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York Climate Change Strategy: A City Fit for the Future

Foreword

The York Climate Change Strategy, "A City Fit for the Future" was developed by the city for the city. It sets out our vision to be net zero and provides a framework to both reduce carbon and be more climate resilient by 2030. This strategy is your strategy to help guide everyone's actions and decisions over the decade ahead.

Across the city, our beautiful built heritage is energy intensive, and our Roman and Viking roads were not built for modern traffic. Today's ways of living and working further add to the challenges of reducing our dependence on fossil fuels, cutting carbon emissions, and making us more resilient in the presence of increasingly frequent and severe weather events. Taking action to reach net zero will require a concerted effort across all sectors of our society and economy; yet, we've already shown what's possible. Not taking action will entail large and growing costs to be shouldered by us and future generations.

The pandemic forced us to rethink how to live healthier, happier lives, what it means to be economically viable, and the importance of the natural environment. We have seen our place in history is not defined by how we travel, the holidays we take, or the goods we buy, but instead by our health, the strength of the relationships around us, and how we position our economies and communities to adapt to unprecedented ever-changing circumstances.

We owe it to our city – its heritage, the people living and working in it today and tomorrow, and all those visiting it – to make sure it is fit for the future. We can do that in ways that improve the economy by being a leader on climate action, and create wealth and wellbeing, rather than putting them further at risk.

Leader of the Council

Executive Member for Environment and Climate Change

Chair of York Climate Commission

Partner Signatories

Executive Summary

"A *prosperous, progressive, and sustainable city, giving the highest priority to the wellbeing of its residents, whilst protecting the fabric and culture of this world-famous historic city.*"

Climate change is the greatest threat facing our planet[1]. In York, we lead the way; in 2019, The City of York Council declared a climate emergency, set an ambition for York to be net zero carbon and established an independent Climate Commission for the city. Reducing our carbon emissions and adapting to a changing climate are crucial to ensure that York is a city fit for the future.

Since 2005, emissions across York have reduced by 39%, but there is still more that we can do. The council is taking a leading role in tackling climate change but accounts for less than 4% of total emissions in York. We will need to work together and mobilise the city's public, private, community, faith, education and academic sectors to successfully deliver our objectives.

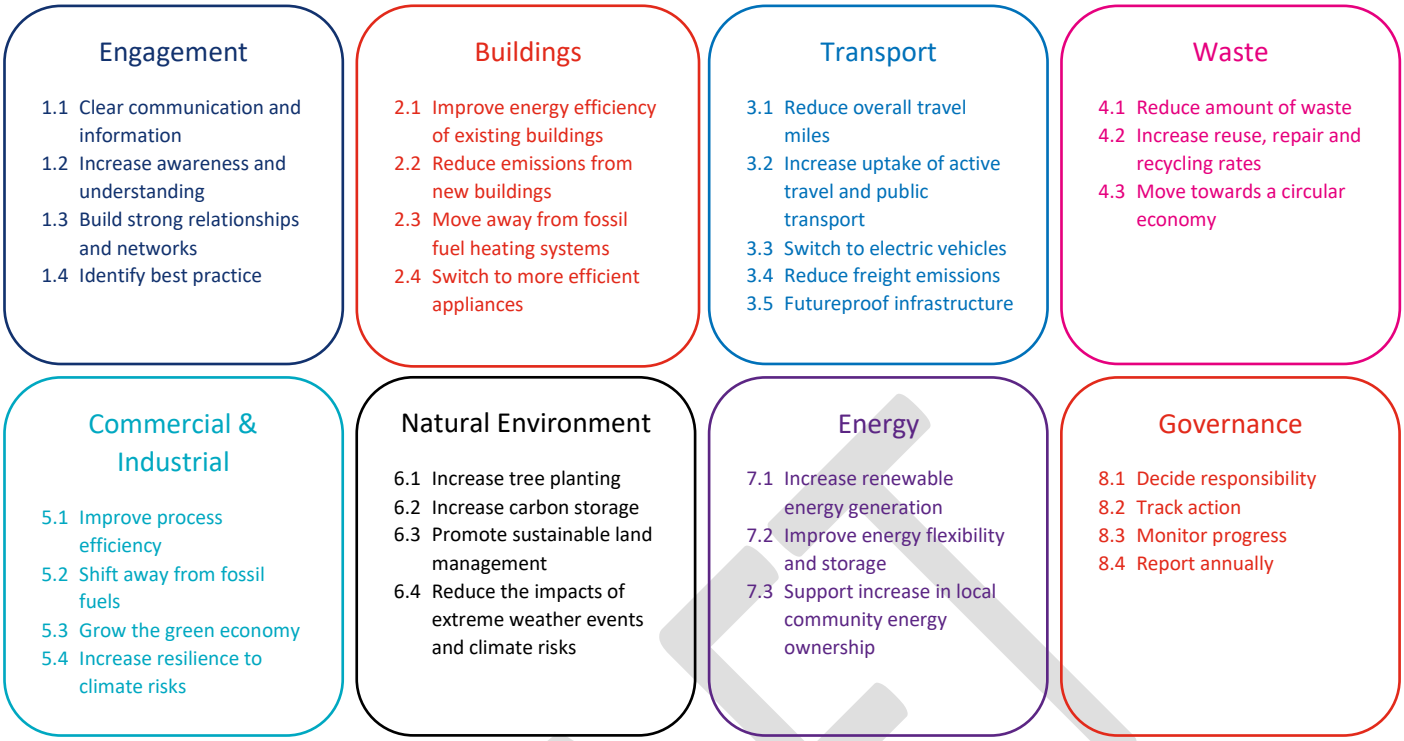
As part of this Strategy, we have produced a Net Zero Carbon Pathway for York to 2030 that is consistent with our fair contribution to the Paris Agreement. We know that York's' greenhouse gas emissions are mostly from buildings (32% residential and 30% commercial) and from transport (28%) and that significant emissions reductions are required to achieve our net zero ambition.

If we do all we can with the currently available options, we will reduce emissions by 77% by 2030[2]; but we will need to go further. We will need to go further through new scientific endeavour, making the most of emerging technology, lobbying for and embracing policy change, attracting external investment, and working together across the city to take every advantage we can.

There are challenges in getting to where we need to be by 2030; but they are achievable, and have the potential to deliver significant economic, social and environmental benefits beyond our climate change ambition.

This Strategy identifies 32 objectives to help meet our carbon reduction and climate resilience ambition. The objectives cover 8 key themes that have been identified through analysis and consultation.

[1] https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/
[2] On 2005 levels



To deliver our ambition, we will be guided by five principles. You will see these applied throughout the delivery of this Strategy, in the actions we take, the relationships we build and in how we openly share plans and data to help others:

1. We will **increase collaboration and cooperation** by working with partners to encourage changes in the way we live and behave. We will create partnerships among businesses, the public sector, civic organisations and our institutions in higher and further education to ensure that new, action-oriented knowledge is generated and effectively shared to the benefit of all.

2. We will continuously **adapt to change**, taking bold action by trialling new and emerging technologies. We will be pragmatic, focusing on reducing emissions within our immediate control and prioritising actions that deliver best value. We will publish an annual Climate Change action plan.

3. We will **build inclusive, healthy and sustainable communities** by promoting the positive social and economic benefits of climate action and by supporting individuals who need it the most. With more protected green spaces, less air pollution and greater tree canopy cover we will support the wellbeing of our residents and increase biodiversity.

4. We will **create new employment and investment opportunities**, strengthening the economy through our work with local suppliers to build local "green" skills in sectors such as retrofitting and the bio-economy. We will proactively seek alternative funding streams and attract additional investment, whilst being mindful of reduced budgets.

5. **Good governance** and evidence based planning will guide our actions ahead. Named individuals and organisations will take accountability for delivering actions. We will provide

accurate information that allows us to review progress and adapt actions if required. We will regularly review and publish emissions data to track progress against our ambition, updating our action plan in response

Throughout the decade ahead, we will review this Strategy to understand the difference it has made, how it has contributed to our climate change ambition and whether we need to adapt or strengthen any areas to keep us on track to becoming a net zero and climate resilient city; a city fit for the future.

Section 1: Background

The Need for Action

A Climate Emergency

In 2018, the Intergovernmental Panel on Climate Change (IPCC) published a special report on Global Warming[3], describing the devastating impact a global temperature rise of 2°C would have on our planet and the importance of limiting warming to 1.5°C. In response, the UK has committed to bring all greenhouse gas emissions to net zero by 2050.

In 2019, the council declared a Climate Emergency and set an ambition for **York to be net zero carbon by 2030**. York recognises its place as a leader on climate action. Since 2005, emissions across York have reduced by 39%[4], but there is still more that we can do.

This Strategy is the next stage in our journey to tackling climate change. It sets out our approach to reducing the emissions that are under our direct influence to net zero, and creating a city that is resilient to the impacts of climate change.

While this strategy does not currently include our indirect emissions, they are important to consider. We commit to better understanding the emissions associated with our consumer choices and business supply chains and how we can reduce these in the future.

Adapting to Change

Cutting our carbon emissions to reduce the impact of climate change is critical for people and the planet, but we must also prepare our city for the changes that we are already experiencing.

Globally, the past five years have been the hottest on record since 1850. In the UK, we will experience warmer, wetter winters and hotter, drier summers[5]. Extreme weather events are also predicted to increase.

In our recent history, York has experience of extreme weather events, with flooding being a particular issue. That is why the city's Local Flood Risk Management Strategy[6] sets out plans for flood protection up to 2039.

We are committed to better understanding the local risks posed by a changing climate and making sure that we are prepared to deal with the anticipated changes.

