

 **Norfolk** County Council

▶ **Climate Strategy**

Final - Agreed by Cabinet 10 May 2023

netzero
Norfolk 



► Foreword

Like everyone who lives in Norfolk, I am keenly aware of the impact of climate change. From flooding to sea-level rise and changing weather patterns, the effects of climate change are evident across the county. But we must not be discouraged. Instead, we must work together to develop a comprehensive plan to reduce our carbon footprint, build resilience against the impacts of climate change and benefit from a green economy.

As well as reducing the county council's emissions, our goal must be to reduce greenhouse gas emissions across all sectors, including households, businesses, transport, agriculture, and waste.

We must work collaboratively, looking at all aspects of our community and how we can adapt to mitigate the risks. This includes promoting sustainable land use practices, encouraging the use of renewable energy, developing sustainable transport solutions, and protecting vulnerable people and communities.

As a coastal county, Norfolk is particularly vulnerable to the impacts of climate change, and this strategy acknowledges this. Equally, we have huge assets, from green energy to green tourism. We recognise the

importance of working with the private sector, other local authorities and regional partners to address shared challenges and opportunities and ensure a coordinated response to climate change.

I am confident that this strategy provides a roadmap for building a more sustainable and resilient Norfolk. But it will require the support and commitment of all members of our community, from individuals to businesses to government. I encourage you to read this strategy and join us in this vital effort to protect our environment and safeguard our future.



Cllr Eric Vardy
Cabinet Member for Environment and Waste

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▶ Executive Summary

It is now beyond any reasonable doubt that climate change is taking place as a result of human activities, and its impacts are being felt both locally and globally. Governments, businesses, and individuals across the world are stepping forward to take action to protect our communities and natural places. A clear target has been set as a global community to limit rise of average global temperatures to well below 2°C compared to pre-industrial times. The imperative is now to make this happen, and local government has a key role to ensure that doing so reflects local priorities and the characteristics of the communities and places we represent.

The UK has shown leadership here. In 2019, it became the first major economy to pass laws to end its contribution to climate change by bringing all greenhouse gas emissions to 'net zero' by 2050. Net zero means

not adding to the level of greenhouse gases in the atmosphere. This is achieved through reducing emissions as much as possible and balancing out any that remain through offsetting methods, such as tree planting or carbon capture and storage technology. That same year, here at Norfolk County Council we made an ambitious commitment to lead by example locally on climate action through our [Environmental Policy](#). We pledged to make our estate net zero by 2030, and work in partnership in support of Norfolk's wider journey towards carbon neutrality.

Pushing forward with these commitments is vital as we start to see the effects of climate change taking shape, including here in Norfolk¹. Heatwaves and warm summers are now significantly more likely than a few decades ago. 2022 was the UK's warmest year since records began, and the ten warmest years have all occurred since 2003. Looking ahead, the heatwaves and drought conditions experienced in 2022 may become more like normal summer conditions by the middle of this century. We need to be prepared for more damage to homes and habitats from wildfire, further strain on our water resources, and the impacts on the health of vulnerable groups such as the young and elderly.

Climate change is also visible in rising sea levels. Since the 1981-2000 period, sea levels have risen by around 6.5 cm and are estimated to keep rising at 2.5 cm per decade. These changes will accelerate the coastal erosion being seen on parts of the Norfolk coast and raise the risks of flooding in low-lying areas during heavy storms. As well as affecting local communities and businesses, these impacts threaten our unique and sensitive habitats such as the Norfolk Broads and coastal marshes.

At the same time, the UK's net zero transition represents a real opportunity for Norfolk. In tandem with the drive to level-up regions, making our economy fit for a net zero future can bring a boost for businesses and jobs locally. Low carbon technologies and ways of working are quickly becoming the major drivers of growth nation-wide. It is vital that we try and capture this within Norfolk. Moreover, taking steps to tackle climate change is not simply about cutting carbon. It is also about making sure we have clean air in our towns and cities, accessible green spaces to enjoy, and warm, comfortable homes to live in. In this way, our work to tackle climate change serves to support the council's overarching strategic priorities set out in [Better Together, for Norfolk](#).

While some impacts are now unavoidable, taking action now to cut carbon emissions can contribute to ensuring the extent climate change affects us

¹ Data and projections in this section are from: [Independent Assessment of UK Climate Risk - Climate Change Committee \(theccc.org.uk\)](#)

in the future is more limited. Creating a climate-resilient Norfolk therefore means both embracing clean growth and adapting to the effects of climate change. Both of these endeavours need to be done in a way that ensures we keep focus on delivering high quality local services and being responsible in our use of public money towards local priorities. Taking these steps can ensure Norfolk remains a special place where current and future generations can flourish.

This document sets out a strategic framework for the way Norfolk County Council is tackling climate change locally and building resilience to its effects. It sets out seven focus areas around which our activities will be organised. In doing so, it provides a realistic appraisal of what we as a council can address and the levers at our disposal. The seven focus areas of this strategy and the main priorities for each are set out in turn below.

Focus area 1: Our estate

Focus area 1 addresses our commitment to make our estate net zero by 2030. Our estate emissions include those from our buildings, streetlights and vehicle fleet. Significant progress has already been made, with our estate emissions having reduced by just over half since 2016/17 from 21,049 tonnes of carbon dioxide equivalent (tCO₂e) to 10,434 tCO₂e in 2021/22. We have worked hard to make our buildings smarter in how they use energy and converted two-thirds of our streetlights to energy efficient LED technology.

Further actions are required to sustain this momentum: we will be converting the remaining streetlights to LED; we are transitioning our vehicle fleet to electric wherever practical; and, significantly, we are undertaking a comprehensive programme of decarbonisation works on our buildings. To ensure we stay on track we are setting ambitious interim targets as stepping stones towards achieving a net zero estate in 2030. These include achieving a 66% reduction in emissions by 2024/25 relative to 2016/17, and an 85% reduction by 2028/29 relative to the same baseline. Hitting these will enable us to achieve a 90% reduction by 2030/31, with offsets in place for our remaining emissions.

Focus area 2: Indirect emissions

Our indirect (also known as 'scope 3') emissions represent our organisation's wider carbon footprint that we have influence over but which is outside of our direct control. This includes the carbon resulting from our supply chain, the companies we own, the buildings we lease, and staff travel, among other aspects.

The Carbon Trust estimated that our scope 3 emissions were over 475,000 tCO₂e in 2020/21. To put this into context, it is equivalent to around 7%



of Norfolk's total carbon footprint. Over three-quarters of this relates to the £900 million the council spends each year on works, goods and services. Therefore, procurement is a key lever for achieving large carbon reductions through influencing our supply chain.

We are already taking steps towards using our procurement to bring about carbon reductions, such as requiring our major suppliers to have carbon reduction plans in place. Our priority will be putting in place plans for each of our key procurement categories on how to achieve carbon reduction in our supply chain while maintaining a healthy and competitive supplier market.

Focus area 3: County-wide emissions

This focus area steps back to address the bigger picture of how the council can support county-wide carbon reduction. The UK's independent Climate Change Committee (CCC) notes that local authorities can influence around a third of an area's emissions through

place-shaping activities and their wider leadership role. The scale of potential influence here is much greater than our estate and scope 3 emissions. However, the degree of control we have over these wider emissions is more limited, and the CCC do not see it as appropriate for local authorities to set sectoral carbon budgets for their areas².

We aim to take a pragmatic approach to supporting carbon reduction county-wide by prioritising the areas where we have the greatest opportunity to make positive change. This focus area covers the following thematic areas:

- Transport
- Building and planning
- Commercial and industrial sector
- Energy
- Digital solutions and connectivity
- Waste and the circular economy

Our work on transport is worth highlighting here. Being a large, rural county means that a good road network is vital for connecting Norfolk's communities and businesses. However, transport also represents nearly a quarter of Norfolk's carbon footprint, so we need to ensure that we keep Norfolk connected while supporting decarbonisation of this sector.

