infrastructure -** Flood events, high-winds and lightning are all examples of weather events that have the potential to disrupt energy generation, transmission and distribution. Planning for and monitoring these risks is essential to ensure our energy infrastructure can be climate resilient, so we can avoid future losses of power.

Opportunities

- **Coastal Adaptation and Transition** – The Council has recently secured funding to deliver an East Riding Coastal Transition Accelerator Programme, in partnership with the Environment Agency. The programme aims to deliver effective coastal change management, transitioning away from a reactive approach (prioritising those at imminent risk) to a planned long-term transition based on the projected impacts of climate driven coastal change.
- **Co-benefits –** The designing of areas to be more resilient to flooding and heatwaves often results in multiple benefits such as better access to green space, improved air quality and health benefits. This is especially the case where multiple uses of space is factored into the design of open spaces. For instance, a flood storage area which acts as sports pitches in the summer.
- **Education** –Working with the Hull and East Riding Living with Water partnership, our flood risk strategy team have visited schools to engage with young people on the water cycle, flood risk and water management, increasing awareness of the impacts of climate change and to learn more about their role in reducing flood risk.
- **Local Resilience Forums** – The Government has committed to strengthening the role of Local Resilience Forums so they are able to support delivery of more climate resilience initiatives and further minimise the impacts of potential emergency events.
- **Mental Health** – The threat from flooding and coastal change have been shown to cause significant physical and mental health issues. Any actions which can be taken to make communities more resilient to flooding and coastal change will have benefits for health and wellbeing.

Areas of Action

Please note that until the final Climate Change Strategy has been approved, we have chosen to use the wording 'East Riding of Yorkshire Council can.' Once the Strategy has been fully consulted on internally and with the public we will commit to 'East Riding of Yorkshire Council will.'

East Riding of Yorkshire Council can…

- Explore sustainable funding mechanisms and new funding opportunities to develop and deliver local schemes to limit the impacts of flooding, coastal erosion and heatwaves.
- Continue to work with communities, businesses and partners to enable them to proactively plan their transition away from coastal change risk.
- Work with partners and utilise scientific models and the latest technology (such as aerial surveys, water level sensors and cameras) to effectively monitor and manage the risk of flooding and coastal change within East Riding.
- Ensure that the East Riding Local Plan continues to consider the impacts of climate change in future design and developments, including limiting inappropriate development in certain areas at risk from flooding and coastal erosion.
- Through the Council's updated Environmental Policy, look to improve the resilience of Council assets and ensure climate change remains a key consideration for the design and delivery of infrastructure projects.
- Provide advice to communities and businesses on building resilience to climate change through East Riding of Yorkshire Council communications and social media.
- Work with residents and partners to find the best solutions for changing behaviours to become a more resilient East Riding.
- Work with schools and colleges to share knowledge on the solutions for reducing the risks of climate change, linking this to their curriculum learning.
- Work closely with partners, such as the Environment Agency and DEFRA, to deliver flooding and coastal erosion risk management schemes.
- Design developments to maximise the wider sustainable benefits of climate risk management, prioritising nature-based solutions and those that provide more socio-economic benefits.
- Explore with partners, such as the University of Hull, the impacts of climate change on health to influence future decision making.
- Provide advice and information on flood insurance, directing residents to information on Flood RE.
- Feed into national guidance and policy on flood and coastal erosion risk management, making sure it remains appropriate for local resilience action in East Riding.
- Work with partners to increase climate change resilience across the region's built assets, including our transport network and energy infrastructure, to protect communities and businesses.

Working with partners, we want to build on the following actions set by the Yorkshire and Humber Climate Commission Action Plan in relation to emergency preparedness and response. These are:

- Build climate readiness through improved emergency and recovery planning by promoting regional climate risk assessment, multi-agency collaborations, provision of climate response training for emergency responders and support for local resilience forums.

- Develop a whole of society approach to emergency response raising awareness of new risks to the region and the available hazard warning systems, followed by clear communications and training as to what individuals, communities and businesses should do during differing emergency scenarios.

How might you build climate resilience?

- You can sign up to receive personal flood alerts or warnings by phone, text or email here: https://www.gov.uk/sign-up-for-flood-warnings
- In hot temperatures, trees can offer effective ways of keeping cool. If possible, consider planting trees in your garden as they can provide shade for you and your home.
- Exterior shutters or blinds can reduce overheat exposure in homes.
- Refrain from opening windows when the outside temperature is higher than indoors.
- Check out the Met Office's guidance for protecting your property from flooding: https://www.metoffice.gov.uk/weather/warnings-and-advice/seasonal-advice/your-home/protecting-your-property-from-flooding