Working Together

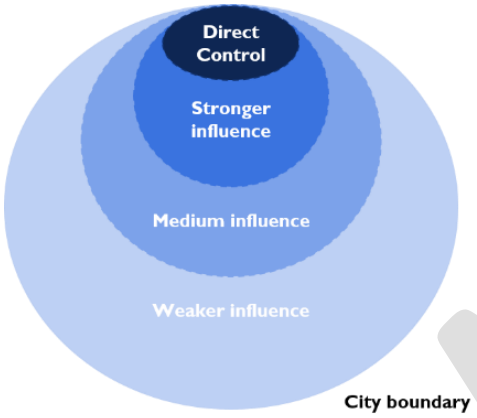
This Climate Change Strategy is for the whole of York. Tackling climate change and achieving the net zero ambition will be the responsibility of everyone; whether you live, work or visit our city. We will need to work with existing partners and develop new networks that can bring together organisations

[3] https://www.ipcc.ch/sr15/
[4] https://www.york.gov.uk/downloads/file/699/climate-change-framework#:~:text=The%20Climate%20Change%20Framework%20for,part%20in%20tackling%20climate%20change.
[5] https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp-headline-findings-v2.pdf
[6] https://www.york.gov.uk/downloads/file/281/local-flood-risk-management-strategy

from the city's public, private, community, faith, education and academic sectors to deliver our objectives.

City of York Council

The council is taking a leading role in tackling climate change and will reduce corporate emissions to net zero by 2030; however, the council is directly responsible for less than 4% of the total emissions in York. The council's wider influence can extend far beyond this, through purchasing decisions and local policy, but every aspect of our society will need to contribute towards achieving our city-wide ambition.



Influence	Description
Direct Control	Emissions sources directly owned or operationally controlled by the council.
Stronger	Operators of emissions sources are clearly defined but not directly operated by the council; the council has the potential to influence (e.g. procurement and planning).
Medium	Emissions sources do not relate to council owned assets, procurement or council led activities, however some convening power may exist.
Weaker	Operators of emissions sources are not clearly defined, influence limited to lobbying central government.

Figure 1: Level of control and influence of City of York Council over carbon emissions

Businesses

With over 7,000 businesses and a Gross Value Added (GVA) of £6.5bn, York is a major driver of growth across the region and beyond. The city is home to a diverse range of enterprising and innovative businesses, many of which are already taking proactive steps to reduce their carbon emissions.

Almost 80% of businesses who responded to the council's Our Big Conversation agree with the ambition for York to be net zero by 2030, and 20% of firms have considered diversifying into goods and services that are part of the green economy over the next year.

Businesses can take actions that not only reduce carbon emissions but also reduce costs and have a positive impact on society. Steps to reduce energy consumption, influence behaviour change (among employees, customers and networks) and engage local supply chains, supports our net zero ambition, ensures businesses are resilient to climate change and provides opportunities for new local jobs.

The Local Government Association estimates that 3,090 green jobs[7] will be required in York by 2030 in the low-carbon and renewable energy sector, with the majority of these in bioenergy, low-carbon heat pumps and building insulation. By 2050, this number is expected to be at least 4,902.

[7] https://lginform.local.gov.uk/reports/view/lga-research/estimated-total-number-of-direct-jobs-in-low-carbon-and-renewable-energy-sector?mod-area=E06000014&mod-group=AllUnitaryLaInCountry_England&mod-type=namedComparisonGroup

Residents

York is home to roughly 210,000 people. We can all make positive changes to how we live and travel around the city, which can help reduce emissions. Making improvements to our homes reduces emissions but also lowers energy bills; residents can shape and create neighbourhoods that meet our daily needs close to home; and make consumer choices that demonstrates demand for more sustainable products. Encouragingly, 69% of respondents to Our Big Conversation[8] have made changes to their purchasing habits and a similar proportion (65%) have already made changes to their personal travel

80% of respondents to Our Big Conversation agree with the ambition for York to be net zero carbon by 2030. Residents have a powerful voice to call for change from their employers, local businesses and local/national governments. By talking about climate change, residents in York can help encourage others to act.

York residents equipped with the right skillset have the potential to benefit from new green jobs. In 2021, 14% of residents[9] believed they would have to retrain to continue working in York. Helping residents to develop the knowledge and skills suitable for green jobs can reduce the city's carbon emissions alongside helping residents to recover from the COVID-19 pandemic and support our inclusive growth ambitions.

Visitors

York has been a tourist destination for almost 2,000 years, since being founded by the Romans in 71 AD. These days, York welcomes 8.4 million visitors every year, with the sector contributing £909 million to York's economy. One in five of York's visitors stay overnight in one of over 20,000 bed-spaces and the visitor economy supports 25,000 jobs in the city. We also welcome close to 900,000 conference and event delegates every year.

Despite reduced visitor numbers through the pandemic, York remains an attractive visitor destination with a strong regional market. The city's new tourism strategy will take a leap into the future with a bold new plan to rebuild the visitor economy in a more sustainable and integrated way. We want to see York develop as a liveable city, as well as a thriving visitor destination.

Investors

Delivering net zero and adapting to climate change will require significant investment. The city will need to work with the financial sector and attract external investment to help deliver new infrastructure, financial mechanisms and funding for climate projects. Emissions from buildings account for over 60% of our emissions, investing in retrofit and renewable energy will strengthen the local economy, create new employment opportunities and help meet our climate ambitions.

Our commitment to net zero and climate resilience will make York a more attractive prospect for external investment. Organisations are increasingly incorporating environmental and sustainability considerations into their decision making process.

[9] https://data.yorkopendata.org/dataset/kpi-tap17a/resource/3098cc94-e106-433b-96b0-1dc0a6da6849

Academic institutions

York has 63 schools, 2 further education colleges and 2 internationally renowned universities. Around 25,000 school-aged children live in York and a sixth of our population are under 18 years of age.

Our academic institutions are crucial for providing new ways of thinking, innovative solutions, research, funding and talent to help develop new ideas and create a more sustainable York. By educating students on the importance of climate change, we can ensure the next generation lead the way in climate action.

York Climate Commission

York Climate Commission is a body representing and reflecting public and private sector representatives from across the City of York to deliver action, strategic oversight and accountability for the progression of the city's climate change agenda.

Regional ambition and working outside of York

The Yorkshire & Humber Climate Commission represents members of local councils, businesses and third sectors. The Commission aims to reduce the carbon emissions of the region as quickly as possible by enabling engagement, providing evidence and promoting best practice.

The York and North Yorkshire Local Enterprise Partnership aims for the region to be carbon neutral by 2034 and carbon negative by 2040. The Partnership provides support for businesses, assessments of local skillsets and a routemap for York and North Yorkshire becoming England's first carbon negative region.

The UK Government is legally bound to achieving net zero by 2050. The 2021 Net Zero Strategy sets an interim target to reduce emissions by 78% by 2035 and sets the trajectory for phasing out the sale of gas boilers fully decarbonising the power system.

Our Strategy

The council has led on development of this document, but the York Climate Change Strategy is for the city and represents all of us. When developing this Strategy, a wide range of views and perspectives were considered to ensure that all residents of York were represented in its vision.

Our Big Conversation

Our Big Conversation is a city-wide discussion to help the city tackle challenges around carbon reduction, future transport priorities, and York's economy. Almost 2,000 responses were received, with some of the main themes including:

- 80% agreed with York's ambition to become a net zero carbon city by 2030
- 70% of residents have already taken action to reduce their carbon footprint
- Cost is seen as a major barrier for doing more to reduce carbon emissions

Timeline of activity since 2019 Climate Emergency Declaration.

March 2019 – York Declared Climate Emergency

Sept 2019 – Creation of Climate Change Policy Scrutiny Committee

Sept 2020 – Net Zero Roadmap produced

Dec 2020 – Launch of York Climate Commission

May 2021 – Development of York Climate Change Strategy

June 2021 – Our Big Conversation Phase 1

July 2021 – Stakeholder roundtables

Oct 2021 – First corporate emissions report

May 2022 – Climate Change Action Update

July 2022 – Draft Climate Change Strategy Consultation

Engagement workshops

The council hosted three roundtable sessions covering buildings, transport, energy, waste and the natural environment. These sessions gathered the views, experiences and knowledge of key organisations in York to ensure the objectives presented in this strategy are aligned with their perspectives.

Over 35 organisations from across the city were involved, discussing the barriers and opportunities associated with technology, policy, finance, community and delivery for the city in implementing carbon reduction actions. Details of the stakeholder perspectives are provided in the Technical Annex.

Focus Groups

A further round of engagement included focus groups that targeted underrepresented voices from the first Our Big Conversation discussion. These structured discussions have contributed to our understanding and the content of this Strategy.

Key definitions[10]

- **Direct emissions** are those that we are directly responsible for within York and include emissions from consumption of fossil fuels within our boundary (**Scope 1)** and emissions from grid-supplied electricity consumed within our boundary (**Scope 2).**
- **Indirect emissions (or Scope 3 emissions**) relate to our activity, but occur outside of our boundary, such as transport of goods into York and goods produced outside of York that we use locally.
- **Greenhouse gases** are gases released into the atmosphere that contribute to global warming by absorbing and re-emitting heat. These include carbon dioxide, methane, nitrous oxide and F-gases.
- **Carbon emissions** refer to the amount of carbon released into the atmosphere. The burning of fossil fuels and the release of greenhouse gases are contributing actions. Carbon dioxide equivalent (CO_2e) is often used to quantify the amount of different greenhouse gases released.

[10] A full Glossary of Terms is provided at the end of this Strategy

- **Net zero carbon** refers to a balance of the amount of carbon released into the atmosphere and the amount removed to equal zero overall.