There are three dimensions to our approach to decarbonising Norfolk's transport: supporting the switch to electric vehicles, improving the county's public transport, and encouraging more sustainable and active travel. We are working hard to lever in government funding, with recent success in securing money to:

- Bring 70 fully electric buses to Norwich in 2024 in partnership with First Bus, with Roundtree Way bus depot becoming one of the first fully electric bus depots outside of London;
- Install over 125 chargepoints in both rural and urban parts of Norfolk;
- Create Local Cycling and Walking Infrastructure Plans that cover the whole county.

Norfolk faces challenges in terms of inadequate affordable housing, low-paid jobs, and insufficient infrastructure. The county needs investment in digital connectivity, utilities, and transport infrastructure to enable businesses and communities to thrive. The council will promote investments that support sustainable housing and economic

² [Local Authorities and the Sixth Carbon Budget - Climate Change Committee \(theccc.org.uk\) \(page 47\)](#)

growth plans, provide physical and digital access to education and employment, and reduce traffic and pollution in town centres. The challenge – which we accept - will be to minimise the carbon footprint in construction, promote biodiversity net gain and adopt technology and design that reflects progressive thinking and mitigates climate change impacts.

Focus area 4: Promoting a green economy

It is vital that Norfolk grasps the opportunities for jobs and business growth that the transition to a green economy will offer.

Government policies and more affordable technologies will drive demand for low carbon goods and services over the coming years. A workforce will be needed to match this: our buildings will need to be retrofitted, our heat pumps will need to be serviced, our renewable energy network will need to be maintained, green technologies need to be manufactured, and our land will need to be managed for the environment and food. It is estimated that there could be 700,000 jobs in England's low-carbon and renewable energy economy by 2030 and more than 1.2 million by 2050.

Norfolk's position as the emerging clean energy powerhouse of Britain is just one example of the huge potential of the green economy for the county. In March this year, the energy company Vattenfall announced they were creating around 130 quality 'green-collar' jobs in Great Yarmouth. The new Operations and Maintenance Campus, which was commissioned by Norfolk County Council, was chosen by Vattenfall as the support hub for their Norfolk Offshore Wind Zone. Acting now can mean securing quality jobs like these jobs for Norfolk.

Our strategic priority here is to help Norfolk to get equipped with the skills to harness the opportunities of the green economy.

Focus area 5: Adapting to climate change

As outlined earlier, we are already starting to feel the impacts of climate change and the risks to Norfolk's communities and natural places are set to intensify over the coming decades. As a council, we must ensure that the vital local services that we provide are resilient in the face of climate hazards, and that we support the resilience of Norfolk's communities to the risks brought by coastal and inland flooding and extreme heat among others.

It is important that the actions and investments we make in adapting to climate change are evidence-based. We are fortunate in Norfolk to be home to world leading expertise on this issue at the [Tyndall Centre for Climate Change Research](#) at the University of East Anglia. A strategic

priority of this focus area is to work with the Tyndall Centre to better understand the risks of climate change impacts on Norfolk and the potential adaptation responses.

We must also recognise that many of the resources and powers to undertake local adaptation lie with other government bodies. Building on a solid evidence base through our work with the Tyndall Centre, we will be the voice of Norfolk residents to government bodies like the Environment Agency on securing appropriate investment on adaptation across the county.

Focus area 6: Space for nature to recover and grow

Norfolk is a county of diverse and unique landscapes, some of which are recognised as internationally important wildlife havens. The natural environment also provides invaluable services for people, including water and air purification, flood protection, recreation opportunities, and carbon storage in soil and vegetation. These 'ecosystem services' are a vital component of climate change mitigation and adaptation in the county.

However, the county is not immune to the pressures facing the natural environment. The data of the decline in biodiversity in the UK is a sobering indicator of this. Since 1970, an estimated 41% of UK species have decreased in abundance, and 15% are threatened with extinction³. Helping nature to recover has become a national policy priority, with a nation-wide [25 Year Environment Plan](#) published in 2018.

We are the responsible authority for producing a Local Nature Recovery Strategy (LNRS) for Norfolk, which will map important habitats across the county to be conserved, restored and connected as part of addressing national-scale environmental objectives. Through using our position here as the link between national and local environmental priorities, our strategic priority is to deliver an LNRS that will facilitate action to build the resilience of Norfolk's natural environment while harnessing its potential for storing carbon and managing flood risk.

Focus area 7: Engage and Collaborate

Cutting across all the other focus areas is the need to for engagement and collaboration. As mentioned, local authorities can influence around a third of emissions in their areas, but this reach cannot be achieved through working in isolation. It requires us to use our position to bring together the businesses, academic, public and community and voluntary sectors towards delivering the right changes for Norfolk.

³ [State of Nature 2019 Reports - National Biodiversity Network \(nbn.org.uk\)](#)

A priority here is working effectively through the Norfolk Climate Change Partnership. This is a forum for collaboration between Norfolk's county, borough and city local authority partners along with the Broads Authority to align efforts on tackling climate change. The partnership's three priority areas are on identifying pathways towards decarbonising the local energy system, retrofitting the county's buildings, and enabling sustainable transport choices.

However, it is imperative that we reach out beyond the public sector and not simply be a government funding conduit. A far bigger impact can be achieved through leveraging in private investment towards clean growth for Norfolk. For this reason, we facilitated the creation of the Norfolk Investment Framework. This sets out high-level investment priorities for the county, with climate resilience specifically identified. Priorities relating to local skills development and business growth are also closely related due to the opportunities of the green economy. This framework and the pilot projects it supports are initial steps towards de-risking larger private investments in line with the needs of Norfolk's residents and businesses.



Photo credit: Beryl





▶ Introduction

A Climate-Resilient Norfolk

The scientific evidence shows beyond doubt that our climate is changing as a direct result of human activity.

Around the world, communities are already feeling the impacts of climate change with rising sea levels, severe flooding and unprecedented heat waves. Changes to the Earth's climate are also closely linked to a decline in biodiversity as nature struggles to adapt. These impacts are only expected to become more severe as climate change intensifies.

Governments, businesses, and individuals across the world are now stepping up to the need to take action on climate change. The UK has

shown positive leadership here by setting the ambitious national target of reaching net zero by 2050. Norfolk is already playing a central role in powering this ambition through tapping into its abundant offshore wind as a pivotal clean energy supply.

As the upper-tier local authority for the county, Norfolk County Council (NCC) is well placed to support action on climate change in a way that is tailored to Norfolk's particular characteristics and strengths.

This will involve stepping up to the challenges of cutting carbon, harnessing the opportunities for green jobs and business, helping nature to thrive, and supporting Norfolk to adapt to the impacts of a changing climate.

Taking this action now can help ensure that Norfolk continues to be a special place where current and future generations can flourish.

Purpose of this strategy

This document provides a clear statement of NCC's strategic framework to help tackle climate change. It describes how we aim to meet our commitment to reach net zero across our estate by 2030, and how we will continue to work with our partners to work towards a carbon neutral Norfolk.

We also highlight how we will address other interlinking issues that need to be dealt with in a holistic manner, particularly the decline in biodiversity, as Norfolk adapts to a changing climate.

Our priorities and targets are set out across seven key focus areas, outlining our current progress and next steps in their delivery.

Strategy Objectives

- 1.** Outline how we will deliver on our target to meet Net Zero across our estates.
- 2.** Inform Norfolk's residents, our staff, partners and local businesses of the action NCC is taking to tackle climate change across Norfolk.
- 3.** Help guide our action in the coming years on our journey to net zero and adapting services to address the impacts of climate change.



▶ **Climate change in brief**

What is climate change?

Climate change refers to the changes in global weather patterns driven by global warming. The scientific evidence is clear that human activities are driving this.

Greenhouse gases are gases in the Earth's atmosphere that trap heat. When energy from sunlight reaches the Earth, much of it is absorbed by land or the oceans, heating the surface. Over time, the heated surface releases this energy. Some of it is absorbed by greenhouse gases, preventing it from leaving the atmosphere, a bit like a greenhouse.

This greenhouse gas effect is vital for giving Earth a habitable climate for life to flourish. However, since the Industrial Revolution, humans have released huge amounts of greenhouse gases into the atmosphere by burning fossil fuels such as coal, oil and gas to power our homes, factories and transport. The rapid increase in the amount of greenhouse gases in the atmosphere has intensified the naturally occurring greenhouse gas effect, trapping more heat than would naturally be the case. This is leading to global warming and causing a shift in weather patterns, which we term climate change.

Carbon dioxide (CO₂) is the most significant greenhouse gas as it is emitted in greatest quantity by human activity and remains in the atmosphere for hundreds of years. Other greenhouse gases that contribute to climate change include methane and nitrous oxide.

The terms 'carbon' and 'greenhouse gases' are often used interchangeably even if they are not exactly equivalent. To simplify measurement and reporting, the impact of these greenhouse gas emissions is measured together as carbon dioxide equivalent (CO₂e).

Global impacts of climate change

The International Panel on Climate Change (IPCC) estimates that human activities have caused 1.0°C of global warming since pre-industrial times and this is likely to reach 1.5 °C between 2030 and 2052.

While this does not sound like a big change, even small changes to global temperatures bring big shifts in weather patterns with significant impacts for people and nature. These include⁴:

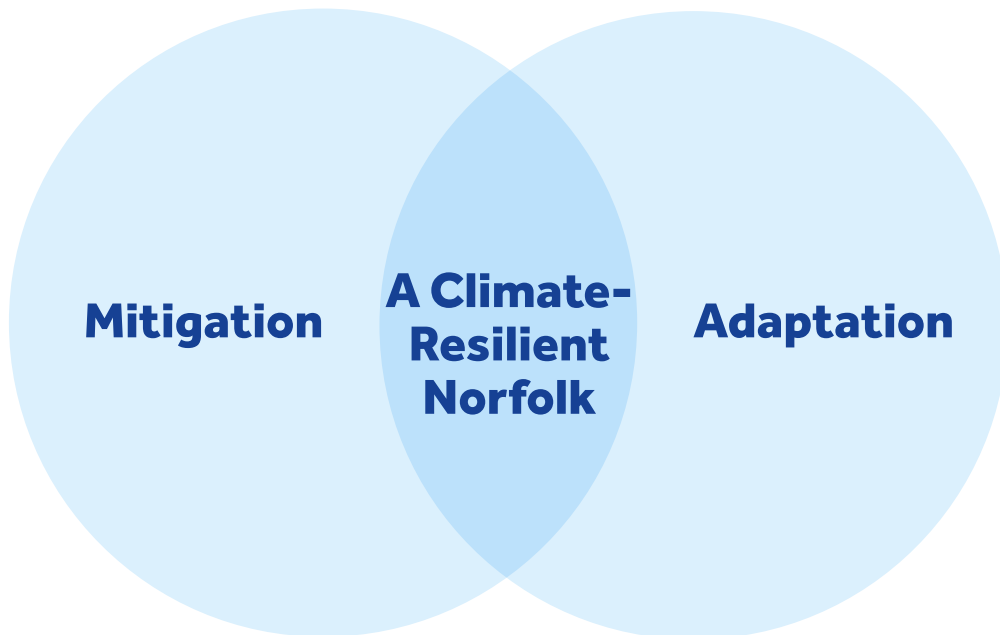
- Global sea-level has risen by about 20cm since the start of the 20th century, putting strain on coastal communities
- The last six years have been the six warmest on record globally. This has led to more frequent heatwaves, droughts and wildfires in most regions
- Extreme rainfall and related flooding has intensified, bringing damage to homes and infrastructure
- Climate change is leading to increasingly irreversible losses in terrestrial, freshwater and marine ecosystems.

As well as these more general impacts, the effects of climate change on weather patterns in the UK and Norfolk are becoming increasingly visible. These are summarised in the following pages.

⁴ [IPCC_AR6_WGII_SummaryForPolicymakers.pdf](#)

Responding to climate change

As illustrated in the diagram, effective response to climate change requires the coordination of two approaches: climate mitigation and climate adaptation.



Climate mitigation

Climate mitigation includes actions to reduce the emissions of greenhouse gases which drive climate change. Climate mitigation is needed to ultimately limit the scale of impacts that Norfolk and the rest of the world will experience.

In practice, climate mitigation can include generating energy from renewable sources rather than coal or gas; improving the energy efficiency of buildings; replacing petrol or diesel transport with electric alternatives; and planting trees and preserving forests so they can absorb and store carbon dioxide from the atmosphere.

Climate adaptation

Climate adaptation involves adjusting to the actual or expected changes in climate. These are necessary actions to help manage the risks that come with the impacts of climate change, even if we manage to rapidly reduce emissions.

Adaptation can include disaster management and business continuity plans, flood protection, habitat and species management, increasing shading in urban areas, and the enhancement of green infrastructure.



▶ The UK response

Climate mitigation

In 2015, nearly 200 governments from around the world signed the Paris Agreement. This recognised the need to accelerate actions and investment to combat climate change. A legally binding target was set by signatories to “limit global warming to well below 2, preferably 1.5 degrees Celsius, compared to pre-industrial levels”.

In 2019, the UK took the bold step to become the first major economy to bring net zero into law, with a commitment to reduce its greenhouse gas emissions to net zero by 2050.



International

Keep global temperature rise to below 2°C, preferably 1.5°C



National

Achieve Net Zero by the year 2050

What is net zero?

Net zero refers to not adding to the level of greenhouse gases in the atmosphere. There are two sides to this: reducing greenhouse gas emissions as much as possible as a priority, and then balancing out any remaining by removing an equivalent amount from the atmosphere (what is known as 'offsetting').

Carbon budgets

As part of the UK's 2008 Climate Change Act, the government is required to set legally binding carbon budgets. Each budget provides a five-year cap on total greenhouse emissions for the UK, to act as stepping-stones towards the national 2050 target.

The budgets are designed to reflect a cost-effective way of achieving the UK's long-term climate change objectives. Once a carbon budget has been set, the Climate Change Act places an obligation on the government to prepare policies to ensure the budget is met.

Climate adaptation

Climate adaptation is the set of actions taken in response to the actual or expected effects of climate change.

The Climate Change Act 2008 requires the government to produce a UK Climate Change Risk Assessment to identify risks and opportunities facing the UK from climate change. This must be followed by a National Adaptation Programme (NAP) setting out the actions that central government and others will take to adapt to the challenges of climate change in England over a five-year period.

The most recent NAP runs from 2018 – 2023 and covers:

- The natural environment
- Infrastructure
- People and the built environment
- Business and industry
- Local government.

▶ Impacts of climate change on the UK and Norfolk

A changing climate for Norfolk

As global emissions rise, changes in aspects of the UK's and Norfolk's weather patterns and sea levels are already being seen, including the following:

Warmer average temperatures

Average temperatures in the UK have increased by around 0.6°C since the 1981-2000 period. This may seem like a relatively small change, but the UK's top 10 warmest years on record have now occurred since 2003 and the daily maximum temperature record broke 40°C for the first time in 2022, far sooner than had been anticipated.

Rising sea levels

Globally, sea levels have risen by 20cm since the start of the 20th century. Sea levels around the UK have risen by about 6.5cm since 1981-2000 and are currently rising by around 2.5cm per decade.