Section 2: The Ambition

Current Situation

In 2018, York's greenhouse gas emissions totalled 936 $ktCO_2e$. The majority come from our buildings (61.9%) and transport (27.9%).

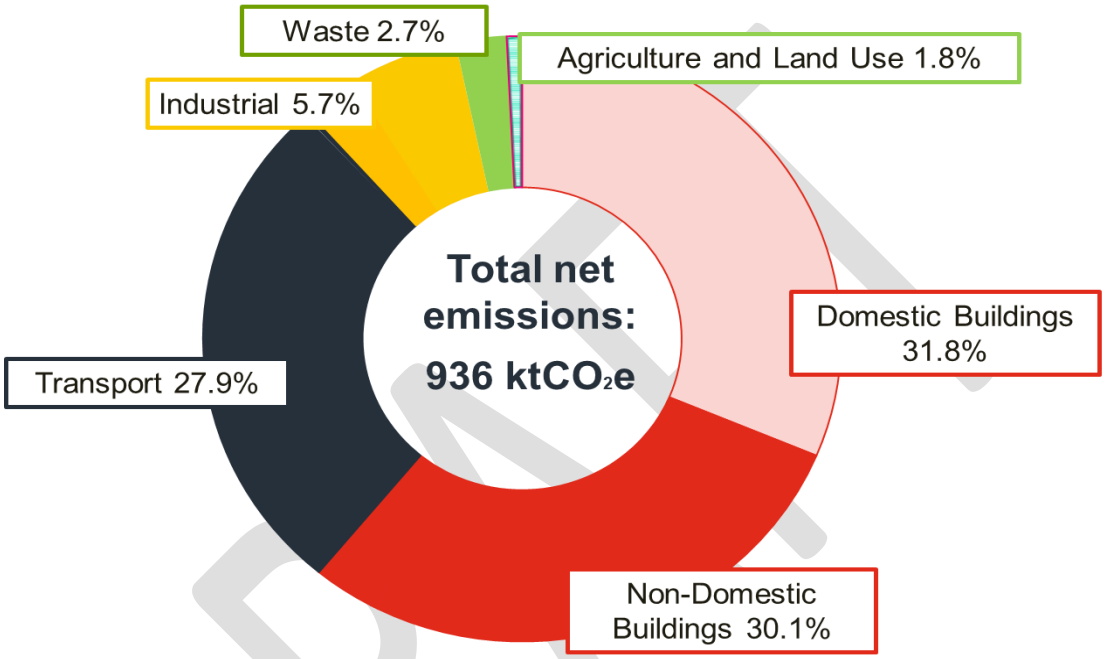


Figure 2: York's emissions inventory (2018)[11]

We have already made significant progress in reducing emissions in York. Since 2005, city-wide emissions have fallen by 39% due to a combination of increasingly decarbonised electricity supply, structural change in the economy, and the gradual adoption of more efficient buildings, vehicles and businesses.

A Net Zero Carbon Pathway for York

The latest IPCC Report[12] indicates that the remaining global carbon budget to remain within 1.5°C of global warming is 400 billion tonnes CO_2. We have worked with Leeds University, The Tyndall Institute and the Setting City Area Targets and Trajectories for Emissions Reduction (SCATTER) project to convert this global carbon budget into a Net Zero Carbon Pathway for York, which is consistent with our fair contribution to the Paris Agreement[13] (figure 3).

[11] Source: Setting City Area Targets and Trajectories for Emissions Reduction (SCATTER)
[12] IPCC Sixth Assessment Report https://www.ipcc.ch/assessment-report/ar6/
[13] The Paris Agreement sets out a requirement to limit global temperature rise to well below 2°C and aim for 1.5°C

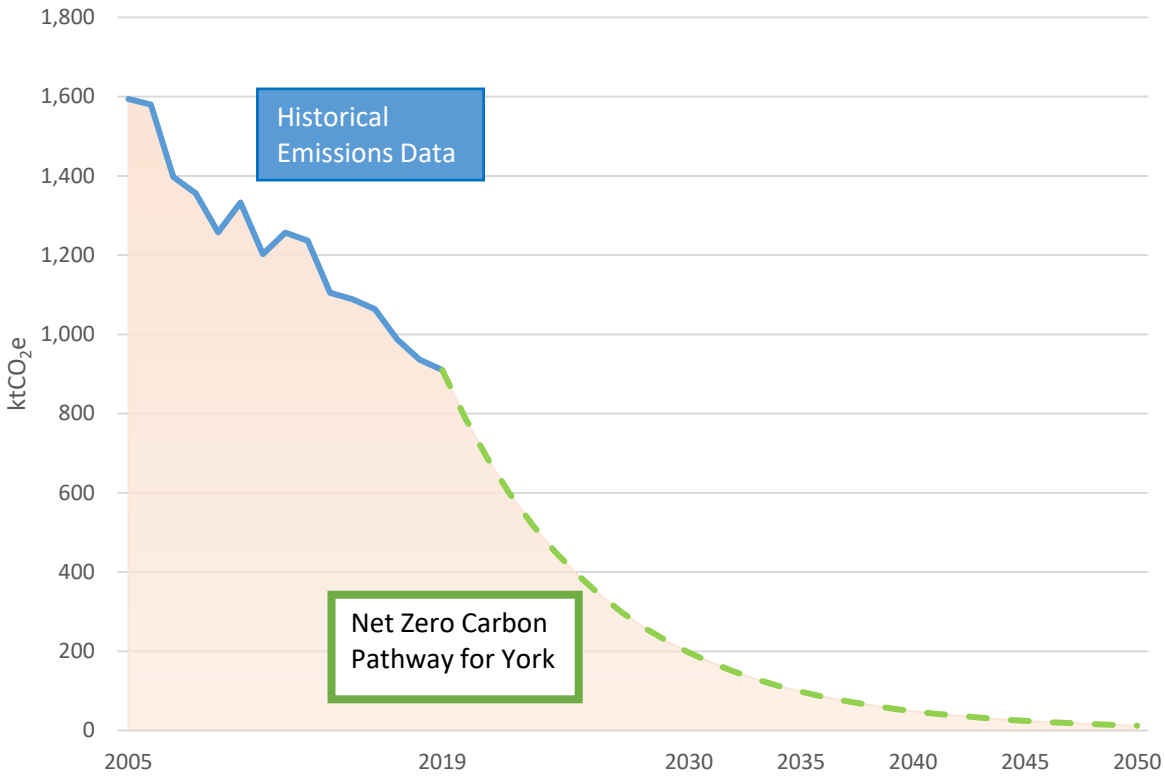


Figure 3: Net Zero Carbon Pathway for York

In accordance with the net zero carbon pathway, emissions in York will have reduced to 196 $ktCO_2e$ by 2030; an 88% reduction on 2005 levels.

A Climate Resilient York

Reducing our carbon emissions is crucial to limiting the potential impacts from climate change, but we are already experiencing changes to our climate and an increase in local extreme weather events. As the world warms, the UK is likely to have hotter, drier summers and warmer, wetter winters. Extreme weather events such as heatwaves and heavy downpours could become more frequent and more intense.

The hottest summer day of the past 30 years in York was 33.9°C; but summers have been getting warmer[14], with four of the 10 hottest summers recorded in the past two decades. If global average temperatures increase 2°C above pre-industrial levels, the hottest summer day could be about 35.6°C, while temperatures above 30°C for two or more days can trigger a public-health warning.

On the wettest summer day of the past 30 years, 50mm of rain fell in York. At a 2°C rise, this could be about 62mm[15] and also see increased experiences of localised short-duration summer storms of 100mm/hr or greater, which can overwhelm drainage systems and are difficult to predict. The increased rainfall poses a significant risk for our city, which has a long association with flooding. The November 2000 flood was the largest on record for the River Ouse with levels peaking at 5.4m above normal summer levels. The Viking River Level Recorder in York has one of the longest continual set

[14] https://www.bbc.co.uk/news/resources/idt-d6338d9f-8789-4bc2-b6d7-3691c0e7d138
[12] https://www.bbc.co.uk/news/resources/idt-d6338d9f-8789-4bc2-b6d7-3691c0e7d138

of river level records in the country dating back to the 1880's, however, aside from the 1947 and 1982 floods, the vast majority of significant flood levels have occurred in the city since the year 2000.

Scale of the Challenge

Achieving our Net Zero Pathway will require an average annual emissions reduction in York of 13% up to 2030. Without intervention, emissions in York are forecast to reduce; mainly as a result of the decarbonisation of the electricity system. If we continue along a current business-as-usual trajectory, emissions in York are projected to be 810 $ktCO_2e$ in 2030 (a 49% reduction on 2005 levels).

The Business as Usual Pathway will not result in the scale of change required. Significant emissions reductions are needed. To assess the potential of additional emissions reduction in York, we have worked with SCATTER to produce a Projected Emissions Reduction Pathway, based on delivering actions that are currently available with the existing supply chain capacity, national policy and technological readiness. This pathway includes the interventions that are achievable under existing conditions and provides a reference for monitoring our progress against York's Net Zero Carbon Pathway.

By 2030, the Projected Emissions Reduction Pathway will reduce our emissions to **361 $ktCO_2e$** in 2030 (a 77% reduction on 2005 levels) and **114.8 $ktCO_2e$** in 2050 (a 93% reduction on 2005 levels).

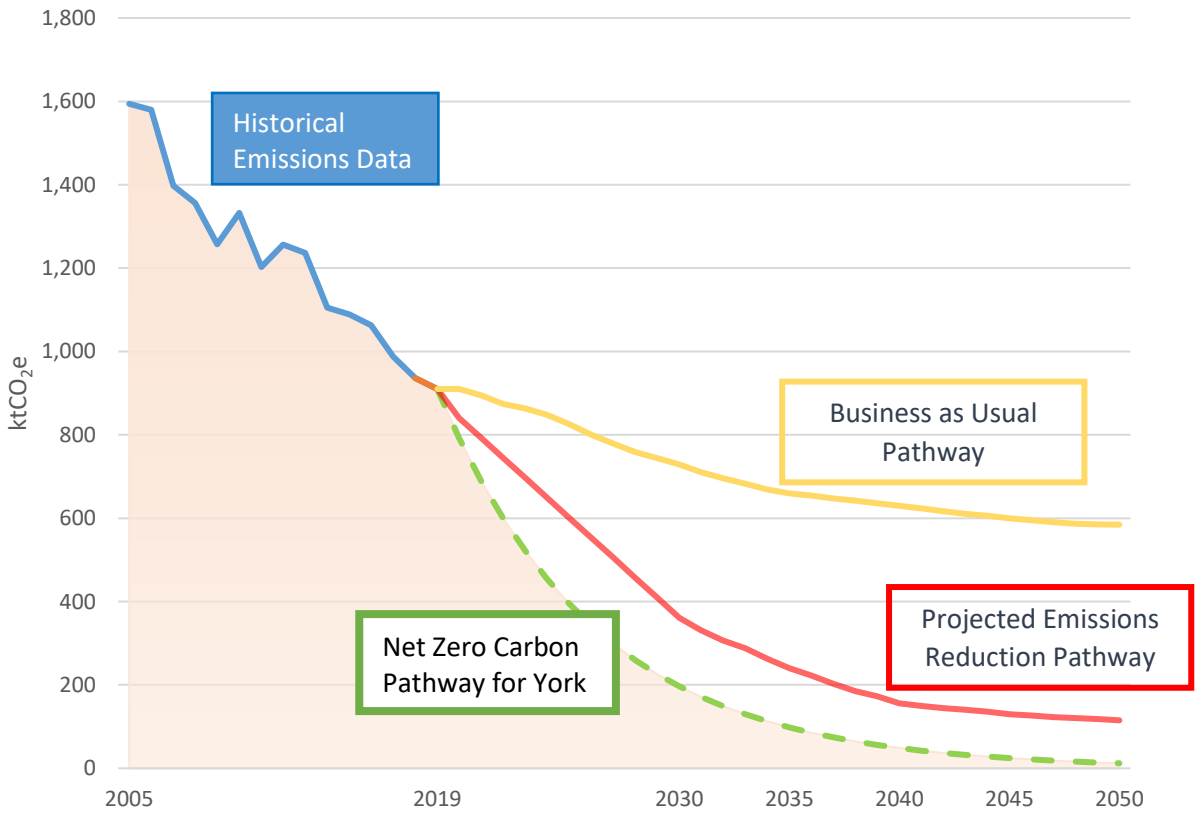


Figure 4: Projected Emissions Reduction Pathway and Business as Usual Pathway for York

In 2030, the emissions profile for York is expected to look very different from today. Following the Projected Emissions Reduction Pathway to 2030 would mean emissions from each sector will reduce by:

Figure 5: Emissions reduction by sector along the Projected Emissions Reduction Pathway

Underpinning the emissions reductions across every sector is the decarbonisation of York's energy system. Energy, in the form of heat and power, is used across the city by our residential, commercial and institutional buildings as well as in our industrial and agricultural processes. This energy use accounts for 62% of our total carbon emissions.

Since 2005, total energy consumption in York has reduced by 22%; and over the same time-period, carbon emissions associated with energy use has fallen by 36%[16] due to the decarbonisation of the national electricity grid. As the grid approaches full decarbonisation by the UK Government's target date of 2035, it will become more challenging to achieve further emission reductions.

Continuing to reduce our total energy use and increasing local renewable generation across the city will therefore be important aspects of our transition to net zero.

Our Approach

To tackle climate change and achieve net zero carbon by 2030, we will need to reduce emissions from all sectors and require action for all aspects of society, with particular emphasis on our buildings, transport and energy systems. This Strategy sets out an approach to net zero that consists of four elements:

1) Significant emissions reduction along the Projected Emissions Reduction Pathway with actions that can be delivered with currently available technology, deployment rates and policy

2) Going beyond the Projected Emissions Reduction Pathway when new technology, deployment and policy mechanisms allow and attracting new investment

3) Removing remaining emissions from the atmosphere through cost effective nature based and technological solutions

4) Adapting our city to the effects of a changing climate

[16] https://www.gov.uk/government/statistical-data-sets/regional-and-local-authority-electricity-consumption-statistics

Significant reductions	York will develop an action plan to deliver the emissions reductions associated with the Projected Emissions Reduction Pathway and regularly review and monitor progress in order to identify new opportunities for further emissions reduction
Going Beyond the Projected Pathway	Maximizing opportunities to accelerate delivery by supporting growth in the supply chain, training and upskilling the workforce and positioning York as a place to pioneer and pilot new projects Attracting external investment by lobbying UK government, attracting national and international investment and accessing new sources of finance to deliver the scale of change required across the city Capitalize on technological development and falling technology costs to accelerate deployment of decarbonisation measures. No single technology should be relied upon or anticipated so we need to be prepared to take advantage of future opportunities Lobby UK Government for policy change that accelerates the rate of decarbonisation nationally and locally. Push for local spending and policy powers that will allow us to go further and faster than the national net zero ambition
Insetting & Offsetting	Any remaining emissions that we are unable to decarbonise will need to be removed from the atmosphere. This can include nature-based solutions, e.g. tree planting and the restoration of other ecosystems, or other technologies such as carbon capture and storage (CCS) and negative emissions technologies (NETs). Prioritising actions within the city boundary (insetting) to remove carbon dioxide from the atmosphere can provide additional environmental, social and financial benefit for York. Offsetting will only be considered as a last resort to address residual emissions after all actions have been taken to reduce and avoid direct emissions as much as possible. The cost of offsetting will be a key consideration before employing this solution and it will only be done if financially viable for the city. At current UK carbon prices, offsetting our residual emissions in 2030 (361,000tCO_2e) would cost an estimated £5.2m/yr.[17] We will produce a separate offset strategy outlining our approach.
Adapting to Change	Our climate is already changing. We will increase our understanding of the local impacts and risks from climate change and take actions that reduce these risks. This will include continuing to improve our resilience to flooding, protecting and enhancing our local biodiversity and reducing the exposure and impacts from dangerous levels of overheating.

Table 1: Our approach to achieving the Net Zero Carbon Pathway and becoming a climate resilient city

[17] https://www.oecd.org/tax/tax-policy/carbon-pricing-united-kingdom.pdf

Section 3: Objectives

This chapter provides the strategic objectives that we need to work towards to tackle climate change and deliver net zero.

These objectives will act as a reference for all of us, including the council, businesses, residents, visitors, academia and community groups to guide our actions and the decisions we take. We all have a part to play.

Engagement

As a city, we need to be well informed and feel empowered to make decisions and take action that will have a positive impact on carbon emissions and our climate. This Strategy provides a framework for how we can all engage with the topic and each other to create positive change.

Objectives

1.1 Clear communication and information
Providing accurate, timely and relevant information about climate change and its impacts

1.2 Increase awareness and understanding
Empowering our city by making climate change understandable and relatable

1.3 Build strong relationships and networks
Working together to achieve our ambition

1.4 Identifying best practice
Sharing experiences to inspire action

Buildings

The built environment represents the majority of York's emissions, contributing 61.9% of the total emissions for the city. Buildings are responsible for 580,000tCO_2e a year and is a priority theme for this Strategy and our net zero ambition.

Objectives

2.1 Improve energy efficiency in existing buildings
Insulating and investing in fabric improvements to reduce energy demand

2.2 Reduce emissions from new buildings
Design and build new developments that minimise energy use and emissions

2.3 Move away from gas heating systems
Increase the uptake of renewable heating systems and improve the efficiency of gas boilers

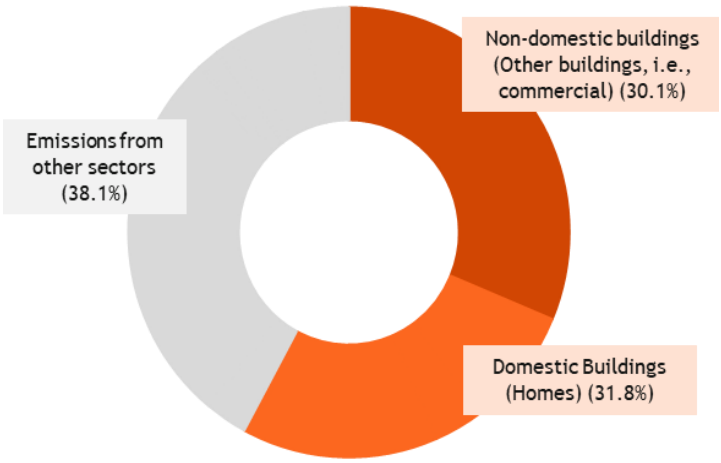


Figure 6: Proportion of emissions from building

2.4 Switch to energy efficient appliances and green energy tariffs

Replace our home and business appliances to use less energy and save money; and purchase energy from renewable sources

2.5 Make our buildings climate resilient

Protect our built environment from potential flooding and overheating

Where we are	Where we need to be in 2030
By 2021, 3,627 households in York have improved the energy efficiency of their home under the government's Energy Company Obligation (ECO) Scheme.[18]	3,600 houses "medium" retrofit, reducing annual average energy demand by 66%
In 2021, 11,992 (13.5%) of households in York were classed as fuel poor.[19]	29,100 houses "deep" retrofit, reducing annual average energy demand by 83%
In 2021, 44% of EPC-rated domestic properties had ratings indicating low energy efficiency (D or below).[20]	21% reduction in domestic energy demand
In 2021, 46% of EPC-rated non-domestic properties in York were rated D or below.[21]	17% reduction in non-domestic energy demand
All new buildings are required to reduce emissions by 28% above building regulations	All new houses to be built to the highest energy efficiency standards
It is estimated that in 2019, 12% of properties in York were not connected to the gas network.[22]	47% of heating systems in domestic buildings are electrified and 39% of heating systems in non-domestic buildings are electrified
In the UK, consumption by domestic lighting decreased 25% between 2010 and 2019.[23]	31% reduction in domestic energy demand for appliances, lighting and cooking and 11% reduction in non-domestic energy demand for appliances, lighting and cooking
Nationally in 2016, it was estimated that around 45-50% of domestic cooking was electrified.[24]	10% increase in electric fuel usage for non-domestic cooking and 29% increase in electric fuel usage for domestic cooking
4,917 properties are identified as being in flood zones in the city. However, the vast majority of properties benefit from the city's flood defences or direct property level resilience measures.	Investment in improving catchment scale measures on the Swale, Ure and Nidd. New developments in flood zone built with flood resilience.