Future projections

Due to the emissions already 'locked in' to the atmosphere, the UK's climate will continue to change as global temperatures increase. The projected changes include⁵:

Warmer and wetter winters

By 2050 the UK's average winter could be around 1°C warmer than it was over 1981-2000 and around 5% wetter with higher intensity of winter rainfall.

Hotter summers with frequent heatwaves

An average summer could be around 1.5°C warmer than it was on average over 1981-2000 and around 10% drier by 2050. A summer as hot and dry as 2022 could occur every other year.

Continued sea level rise

The seas around the UK will continue to rise over the next three decades to 2050. By 2050 sea levels could be up to 10 - 30cm higher than over 1981-2000, and well over 50cm higher by 2100.

Impacts of climate change

Norfolk is a county of diverse and unique landscapes, but its geographical features also leave it vulnerable to the effects of climate change.

Natural environment

Climate change presents a significant threat to Norfolk's unique and sensitive habitats. The county's wetlands and freshwater habitats are especially vulnerable to higher frequency and severity of droughts, as well as the saltwater ingress and pollution pressures that come with rising sea levels and storm surges. While increased temperatures may benefit some fauna and flora, many species will struggle to adapt to the rapid changes in their environment. And high temperatures combined with periods of drought over the summer months have already increased the risk of wildfires that threaten local wildlife populations.

Health and well-being

There is a strong association between periods of extreme heat increases in illness and excess mortality. Vulnerable groups such as the very young, disabled and elderly are disproportionately affected here. This is revealed in the effects of the heat waves of summer 2022. Over 3,000 excess deaths were recorded compared to the five-year average, of which 2,800 were those aged 65 years and over⁶.

⁵ [Data and projections presented in this section are from: Independent Assessment of UK Climate Risk - Climate Change Committee \(theccc.org.uk\)](#)

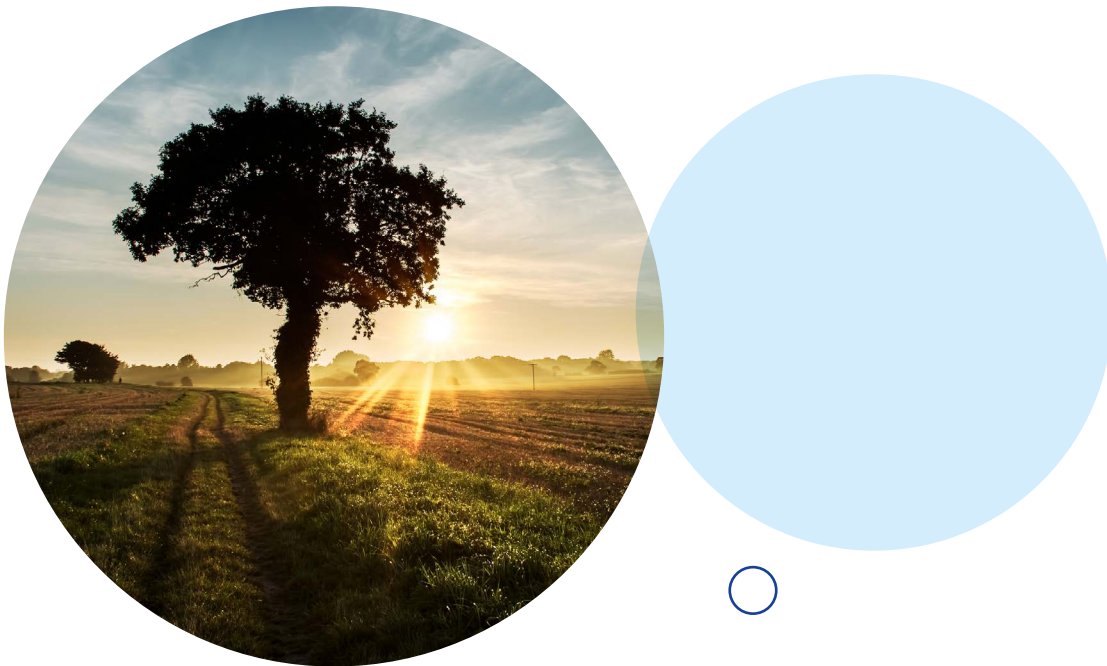
⁶ [Excess mortality during heat-periods - Office for National Statistics \(ons.gov.uk\)](#)

Economy

Norfolk has a proud agricultural tradition as a key food producing part of the country. Our farmers and fishing industry are experiencing - more directly than most - the changing weather patterns associated with climate change. Seasonal rainfall is less reliable and extremes of both temperature and rainfall bring greater risk of crop failure and livestock stress.

Our tourism industry is responsible for 18% of Norfolk jobs, but the natural assets most at risk – landscape, biodiversity, beaches and the Broads – are a particular part of the county's attractiveness to visitors.

For the UK as a whole, climate damages are estimated to cost 1 - 3% of GDP by 2050. However, some coastal and low-lying parts of Norfolk can expect climate damages to cost as much as 7 or 8% of local GDP⁸. Coastal erosion, inland flooding and extreme temperatures bring costly damage to the county's infrastructure and building assets. Repairing roads, footpaths and electricity lines brings significant public cost, and Norfolk's communities and businesses face the costs from the disruption and damage to buildings and other assets.



⁷ [What will climate change cost the UK? Risks, impacts and mitigation for the net-zero transition - Grantham Research Institute on climate change and the environment \(lse.ac.uk\)](#)

⁸ [ibid](#)

▶ Our commitment to tackling climate change

Our net zero ambition

We recognise the need to take urgent action to meet this collective global challenge. Many of the changes and decisions which are needed to reduce emissions and build climate resilience across the country have a strong local dimension. As the upper-tier local authority for Norfolk, we want to be at the heart of the climate conversation through showing local leadership, building partnerships and finding solutions that reflect Norfolk's particular characteristics and priorities. In 2019, we set two ambitious targets in support of the UK's wider climate action: to achieve net zero carbon emissions on our estates by 2030; and to work closely, with regional partners, towards carbon neutrality within our wider areas by 2030.

1. To achieve net zero carbon emission on our estates by 2030
2. To work collectively, with regional partners, towards carbon neutrality within our wider areas, also by 2030

Our target to achieve net zero on our estates relates to the emissions resulting from the operation of our buildings and streetlighting across Norfolk and from our vehicle fleet. We can also support emission reduction beyond our own operations and assets. Our target to work towards carbon neutrality within the wider area recognises our enabling role, whilst acknowledging the need for effective collaboration to drive substantive change. As the role of local authorities in the national net zero 2050 commitment has yet to be clearly set out by Government, this strategy represents our own work in bringing together the varied ways we can employ our powers and influence towards a green future.

The UK100 Network

In 2022, we became a member of the UK100 Network. This is a group of local government leaders across the country sharing knowledge, collaborating, and petitioning the UK government with their collective voice on net zero. As member, we have pledged to: "do everything within our power and influence to rapidly reduce our greenhouse gas emissions". This recognises that local authorities do not necessarily have all the powers yet to reach their ambitious net zero targets but can share best practice with each other in learning forums that the UK100 facilitates.



▶ **What we can influence**

Climate change is a major challenge. We recognise that addressing a task of this scale cannot be achieved by one organisation in isolation: it will require significant coordination and collaboration across sectors.

We aim to take a pragmatic approach to addressing climate change by prioritising areas where we have the greatest opportunity to make positive change.

However, as a county council we only have direct control over a small proportion of Norfolk's territorial emissions. The diagram highlights that the council's ability to control emissions reduces as we move further away from our own operations, whilst the scale of emissions is greater.

That said, we can use our statutory powers, convening ability and our leadership role across Norfolk to bring together our partners, businesses, and our community to facilitate climate action for Norfolk.