[18] https://www.gov.uk/government/statistics/household-energy-efficiency-statistics-headline-release-may-2021

[19] https://www.gov.uk/government/statistics/sub-regional-fuel-poverty-data-2021

[20] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904850/D1_-_Domestic_EPCs.xlsx

[21] https://www.gov.uk/government/statistical-data-sets/live-tables-on-energy-performance-of-buildings-certificates

[22] https://www.gov.uk/government/statistics/msoa-estimates-of-households-not-connected-to-the-gas-network

[23] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/208097/10043_R66141HouseholdElectricitySurveyFinalReportissue4.pdf

[24] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/820753/2019_Electrical_Products_Tables.xlsx

Transport

Emissions from transport represent 27.9% of York's emissions profile; a total of 261,000tCO_2e a year. Of this, 88% of emissions come from car travel or public transport, with the remaining 12% from freight.

Objectives

3.1 Travel shorter distances
Reduce the overall distances travelled

3.2 Increase take-up of active travel
Reduce overall car usage through alternative modes of transport, public transport and car sharing.

3.3 Switch to electric vehicles (EV)
Increase the share of vehicles on the road that are electric or hybrid

3.4 Reduce freight emissions
Decrease the overall distance and fuel usage of freight vehicles

3.5 Futureproof infrastructure
Ensure our transport infrastructure can withstand extreme weather events

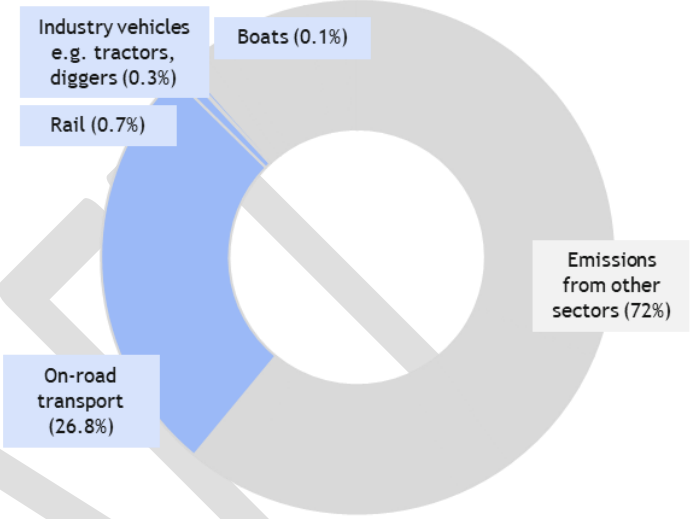


Figure 7: Proportion of emissions from transport

Where we are	Where we need to be in 2030
In 2011, the average distance travelled to work in York was 9.8 miles.[25] Over half travel less than 3 miles and two-thirds travel less than 6 miles.	25% reduction in the average number of passenger miles travelled per person
In 2011, 54% of commutes to work were by car or van and 29% by active travel (walking and cycling).[26]	3% reduction in road transport use; 25% increase in bus use; 8% increase in rail transport
42% of York residents walk five times per week and 10% cycle five times per week.[27]	33% increase in active travel
Since 2014, 532 charging points have been installed in York under government grant schemes including the Electric Vehicle Homecharge Scheme (EVHS), the Workplace Charging Scheme (WCS) and the On-Street Residential Chargepoint Scheme (ORCS)[28]	89% of cars are EV or Hybrid EV; 90% of buses and 75% of trains are electric
In 2019, there were approximately 9,200 LGVs and 600 HGVs registered in York.[29]	9% reduction in road freight mileage and a 71% increase in efficiency

[25] https://www.nomisweb.co.uk/census/2011/QS701EW/view/1946157112?rows=rural_urban&cols=cell
[26] https://www.nomisweb.co.uk/census/2011/QS702EW/view/1946157112?rows=rural_urban&cols=cell
[27] https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic
[28] https://www.gov.uk/government/statistical-data-sets/walking-and-cycling-statistics-cw
[29] https://www.gov.uk/government/statistics/electric-vehicle-charging-device-grant-scheme-statistics-april-2021

Majority of our network benefits from flood defences and remains open in river flood events, but some road closures are experienced and outlying villages can become cut-off	Expanded protection from river flood events and intense storm events.
30% of the York taxi fleet has switched to low emission alternatives (petrol hybrid, plug-in hybrid or electric).	Aspire to an ultra-low emission taxi fleet and provide continual emission reduction from licensed vehicles.

Waste

Waste management represents 2.7% of York's total emissions. While this report only addresses the end treatment of waste, the consumption of purchased goods and their lifecycle should be considered when addressing waste.

Under the waste hierarchy, after reconsidering production and consumption, we should only aim to recycle resources after they have been reused or repurposed.

Objectives

1.1 Reduce the amount of waste
Decrease the total volume of waste produced across the city

1.2 Increase recycling rates
Increase the amount of waste that goes into recycling

1.3 Move towards a circular economy
Increase the amount of resources that are reused or repurposed, saving raw material inputs and waste outputs

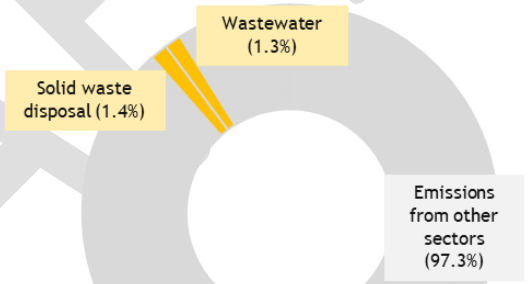


Figure 8: Proportion of emissions from waste

Where we are	Where we need to be in 2030
81,075 tonnes of household and 15,007 tonnes of non-household waste was collected by the Council in 2019/20.[30]	24% reduction in the volume of waste
The volume of household waste collected by the Council decreased in 2019-20 by 8% from 2018-19 levels.[31]	
The household recycling rate in 2019-20, based on Local Authority collected waste was 48.4%.[32]	50% increase in the recycling rate
In 2019, recycled materials made up 16% of the UK's domestic material consumption.[33]	

[30] https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables
[31] https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables
[32] https://www.gov.uk/government/statistical-data-sets/env24-fly-tipping-incidents-and-actions-taken-in-england
[33] https://think.ing.com/articles/eu-and-uk-have-to-step-up-to-meet-circularity-goals

Commercial & Industrial

Commercial and industrial process emissions represent a small proportion of York's baseline inventory, with around 6% of emissions arising from industrial processes. York has a diverse and thriving economy. While there is little heavy industry, there is a long history of manufacturing, particularly in the food and drink sector.

Objectives

5.1 Improve process efficiency
Reduce energy, water and material usage to reduce emissions and save money

5.2 Shift away from fossil fuels
Change the fuel input used by industry to electricity and green hydrogen

5.3 Support growth in the green economy
Create new investment and green jobs through initiatives such as BioYorksire[34], sustainable construction and transport.

5.4 Increase business resilience to climate risk
Ensure businesses are not adversely affected by the changing climate and identify new opportunities for growth

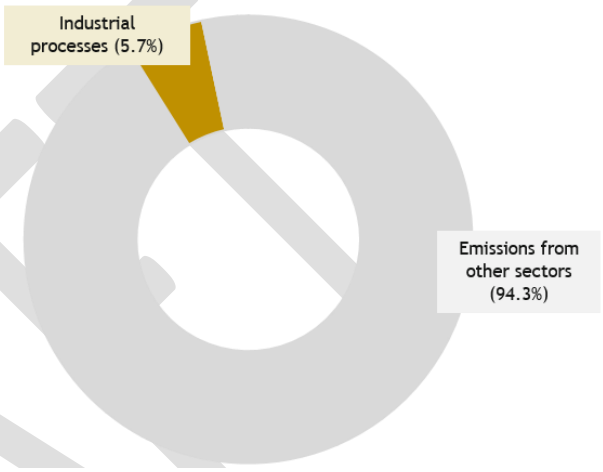


Figure 9: Proportion of emissions from commercial & industrial

Where are we	Where we need to be in 2030
In the UK, 35% of energy consumed by the industrial sector in 2019 was electric.[35]	23% reduction in oil fuel usage 3% increase in electricity consumption 2% increase in natural gas usage
Industrial carbon emissions in the UK including those from energy-intensive industries have halved since 1990, which has mainly been due to efficiency gains, fuel switching, a change to industrial structure of the UK and re-location of production overseas.[36]	Process emissions reduced: 14% for chemicals 10% for metals 11% for minerals 50% other industries
Since 1990, the food and drink manufacturing industry in the UK has improved its energy efficiency by 42%.[37]	The low carbon and renewable energy sectors could create 3,090 jobs in York
In 2014, the UK's food and drink manufacturing industry emitted approximately 1% of the UK's total annual emissions.[38]	

[34] Insert overview of BioYorkshire
[35] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820647/DUKES_1.1.5.xls
[36] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/652109/oil-refining-decarbonisation-action-plan.pdf
[37] Industrial Decarbonisation and Energy Efficiency Roadmap Action Plan
[38] Industrial Decarbonisation and Energy Efficiency Roadmap Action Plan

Natural Environment

York's natural environment contributes 1.8% of the city's overall emissions, with our agricultural areas on the front line of climate change being the first to feel its impacts. Livestock contribute 2.6% of the city's emissions; however, land use practices in York absorb the equivalent of 0.8% of the city's emissions, which reduces the sector's overall figure to 1.8%.

Objectives

6.1 Increase tree planting
Plant more trees to increase the canopy cover across the city

6.2 Increase carbon storage
Make better use of land to absorb carbon from the atmosphere

6.3 Promote sustainable land management
Diversify and innovate within the agricultural sector

6.4 Reduce the impacts of extreme weather events
Use our natural environment to reduce the risks and impacts of flooding and overheating

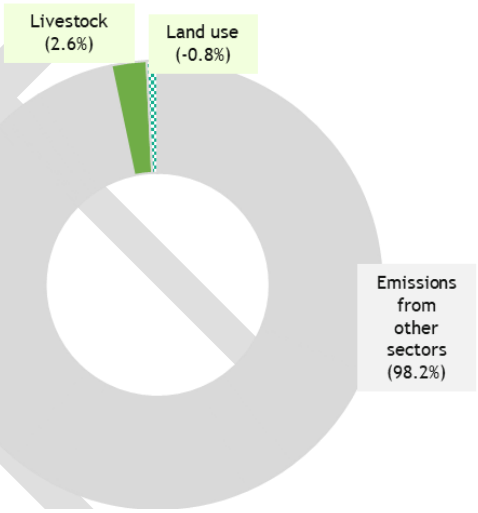


Figure 10: Proportion of emissions from natural environment

Where we are	Where we need to be in 2030
Trees currently cover 10.8% of York[39]	Tree canopy cover to increase to 13%
Tree planting outside woodlands is currently reported at around 1,900 hectares across York[40]	Tree planting outside woodlands increases by 42% from 2020 coverage to 2,700 hectares.
In 2018, there was approximately 249 ha of rough grassland in York[41]	By 2050, there is a 3% decrease in grassland and 1% decrease in cropland to allow for increased forestland and carbon sequestration potential
65.4% of land in York is classed as agricultural with 7,348 ha of York's land designated under cereal farming[42]	

Energy Supply

Electricity is the preferred source of energy as it can be produced from sources that do not release any carbon emissions. The UK has a target to remove carbon-based sources of energy from the UK's energy grid by 2035[43], removing carbon emissions from the country's energy supply.

[39] https://www.york.gov.uk/news/article/618/york-s-tree-canopy-to-expand-for-next-30-yearshttps:/www.york.gov.uk/news/article/618/york-s-tree-canopy-to-expand-for-next-30-years
[40] Per SCATTER analysis
[41] https://www.york.gov.uk/news/article/618/york-s-tree-canopy-to-expand-for-next-30-yearshttps:/www.york.gov.uk/news/article/618/york-s-tree-canopy-to-expand-for-next-30-years
[42] https://www.gov.uk/government/statistical-data-sets/structure-of-the-agricultural-industry-in-england-and-the-uk-at-june
[43] https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035

Objectives

7.1 Increase renewable generation capacity
More of our energy is produced locally from renewable technologies

7.2 Improve energy flexibility and storage
Develop projects that reduce peaks in energy demand and increase local energy storage

7.3 Support local community energy systems
Empower communities to own and manage local clean energy generation

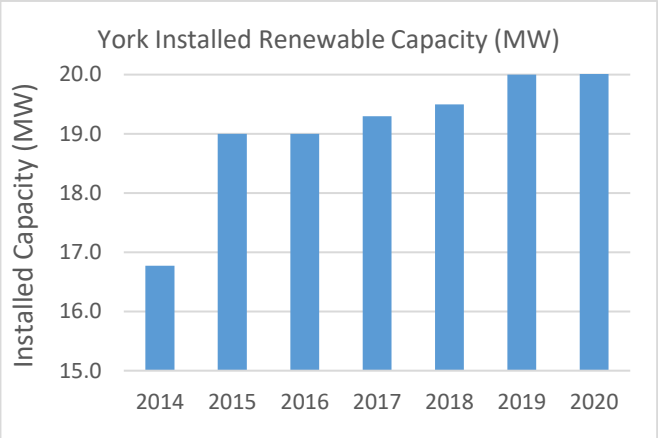


Figure 10: Renewable capacity installed in York

Where we are	Where we need to be in 2030
In 2019, York had 3,236 installations with a capacity of 11.8MW and 103,226MWh generation[44]	2,356.6MW of installed renewable capacity
In 2021, 1.6GW of new grid flexibility was added to electricity networks across the UK to assist during peak periods[45]	Significant new energy storage and demand management
There are currently 232 community energy organisations in the UK dedicated to renewable electricity generation[46]	Local renewable generation displacing fossil fuel sources in power stations

Governance

The Governance framework will provide guidance and management of our climate change objectives. City of York Council will take a lead in developing the governance structure but will require support from across the city in tracking and monitoring progress towards our collective ambition.

Objectives

8.1 Deciding responsibility
Each objective and action will have a named stakeholder responsible for the activity

8.2 Tracking actions
A city inventory of which actions are underway and who is responsible for them

8.3 Monitoring progress
Provide indicators to measure and record progress towards our targets

8.4 Reporting annually
The results of the monitoring and evaluation reporting are published annually

[44] https://www.gov.uk/government/statistics/regional-renewable-statistics
[45] https://www.energynetworks.org/industry-hub/resource-library/?search=ON21-WS1A-Flexibility+Figures+2021+Full+Update+%2830+Jul+2021%29&id=267
[46] https://communityenergyengland.org/pages/state-of-the-sector

Deciding Responsibility	While delivering on the objectives within this strategy should be everyone's responsibility, some organisations will naturally take a lead in certain areas. To determine who is responsible for each objective, we will build a strong partnership between public and private sector organisations. We will use and strengthen existing relationships and channels of communication within York e.g. the York Climate Commission.
Tracking Action	The responsibility for achieving our objectives is shared between the council, businesses, residents, visitors and other organisations. An "owner" for each area will contribute to the monitoring and reporting framework. Owners lead and coordinate activity, identify and engage with stakeholders and report on progress. All stakeholders delivering against the strategy will enable the benefits to be felt across the city.
Monitoring Progress	Reporting on progress is an important feature of this framework. Regular reporting will track the impact of our work and enable reflection and correction if required. The impact of delivery will be analysed alongside progress. But emissions data alone will not be sufficient for this analysis: 1. Emissions data is published two years in arrears, which means that there is a time lag between project delivery and analysis of its impact 2. Emissions data is not provided at the action level, meaning monitoring the impacts of a specific project in this way is difficult, particularly if several projects contribute to emissions reductions in the same area Instead, Key performance indicators (KPIs) that publish recent-year data can be used for measuring progress. KPIs can allow year-on-year progress to be tracked. National datasets and city-wide reporting will also be used. We have identified suitable KPIs for the targets in our strategy. Any changes in these KPIs can inform the city's climate action. A list of these indicators and sources can be found in Technical Annex.
Reporting Annually	The final piece of the monitoring and evaluation framework is the sharing of reporting on progress in an accessible and transparent way. It is crucial for public, city-wide support that the council reports its progress publicly and transparently. The council will report annually and make it publicly available through public meetings (Council, Executive and Scrutiny) and the York Open Data Platform. The council will also report via CDP and the Global Covenant of Mayors for Climate and Energy (GCoM).

Table 2: Our Governance Framework

Section 4: Co- benefits & Case Studies

Co-benefits

As a city, we need to make sure that how we live today doesn't adversely affect future generations, and where possible, benefits them. This means recognising the significant interdependencies between living, lives and livelihoods:

- The environment – protecting the environment so future generations enjoy living in safe and clean spaces.
- Health and wellbeing – supporting everyone live long, independent healthy lives
- The economy – developing sustainable, inclusive, fair economies that protect and create livelihoods that actively reduce poverty and inequality.

To develop York so that it is fit for the future, we have published a set of three sustainable strategies, together with a 10-year plan. These strategies set out the areas we will focus on over the decade ahead so our city is fit for the future.

The 10- year plan 2022-2032 describes the priorities partners will deliver on behalf of the city to realise the ambitions described in our city strategies.

Together, with the Climate Change Strategy 2022-2030, we will be better placed to live happier and healthier lives now, whilst preparing the city to be fit for our future children and grandchildren.

By tackling climate change, York will benefit from economic, social and environmental improvements, creating a prosperous, progressive and sustainable city.