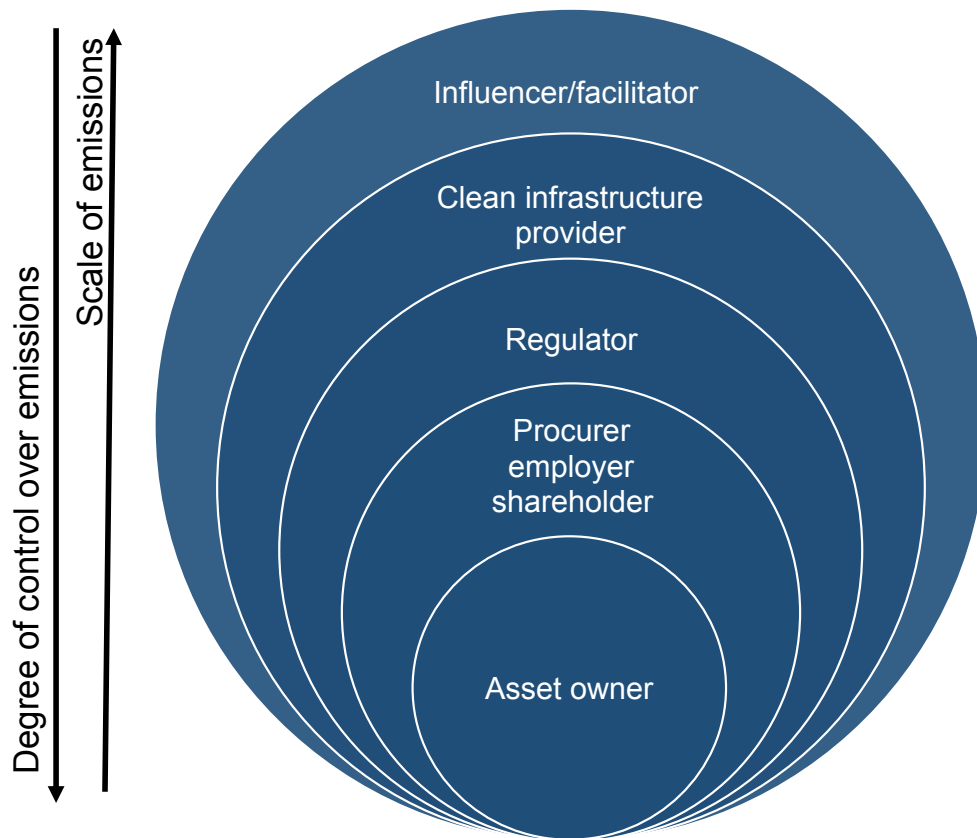
As an asset owner we can directly influence the emissions arising from the buildings we own and the vehicles we operate.

As a procurer, employer and shareholder we can create a carbon conscious culture within the council to facilitate behaviour change across our employees. Procurement is a key lever for climate action through influencing our supply chain.

As a regulator we are the responsible planning authority for waste and minerals; we are also responsible for trading standards.

As a clean infrastructure provider we can help facilitate a transition to more sustainable modes of transport such as active travel and the use of public transport. We can invest in woodland and biodiversity.

As an influencer and facilitator we can provide an enabling and communications role, engaging communities, public sector and business partners in area-wide conversations about climate change, the route to net zero and nature recovery for Norfolk.



Our strategic approach

We have identified seven key focus areas to prioritise our climate action. Our approach to each of these areas will be individually covered in this strategy.

1) Reduce our estate emissions

We have a commitment to make the council's estate net zero by 2030. This means leading by example through addressing the emissions of our buildings, streetlights and vehicles.

2) Reduce our indirect emissions

Using our influence as a procurer and shareholder, we will help drive carbon emission reductions across our supply chain and the companies we own.

3) Address Norfolk's county-wide emissions

In delivering our statutory responsibilities and duties, we will play a pivotal role in mitigating and adapting against climate change for the wider Norfolk area, identifying and implementing change that makes the biggest impact across the county.

4) Promoting a green economy

We will seek to catalyse Norfolk's private sector to be an engine for green, inclusive growth. This means working in partnership to promote jobs and business growth that harness the opportunities of a low carbon future.

5) Ensure that nature has space to recover and grow

We will use our position in the county to show leadership in ensuring bigger, better and more joined up spaces for nature. We will support better land management to increase biodiversity and co-ordinate efforts to allow nature to recover.

6) Climate adaptation

As a council we need to ensure that the essential services we deliver are resilient to the impacts of climate change, and we will work with partners to support the wider resilience of Norfolk's citizens and businesses.

7) Engagement and collaboration

We will prioritise collaborative engagement with key public, private and community stakeholders to draw on shared expertise and make delivery more efficient and cost effective.

► Policy and strategy alignment

Policy alignment

In developing this strategy we have ensured its alignment with our corporate strategic goals.

Better Together, for Norfolk

Our corporate strategy, [Better Together, for Norfolk \(BTfN\)](#), sets out the council's vision and ambition for Norfolk for 2021 – 2025. Delivery of this Climate Strategy will support the delivery of strategic objectives outlined in BTfN:

- Work to reduce our impact on the environment
- Level up our economy, building the skills that meet the needs of green, high-value and transformational businesses
- Accelerate infrastructure that supports clean growth, sustainable housing, electric vehicle charging and the decarbonisation of transport, enabling businesses and people to make choices which build climate resilience.
- Improve social mobility through inclusive growth
- Improve access to our natural and cultural landscapes, encouraging residents to use green spaces and cultural assets.
- Enhance Norfolk's natural environment by protecting its rich biodiversity and promoting the efficient use of natural resources.

Environmental Policy

In 2019, we published our [Environmental Policy](#). The policy reflects the areas that are key to protecting and maintaining the health of our distinctive environment and our residents.

The policy sets out activity across a range of areas, including those where the council has statutory environmental responsibilities. The policy objectives outlined in our Environmental Policy are reflected in this Climate Strategy.

Other NCC policies

The ambitions and priorities set out in this strategy are reflected across a number of other council policies and strategies.

This includes the:

- [Local Transport Plan](#)
 - [Electric Vehicle Strategy](#)
 - [Safe Sustainable Development Strategy](#)
 - [Norfolk Rural Economic Strategy](#)
-

Stakeholder strategies

Climate action requires significant collaboration with our stakeholders and partners. Our Climate Strategy has been developed in line with stakeholder plans and strategies, including:

- The Integrated Care System [Green Plan](#)
- The Broads Authority [Climate Adaptation Plan](#)
- The Visit East of England [Destination Development Plan](#)
- Arts Council England – [Let's Create](#)

The [Norfolk Climate Change Partnership](#) has set three areas it wishes to focus on: energy, retrofit and transport. This strategy aligns well with those priorities.

In developing the Norfolk Investment Framework, with which this strategy is aligned, the council built a comprehensive evidence base. The framework was developed with private, public and voluntary sector organisations, who recognise the need to work together and address the climate change challenge.



▶ Governance and reporting

Governance

The implementation of this Climate Strategy will be a council-wide effort requiring engagement from a range of internal groups and public committees to govern the effective delivery of its ambitions. These include the following:

Officer Groups

- **Net Zero Board**

Chaired by the Head of Paid Service, the Net Zero Board meets bi-monthly for the Executive Directors (the council's most senior officers) to review progress and provide a steer towards achieving our net zero commitments

Councillor Groups

- **Cabinet**

Exercises executive functions and establishes appropriate arrangements for the delivery of cross-cutting functions

- **Corporate Select Committee**

Supports the Cabinet and Council in ensuring good governance in how the council deploys its resources and assets

- **Infrastructure & Development Committee**

Supports the Cabinet and Council in its work on transport, environmental services and growing the economy

- **Member Oversight Group for the Environment**

Group of both members and senior officers whose purpose is to monitor the progress being made on the council's Environmental Policy

Emissions reporting

We have published an [Emissions Dashboard](#) on the Norfolk County Council website to provide a clear view of the council's emissions and progress towards its commitment to a net zero estate by 2030. This will continue to be updated as data becomes available each year.