 Economic	 Social	 Environmental
If households invested in energy efficiency and low carbon options, residents could **save £20m a year** in energy bills[47], the equivalent of £222/yr for every household	Increasing walking and cycling leads to **happier and healthier** communities, reducing the pressure on local health services	Integrating green infrastructure into new developments **increases biodiversity** and access to nature
The low carbon and renewable energy sectors could **create 3,090 jobs** in York[48]	Lower emissions leads to **better air quality**, improving everyone's health[49]	Increasing recycling rates **reduces pollution** and incidents of fly-tipping[50]
Improving energy efficiency **reduces the cost** of energy. Around 12,000 households across York are classified as being in fuel poverty[51]	Community energy schemes **give control to local communities** and can generate money which can be invested locally	Trees and vegetation help cool cities, **reduce flood risk** and increase biodiversity,

[47] https://pcancities.org.uk/energy-and-carbon/york
[48] https://www.local.gov.uk/local-green-jobs-accelerating-sustainable-economic-recovery
[49] https://www.centreforcities.org/reader/cities-outlook-2020/air-quality-cities/
[50] https://wwf.panda.org/discover/knowledge_hub/teacher_resources/project_ideas/recycling_glass/?
[51] https://www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics

		supporting nature throughout the region[52]
Investing in profitable energy efficiency measures for schools, hospitals, offices, shops and restaurants, could save the city £11m a year in energy bills[53]	Better insulated homes improve wellbeing and **reduce the risk of health conditions**	Well located solar panels can help to create a micro-climate that **supports increased biodiversity**
Electric vehicles are cheaper to run and maintain, costing £2-4 to charge for 100 miles, saving £10 per 100 miles over diesel cars[54]	A reduction in vehicle exhaust fumes **improves air quality** and reduces negative effects on people's health[55]	Trees and green spaces can create habitats, support species and increase biodiversity[56]
If everyone had access to sufficient green space, the benefits associated with increased physical activity could save the health system £2.1bn per year[57]	Increased physical activity due to active travel will help to **reduce obesity figures**. It is estimated that 55.2% of adults and 16.1% of 10–11-year-olds in York are classed as overweight or obese[58]	
Community energy schemes have the potential to reduce utility bills and generate a long-term source of income for local people[59]	Working towards zero waste helps to mitigate food poverty and hunger by enabling edible surplus food to be recovered and shared through food banks and charities in local areas[60]	

Table 3: Economic, social and environmental co-benefits of delivering our climate change ambition

[52] https://www.woodlandtrust.org.uk/media/1702/benefits-of-trees-outside-woods.pdf
[53] https://pcancities.org.uk/energy-and-carbon/york
[54] https://energysavingtrust.org.uk/transport/electric-cars-and-vehicles/electric-vehicles
[55] https://www.eea.europa.eu/signals/signals-2020/articles/improving-air-quality-improves-people2019s
[56] support species and increase biodiversity
[57] https://ashden.org/wp-content/uploads/2020/09/CAC-Chapters-all_new-brand.pdf%20
[58] 55.2% of adults and 16.1% of 10–11-year-olds in York
[59] https://ashden.org/wp-content/uploads/2020/09/CAC-Chapters-all_new-brand.pdf%20
[60] https://www.c40knowledgehub.org/s/article/Why-cities-need-to-advance-towards-zero-waste?language=en_US

Case Studies

York and North Yorkshire Innovative Flood Resilience Project

City of York Council and North Yorkshire County Council have worked with a number of project partners to develop a successful bid for Government funding to develop innovative approaches to flood resilience. The project aims to deliver catchment wide natural flood risk management solutions that provide increased flood resilience to York and North Yorkshire communities and reduce the impacts of existing and future flood events and wider climate resilience benefits.

The five year project works with landowners and those at flood risk across the River Swale, Ure and Nidd catchments upstream of York, and form links to develop an understanding and agreement of how changes to upstream land management can benefit at risk communities downstream. This is an ambitious project that has not previously been carried out on this scale. The project works with the varying catchment partnerships and the good work that has already been carried out to embed catchment-sensitive farming ideas and directly link those who have the means to upstream flood prevention measures with those who benefit from reduced flood risk. The linkage would be both financial and social, providing reward and recognition for the upstream parties and engendering an understanding and sense of ownership of the measures by those who benefit downstream.

The partnership is developing a bespoke and detailed science base to identify storage and natural flood management opportunities down to a local scale, producing a 'shopping list' of potential measures and identifying the downstream locations that would benefit from this work. Engagement of beneficiaries in urban areas will identify ways in which they can support and contribute to the delivery of such measures, and this is expected to be supported through local policy and financial incentives and inform national policy and future programmes of investment. Innovative ways to engage all parties will be developed drawing on past best practice, science and research from a wide range of fields. A number of demonstration sites will be developed throughout the catchment to illustrate the techniques and highlight the benefits.

The project ultimately aims to deliver the means to establish a wide range of natural flood risk management projects across the catchment that will deliver increased flood resilience and support a wider range of multiple benefits across other climate, ecology and biodiversity agendas.

Although City of York Council are the project funding lead, an approach will be developed and agreed between the authority and North Yorkshire County Council to establish joint project principles and outcomes and deliver a joined up approach to flood risk solutions across the whole river catchment.

Zero Carbon Housing Delivery Programme

The City of York Council Housing Delivery programme is creating 600 new homes that will be both zero carbon in use and reduce carbon emissions associated with the construction process.

Construction accounts for around 40% of the total annual carbon emissions in the UK. Through the Housing Delivery Programme, we are taking proactive steps to reduce our environmental impact through such measures as using low cement concrete in foundations, timber frame construction, and recycled newspaper insulation. It is anticipated that through actively choosing lower carbon construction materials, CO_2 emissions will reduce to a fraction of those compared to a typical new build development.

This approach to reducing carbon continues through the life of each home. Space heating, hot water and electrical appliances make housing one of the largest contributors to carbon emissions in the country. The new homes developed through the Housing Delivery Programme will achieve certified Passivhaus status, meaning that they are so well insulated and air tight that very little heating is required, even on the coldest days. The orientation of the homes has been carefully considered to achieve passive solar gain; that is maximising the benefits of the sun to warm the home during the day and then keeping that heat in with high levels of insulation. This approach will save a resident around 70% on fuel bills compared to a typical new build home. The programme goes further by using renewable technologies, such as solar PV and air source heat pumps, to generate as much power as is needed to heat, light and power the home; reducing net carbon emissions to zero. The total carbon savings of homes delivered through this programme are estimated to prevent around 1,000 tonnes of CO_2 being emitted every year.

The Housing Delivery Programme takes a holistic approach to sustainability by looking at habitat and lifestyle considerations in climate change, which includes heavily constrained car parking spaces (as low as 0.25 spaces per home in more central locations). Sustainable transport choices are encouraged through the provision of four secure cycle parking spaces per family home, which include electric charging points. Communal electric cargo bikes and pool cars are also included on sites to reduce ownership and regular use of cars.

Each site creates new connections between existing roads through new low or zero-car streets where play and activity is encouraged. Biodiversity is significantly enhanced on each site with more trees planted, than houses built. The projects create highly sociable spaces, where residents can interact within semi-private and public spaces including; shared gardens, public open spaces and internal community spaces. Projects incorporate spaces to work, create, grow, play and relax as individuals, families and communities.

E-Mobility Trial

York is one of four English cities chosen by the Department of Transport to trial e-scooters. The City of York Council partnered with TIER to launch its first fleet of 50 e-scooters in October 2021. In just over a year, the fleet has grown to over 550 e-scooters, alongside the introduction of 80 e-bikes.

Since the start of the trial, 26,000 riders have completed more than 130,000 journeys, covering around 550,000km. These trips have replaced 16,000 car journeys in the city, amounting to a saving of 6 tonnes of carbon dioxide.

Alongside increasing the number of e-scooters available to people in the city, TIER have also expanded to new routes in recent months, with access to popular tourist destinations, university campuses and York hospital. There are over 90 parking bays around the city to ensure orderly parking.

The success of the scheme has seen the trial extended for a further 8 months with plans to expand to other areas of the city. Its popularity demonstrates the huge potential for micro-mobility in York.

Jessica Hall, Regional Manager North of England

"Transport in York accounts for 27% of city-wide carbon emissions and TIER are committed to reducing emissions and improving air quality across the city. This is why it's essential we help provide as many different, convenient forms of transport to enable residents, commuters and visitors to get around York sustainably.

TIER e-scooters and e-bikes have been hugely popular in York since the scheme launched a year ago and are still being embraced by locals and visitors as a greener, more convenient transport option. Our e-scooters and e-bikes have also brought other benefits to York, such as reducing air pollution and easing congestion."

University of York

With over 20,000 students, The University of York plays an important part in our city's community. The Russel Group University has over 30 academic departments dedicated to encouraging their students to think critically and change the world through social, economic and environmental knowledge, skills and innovation.

As the institute strives to be a university for public good, 2021 saw the publication of The University of York Sustainability Plan 2021 – 2030. The plan sets out how the university intends to tackle the current and future challenges faced by the local, national, and international community as they play a part in creating a more sustainable world.

The plan embeds sustainability into the university's core functions of teaching and research, whilst also setting ambitious goals for carbon neutrality, building partnerships, reducing consumption and for improving health and wellbeing.

In line with the city-wide target, The University of York has set out a commitment for achieving carbon neutrality by 2030. Guided by the UN Sustainable Development Goals, the university aims to achieve their ambitious goal through ensuring their direct emissions and the management of their campus are environmentally sustainable, whilst simultaneously embedding the principles of sustainability within their teaching.

The University of York is already delivering on a variety of carbon reduction projects. It has secured more than 5,500 cycles spaces across campus, making it as a UK Gold Cycle Friendly Employer, they've also installed electric vehicle charging points and provide a free bus service between the East and West campuses

The University has been awarded the Green Flag Award for their open campus grounds, which include a variety of interactive nature trails and a YorActive trail with exercise equipment on route. This excellent green space not only supports the wellbeing of the students but has also become home to rare orchids, otters and wildflower meadows.

An awareness initiative has been set-up by staff and students that awards credits for sustainable behaviours, which can be used on rewards at the end of the year. The Green Impact Sustainability scheme has saved an estimated £92,000 and 289 tCO_2 in 2020/21.

York Gin sustainability actions

York Gin is an independent company making and selling award winning gin based in York. The first bottles of York Gin appeared on 1 March 2018 after a couple of years of preparation and gin has since won national and international awards. The company operates a distillery and two shops in York and is owned and run by locals.

Quality, sustainability, localism and York are at the heart of the company. They operate ethically and do the utmost to be responsible and sustainable.

Energy

From the beginning, York Gin has been powered by 100% renewable energy from Green Energy. The distillery is powered by electricity, rather than more commonly used gas because it uses less energy and as a lower carbon impact. Out of four company cars, three are electric and one is hybrid (the hybrid is for longer journeys when recharging may prove problematic.)

Waste

All bottles and gift sets are designed to be 100% plastic free and customers are encouraged to donate their old bottles for other customers to reuse as lights, containers or candle holders. Working with local upcycler PurePallets, they have turned old pallets, railway sleepers and other used wood into fittings and signage for the shops as well as keyrings, gin racks, fridge magnets and other products.

Local First

A local first approach ensures that the spirit is made in Yorkshire from grain grown on Yorkshire farms. All York Gin bottles are made in Leeds, by Allied Glass, using 40% less glass than their original method and the miniatures are made from a significant proportion of recycled glass. Allied Glass is itself a sustainable company doing a great deal to reduce its carbon footprint. Packaging and labels are also made in Yorkshire. A local supply chain reduces emissions from travel and supports jobs in the area.

Real Junk Food Project

The Real Junk Food Project was founded in 2015 by Adam Smith. The project, originally in Leeds, was established with a mission to make surplus food accessible to all and reduce carbon emissions; and a vision to reduce the environmental and social injustice of food waste by feeding bellies not bins. Since 2015 people all over the world have followed these values and intercepted food to redistribute in hubs and cafes (often on a Pay-As-You-Feel basis to make sure that anyone who needs it can access the food) to stop food going to waste.

Following this initial mission and vision, Planet Food York opened in January 2019 to intercept and redistribute surplus food in York. In the first 3 years, they have intercepted 745.5 tonnes of food, which is equivalent to 1.1 million meals, saving 2,200 tonnes of CO_2.

Food is collected by volunteers from supermarkets, restaurants, hotels and independent shops in partnership with Fareshare Yorkshire and Neighbourly. Rescued items are used in their Pay-As-You-Feel café and shop in Southlands Methodist Community Centre, Southbank. Planet Food have a zero food waste policy, so any food that doesn't get eaten is composted locally.

It is estimated that up to 30% of food is wasted globally, meaning that food waste is responsible for between 8 and 10% of CO_2 emissions. In the UK, around 9.5 million tonnes of food is wasted from households and businesses each year, of which 70% is avoidable. Planet Food York are helping to combat this waste through redistributing food into the community. They are not only reducing emissions but also tackling food poverty, social stigma and providing local employment and training through the work of 2 managers and 24 regular volunteers.

York Community Woodland

York Community Woodland is an extensive, new community woodland where over 210,000 new trees and shrubs will enable carbon capture, increase open green space, improve health and wellbeing, increase biodiversity, and create enhanced active travel networks, new green jobs, skills and volunteering opportunities.

This represents City of York Council's first venture into creating large-scale community woodland and seeks to be an exemplar for other landowners and local authorities to replicate.

Climate change is a serious concern among residents and the project provides an outlet for a passionate, inspired community keen to join us in this special opportunity. We work with over 500 members of the public, and an Advisory Group of businesses, landowners, members and experts, including; the White Rose Forest, Forestry Commission, the Woodmeadow Trust and the Woodland Trust.

York Community Woodland is a woodland for the city and its people. The name itself was decided by a public vote and embodies a collective ownership behind its creation.

The woodland masterplan was created through a community co-design process with over 800 residents contributing to the final design. The woodland will feature nature ponds, wild-flower meadows, extensive broad-leaf woodland, areas for quiet contemplation, an extensive trail network for walking, wheeling and horse riding, and a forestry school.

Jim Lee, Head of Woodland Creation, Forestry England has said;

"We are delighted to have been selected as the preferred delivery partner for York Community Woodland… working closely with City of York Council and the local community as the project moves through the next stages.

"The partnership… is particularly special to us."

EV Hyper Hubs

Two new Hyper-Hubs have been created at Monks Cross Park & Ride and Poppleton Bar Park & Ride. The sites provide high quality, high speed electric vehicle charging provision within the city. The project is joint funded with £1m from the European Regional Development Fund (ERDF), £800,000 from Office for Low Emissions Vehicles (OLEV) and a contribution of £400,000 from City of York Council.

The Hyper-Hubs are fitted out with 'Ultra Rapid' and 'Rapid' chargers that will significantly improve the speed of charging in line with latest technologies, and help the region to support the next generation of EVs (which have significantly larger battery capacities and support higher charging speeds).

Each Hyper-Hub has 4 Rapid chargers and 4 Ultra Rapid chargers under a canopy to keep users dry, with 24 hours a day 7 days a week access. Solar canopies and battery storage support the energy grid during peak hours. Each site includes 100 kWp solar PV arrays and 348 kW/507 kWh energy storage.

Each site is estimated to reduce carbon emissions in the city by 83tCO_2 a year by displacing fossil fuels used by combustion engine vehicles. Rapid and Ultra Rapid chargers will cost 25 pence per kWh, making York one of the cheapest places in the UK for Rapid and Ultra Rapid charging.

The Hyper-Hubs are part of a wider push to increase electric vehicle charging capacity across the city. In addition to the EV Hyper-Hubs, the Council are also investing to expand the EV charging infrastructure, as part of their Public EV Charging Strategy, with 350 new Fast charge-points, a minimum of 12 Ultra Rapid chargers and 19 Rapid chargers and replacing the entire existing charging infrastructure.

“York was one of the first cities to introduce a public electric network several years ago which has become really popular. In 2014 there were 1,510 charging sessions, by 2018 that had increased 10 fold to 13,695.

We're a pioneer in the use of innovative green technology. Over recent years, the council has led the way in providing a range of public charging facilities for electric vehicles to help reduce carbon emissions and improve local air quality thanks to EV’s eliminating nitrogen oxide emissions at the point of use.”

Section 5: Next Steps

The scale of the challenge is considerable, but through the principles and objectives within this Strategy, we can achieve our ambition for a net zero and climate resilient York by 2030. As a priority, we will need to focus on the following next steps:

Deliver on Projected Emissions Reduction Pathway

Prioritise the objectives in this strategy as the evidence base behind them ensures that improvements can be achieved most quickly and reliably. Develop an action plan that is clear in its resourcing, responsibilities and timescales while demonstrating progress, transparency and accountability.

Go Further

Consider a variety of funding streams to support financing local carbon reduction initiatives including community investment schemes and government grants. Combine efforts across the city to maximise available government funding to decarbonise buildings and other assets.

Holistic Approach

When making the case for climate action**, consider the impacts of climate action holistically.** Climate actions offer co-benefits to the local economy, communities and environment. Many offer a return on investment or operational cost savings. There are also opportunities for a "Green Recovery" as we bounce back from the COVID-19 pandemic and develop a sustainable approach to tourism that can be a regenerative resource for York.

Build Networks and Partnerships

Working together with other stakeholders, develop a climate change partnership and/or charter, which encourages collaboration, builds understanding, and shares expertise. Key external stakeholders include businesses, third-sector organisations, other non-profit groups, and our residents.

Glossary of Terms

AFOLU: Agriculture, forestry & land use.

BEIS: UK Government Department for Business, Energy and Industrial Strategy, the successor to the Department for Energy & Climate Change (DECC).

Carbon budget: a carbon budget is a fixed limit of cumulative emissions that are allowed over a given time in order to keep global temperatures within a certain threshold.

Carbon dioxide equivalent (CO_2e): the standard unit of measurement for greenhouse gases. One tonne of CO_2 is roughly equivalent to six months of commuting daily by car. "Equivalent" means that other greenhouse gases have been included in the calculations.

Carbon Neutral/ Net Zero: these two terms typically mean the same thing in the context of CO_2-only emissions. Whilst emissions are reduced overall, those that remain are then *offset* by removing carbon dioxide from the atmosphere. This removal may occur through technology such as carbon capture and storage (CCS) technologies, or through natural stores by rewilding or afforestation.

Carbon offset: a reduction in emissions of carbon dioxide or other greenhouse gases made in order to compensate emissions made elsewhere.

Carbon sink: a process or natural feature that removes carbon from the local atmosphere (e.g. trees or wetlands). The carbon is said to be *sequestered* from the atmosphere.

Climate Emergency: a situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it.

Decarbonisation: the process of moving towards a society with lower emissions of carbon dioxide.

Deep/Medium Retrofit: building improvements that reduce energy demand and carbon emissions. For example, wall/roof insulation, solar PV, double/triple-glazing, more efficient or low carbon heating systems. Medium retrofit represents a 66% reduction in energy demand and a deep retrofit represents an 83% reduction.

Energy system: the generation, transmission and consumption of energy across the city for buildings, transport and industry.

Greenhouse gases: gases released into the atmosphere that contribute to global warming by absorbing and re-emitting heat. These include carbon dioxide, methane, and nitrous oxide.

Gross emissions: the emissions total before accounting for local carbon sinks.

Gross Value Added (GVA): the measure of the value of goods and services produced.

IPCC: Intergovernmental Panel for Climate Change.

Indirect emissions: Greenhouse gas emissions occurring from the use of grid-supplied electricity, heat and/or cooling within the city.

Insetting: This is an alternative to traditional offsetting that stores carbon within York's boundary.

LULUCF: Land use, land use change & forestry.

Offsetting: the action of compensating for carbon emissions in York by saving carbon dioxide elsewhere.