County-wide data reporting can be found on the [Norfolk Insight](#) website. The Environment Report for Norfolk highlights key carbon emission drivers for Norfolk and provides insight into energy demand for the county.



▶ Funding climate action

The funding context

Funding is a critical issue for enabling local authority work on net zero and must be considered in the context of mounting pressures on local authority finances and the obligation to deliver a balanced budget.

There is not yet a framework of expectations about the role of local government in achieving the national net zero target. At present, local authorities' role here does not have a statutory basis, and therefore tackling climate change must be considered on top of meeting core statutory responsibilities. Our core settlement funding from government is yet to explicitly consider the costs of tackling climate change, and this money must be prioritised on delivering the vital local services which we have a statutory responsibility for. Furthermore, demand for our services is outpacing funding growth, and the current inflationary pressures adds further strain to do more with less. Dedicated, long-term funding for tackling climate change at the local level would help us take a strategic approach to invest in local priorities and use this to draw in further private investment.

Grant funding

Outside of core settlement funding, there is a growing pot of dedicated grant funding for net zero related activities from central government which local authorities can bid for. We have had success here in securing money through these grant competitions for our work in Norfolk. This money is welcome, but it is difficult to plan for given its competitive nature, and often comes with short timescales for application and delivery.

We have secured grant funding from the Department for Transport as well as other government bodies for significant investment in walking, cycling and passenger transport improvements, and electric chargepoint infrastructure, with recent examples including:

- £38.1m of capital funding for improving sustainable transport infrastructure in Norwich through [two tranches of the Transforming Cities fund](#). This has included improvements to junctions, new bus and cycle lanes, improvements to Norwich Bus Station and the introduction of the Beryl bike and e-scooter scheme;
- £49.6m funding to deliver [Norfolk's Bus Service Improvement Plan](#) (of which £30.9m is for capital projects). This will improve bus infrastructure across the county as well as support measures to encourage higher ridership;
- £14.7m through the [Zero Emission Bus Regional Area \(ZEBRA\) scheme](#) matched by £21m of local investment from First Bus. This will bring 70 electric buses to Norwich in 2024 and First's Roundtree Way bus depot will become one of the first fully electric bus depots outside London;
- Nearly £2.5m worth of grants through the [Active Travel Fund tranches 1 and 2](#) (of which £2.2m for capital). These are funding projects to encourage cycling and walking through infrastructure improvements and community engagement;
- £0.17m through the Department for Environment, Food and Rural Affairs' ([Defra's Air Quality Grant](#)) to bring an [e-cargo bike library to Norwich](#) to support zero carbon logistics in the city centre;
- [£1.6m capital grant through the Local Electric Vehicle Infrastructure \(LEVI\) scheme](#), which could bring around 90 chargepoints to rural parts of Norfolk that are popular tourist destinations.

The Norfolk Investment Framework

The council has established the [Norfolk Investment Framework \(NIF\)](#), to allow Norfolk to self-determine long-term investment priorities and ensure the collective benefits of those investments are shared by all residents.

The NIF seeks to drive growth in the county over the medium to long term. The framework has been created in response to a number of factors, including the Government's [Levelling Up White Paper](#), which aims to boost productivity, pay, jobs and living standards by growing the private sector, and spread opportunities and improve public services, especially in those places where they are weakest.

Created in consultation with over fifty stakeholder organisations, across public, private and voluntary sector, the framework provides an evidence base for the design of future large-scale projects and investment.

Based on this detailed data and analysis, the framework itself is a set of high-level investment priorities designed to tackle four 'grand challenges' that Norfolk faces:

- 1.** To create new opportunities for Norfolk's residents by increasing skills and labour market dynamism
- 2.** To provide effective and efficient public services to a spatially-dispersed population
- 3.** To strengthen and future-proof business clusters, to grow the economy
- 4.** To protect Norfolk's economic and natural assets from climate change.

Thematic objectives for the 'climate change grand challenge' include:

- to mitigate constraints imposed on Norfolk's economy by climate change (such as circular systems for water and energy re-use)
- to reduce the costs and maximise the opportunities of the transition to net zero (such as initiatives to help Norfolk to transition to net zero, and support to build net zero businesses).

With the Framework in place, the council will work in partnership with stakeholders to deliver pilot projects that address the grand challenges.

Norfolk County Deal

As part of the government's levelling up mission to strengthen local leadership, Norfolk County Council and the government entered into a [devolution deal](#) to provide powers and funding to Norfolk. As part of this deal, the council will decide whether to adopt a governance model with a directly elected leader. If this goes ahead, a directly elected leader will be elected in May 2024. Elements of the deal, such as the transfer of new powers, require parliamentary approval through secondary legislation. The decisions to be made will be informed by local consultation.

Devolution for counties offers significant opportunities for the County Council to raise its ambitions and work with its partners to scale up activity around housing, integrated transport and net zero initiatives.

The deal is the beginning of a journey with government and offers another lever through which to achieve change. In developing our strategy, we will be mindful of the opportunities that the current deal presents, as well as those areas of future opportunity that could inform further devolution deals and deliver significant benefit to the council and the county as a whole.

The deal covers a wide range of issues relevant to the climate strategy. It recognises that despite being a significant producer and distributor of clean energy, growth opportunities are significantly constrained due to a lack of distribution capacity. It also recognises that Norfolk is one of the driest counties in the UK, and is experiencing growing pressures on water resources alongside more-intense precipitation and the likelihood of more-frequent flooding.



Funding and influencing opportunities arising from the deal that can support climate adaptation and mitigation include:

- devolving the adult education budget, which will enable to some extent focus on employability in the green economy
- making the county council the lead body for UK Shared Prosperity Funding in Norfolk
- additional revenue funding of £250,000 in both 2023/24 and 2024/25 to accelerate work on the revised local transport plan and implement quantifiable carbon reductions
- support in seeking a new rail partnership with Great British Railways, once established
- with other devolved areas, a meaningful role in planning the future energy system; and
- the County Council assuming the role of heat network zoning coordinator for the county.

In addition, government has recognised the scientific and policy expertise that is based at the UEA and the [Norwich Research Park](#) and has committed to work with departments on the potential for any future relocations of Civil Service roles to Norfolk as part of the levelling up agenda.

Crowd funding platform

From 2023, NCC is planning to deliver a crowdfunding platform. Crowdfunding is a way to support community groups, charities and businesses to grow local projects and enhance nature with extra funding. NCC has pledged a first £75,000 in match funding to support projects in the following programmes: Norfolk Windmills Trust restoration of historic wind and watermills and One Million Trees for Norfolk.

The ambition for both themes is to not only provide funding to support the programmes and increase the amount of funding available to them, but also to encourage added outputs such as creating apprenticeships to address the skills shortages in the region and provide the skills for future work.

The crowdfunding project will launch in 2023 and continue with a 9-month on, 3-month off platform, with the potential to build a pipeline of projects with a positive environmental impact.

▶ Our Council's carbon footprint

We follow the internationally recognised standards set out by the [Greenhouse Gas Protocol](#) in how we categorise the council's emissions.

These are:

- **Scope 1**
Direct emissions from burning fossil fuels such as gas and oil
- **Scope 2**
Indirect emissions relating to purchased electricity
- **Scope 3**
Other indirect emissions up and down the organisation's value chain

Estate emissions

We have committed to lead by example in Norfolk's net zero journey by making our own estate net zero by 2030. Our estate includes our buildings, streetlights and vehicle fleet.

The emissions covered by our estate include all our scope 1 and 2 emissions as well as a small subset of scope 3 emissions such as those related to our water usage.



In 2021/22 our estate emissions were just under 10,500 tCO₂e, which is about half of what they were in 2016/17. This is described in more detail in focus area 1 below.

Indirect emissions

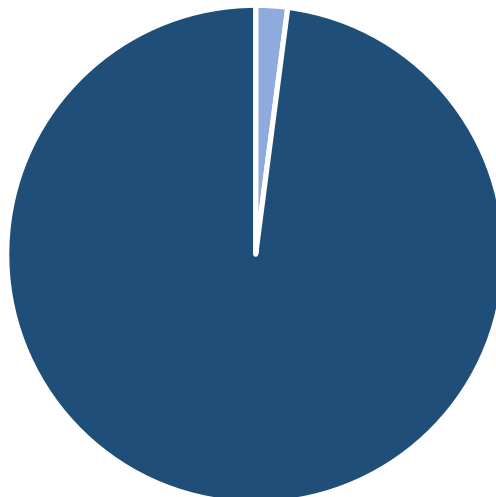
Scope 3 emissions are not produced by the council itself but are an indirect result of the council's activities.

Over 98% of our total scope 3 emissions are estimated to sit within three areas:

1. Purchased works, goods and services (our supply chain)
2. Investments (mainly NCC-owned companies)
3. Leased-out buildings

Scope 3 emissions are harder to address because they are beyond the direct control of the organisation. The organisation is unlikely to have full visibility into the emissions generated by its supply chain, making it harder to quantify and tackle these emissions. This means that reducing scope 3 emissions often requires collaboration with suppliers and other stakeholders. This is described in more detail in focus area 2. Our scope 3 emissions footprint is around 475,000 tCO₂e, which is nearly fifty times greater than that of our estate. This is represented in the figure below.

Our Corporate Emissions



■ Scope 1 and 2 emissions ■ Scope 3 emissions

▶ Norfolk's carbon footprint

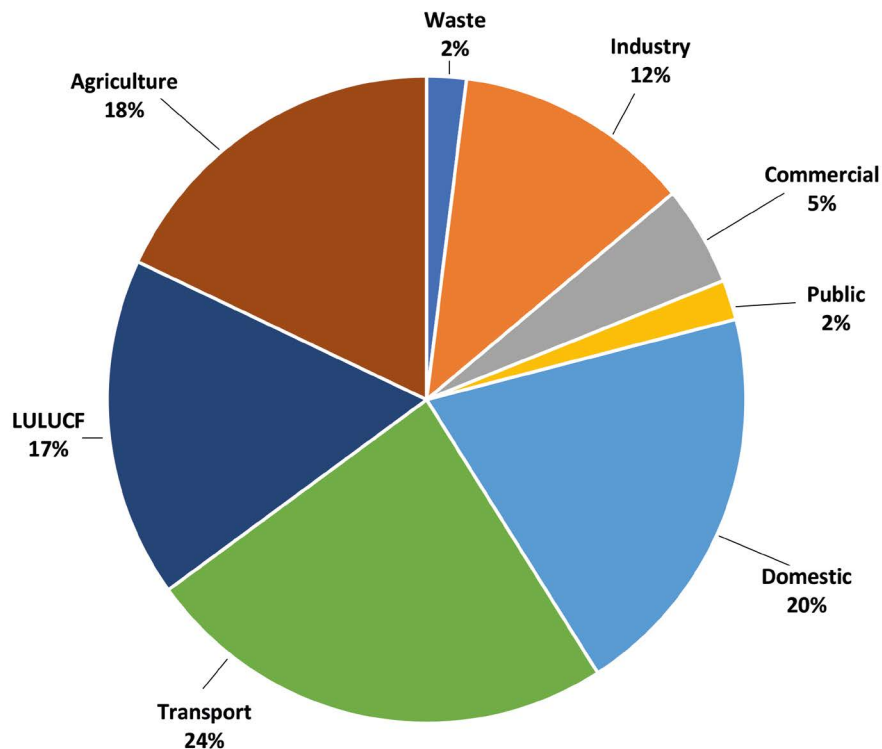
Emissions by sector

The latest data for local area emissions estimates that Norfolk's carbon footprint was 6.5 million tCO₂e in 2020.

Direct emissions are split into eight sectors:

- **Transport:** emissions from fuel use for road transport and railways.
- **Domestic:** emissions from gas use, electricity use and other fuel use from residential properties.
- **Agriculture:** emissions from agricultural activity, primarily livestock, agricultural soils and agricultural machinery.
- **Land use, Land Use Change & Forestry (LULUCF):** emissions from human induced land use such as croplands and settlements, and emissions removed through forest growth and conversion of cropland to grassland.
- **Industry:** emissions resulting from gas use, electricity use and other fuel use in industrial processes.
- **Commercial:** emissions from gas use, electricity use and other fuel use in the commercial sector.
- **Public sector:** emissions from the combustion of fuel across the public sector including government, local authorities, health and schools.
- **Waste sector:** emissions from non-electricity-related processes in the waste management sector.

Understanding the breakdown of Norfolk's carbon footprint by sectors is integral to guiding our climate action. The approximate breakdown for 2020 is set out here⁹.



The biggest sources of emissions across Norfolk are transport and domestic usage, which together make up just under half of Norfolk's total carbon footprint. Agriculture and land use are also highly significant – with agriculture accounting for 2% of the economy but 18% of emissions. Whilst LULUCF is overall a sink in the UK, the peatland soils of West Norfolk in particular make it a significant emitter in Norfolk.

The public sector's scope 1 and scope 2 emissions are only directly responsible for 2% of Norfolk's total emissions. Emissions arising from the council's estate are a small part of this, representing around 0.2% of Norfolk's total.

Whilst getting our own house in order is a priority, this data shows that we must also address the bigger picture, focusing our efforts on reducing emissions across Norfolk's highest emitting sectors.

⁹ [UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2020](#)



Focus area 1:

Reduce our estate emissions

Introduction

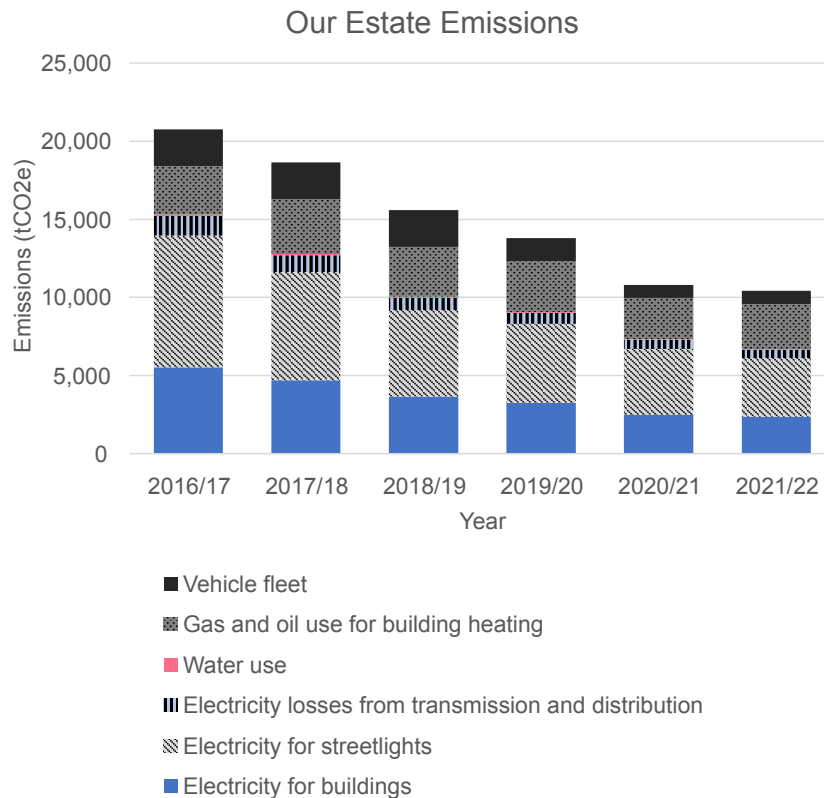
We have committed to lead by example in Norfolk's net zero journey by making our own estate net zero by 2030. Our estate includes our buildings, streetlights and vehicle fleet.

Baseline and trends

Significant progress has already been made here since our baseline year of 2016/17. Between 2016/17 and 2021/22 our estate emissions reduced by half. Key drivers of the downward emissions trend include the conversion of over two-thirds of our streetlights to energy-efficient LED lighting by April 2023, but also substantial reductions in building electricity.

But building heating emissions from our gas and oil boilers have stayed relatively constant since 2016/17. It is vital that we address these emissions if we are to achieve net zero by 2030.

The trends of our estate emissions are shown in the chart below and on [our website](#).



Impact of the Covid-19 pandemic

The Covid-19 pandemic had a significant influence on our estate emissions. Due to lockdown restrictions, many of our staff transitioned to working from home, reducing building occupancy across our estate and reducing commuting and business travel.

Grid decarbonisation

Emissions reductions from electricity sources have also been aided by the decarbonisation of the National Grid. The government's push for all electricity to come from low carbon sources by 2035 will continue to support our carbon reduction efforts.

Strategic priorities

- 1.** Decarbonise and improve the energy efficiency of our council-owned buildings through a comprehensive retrofitting programme
- 2.** Transition towards a low-carbon vehicle fleet and more sustainable modes of transport including e-cargo bikes
- 3.** Upgrade the remainder of NCC's streetlight stock to more energy efficient LEDs to reduce electricity consumption.

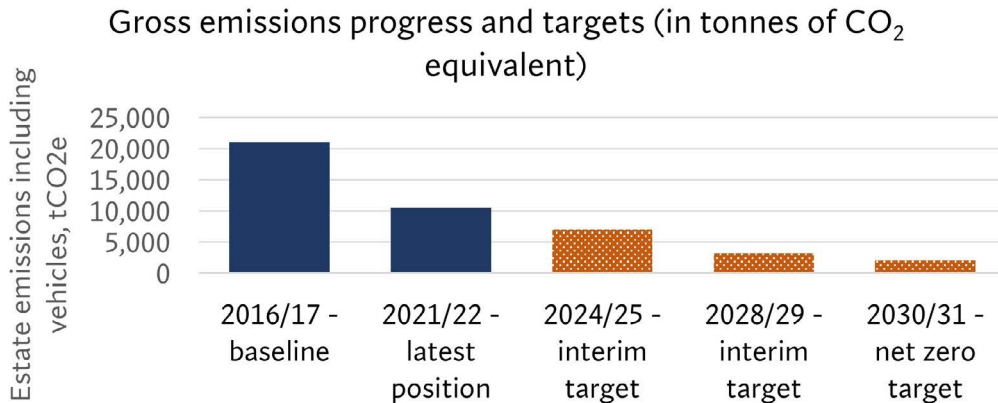


Emission reduction targets

We have direct control over our own estate and operations. Therefore, we can drive these emissions down at a faster rate than any other sector across the county.

To ensure we stay on track towards reaching net zero for our estate by 2030, we are setting ambitious interim targets as stepping-stones towards this. These are outlined in the table below and highlight that by 2030 we will achieve a reduction in our estate emissions by 90% relative to 2016/17, with the remaining emissions being balanced out with high quality offsets. This shows that we are putting carbon reduction front and centre of our approach to hitting net zero by 2030.

Date	Target
2016/2017 baseline	21,049 tCO ₂ e
2024/25	Reduce our gross estate emissions by 66%
2028/29	Reduce our gross estate emissions by 85%
2030/31	Reduce our gross estate emissions by 90%, with suitable, high-quality offsets in place for the remaining emissions to make our estate net zero



Building decarbonisation

The challenge

We own and operate out of 100 sites containing 160 buildings that utilise fossil fuel heating systems.

Addressing the emissions from our buildings, and in particular how we heat them, is the key challenge in meeting our net zero target for our estate. Our approach to building decarbonisation is based on a fabric-first approach. This means focusing first on improving energy efficiency to ensure the transition to low-carbon heating is both resilient and cost effective.

Current progress

Through County Hall's refurbishment programme, energy consumption for the main building and Archive Centre combined has reduced from a peak of 4,100 MWh in 2013/14 to less than 1,000 MWh in 2020/21. This is the equivalent of 570 tCO₂e in annual emission savings.

We have implemented over 100 IoT temperature sensors throughout our property portfolio to identify and remediate problems with heating settings. We will continue to deploy these tactically as required.

On several of our corporate sites, we have removed fossil-fuel based heating systems where they are end-of-life and have replaced them with low-carbon alternatives. There are now over 40 sites with low-carbon electric heating systems.

Since November 2021, we have ceased installing new gas and oil boilers in buildings across the corporate estate unless there is no feasible alternative.

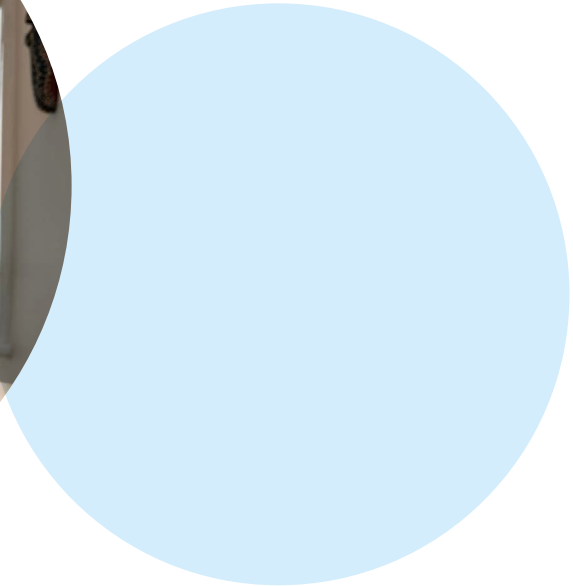
In 2022, consultants were appointed to under-take detailed decarbonisation assessments and retrofit improvement plans for the remaining fossil fuel sites.

These assessments outline the existing condition and energy performance of the buildings and then identify a package of suitable retrofit measures to improve the thermal efficiency of the buildings to allow efficiently sized non-fossil-fuel heating systems to be installed.

Next steps

On completion of the decarbonisation assessment and retrofit improvement plans in March 2023, a delivery strategy will be confirmed. All delivery routes will be subject to compliant tendering processes. Designs and modest levels of retrofit improvement works will commence in financial year 2023/24 with the full delivery programme through to 2027/28.

We have secured £1.9M of Public sector Decarbonisation Fund money to part-fund sixteen sites, that had preliminary information available when the bidding round opened. It is anticipated that further rounds of funding may open in 2023 and applications will therefore be submitted for any remaining sites that qualify, to contribute towards the overall costs.



Internal carbon price

We have developed an internal carbon pricing (ICP) tool to help integrate carbon emissions into revenue and capital investment decision-making processes within the council.

An ICP places a monetary value on emitted carbon. This can help the council make objective investment decisions for non-transport contracts, indicating at a financial level when it may be worthwhile to invest in a low carbon alternative.

The ICP mechanism now forms part of the council's Financial Regulations with a requirement for Executive Directors to ensure that when making revenue and capital investment decisions, these proposals need to be prepared in accordance with the carbon pricing guidance.

To ensure its smooth implementation we will begin trialling the ICP model on a number of pilot projects before its wider circulation across the council.

Our vehicle fleet

The challenge

We operate over 100 vehicles for a variety of functions from highways maintenance to mobile libraries. For the financial year 2021/22 our vehicle fleet was responsible for 869 tCO₂e compared to 2,357 tCO₂e in 2016/17.

This significant reduction in emissions can be partly attributed to reduced business mileage due to the Covid-19 pandemic, but we have been able to maintain much of the reduction since using new ways of working.

However, many activities and services will still require face to face contact or visits to site. It is therefore necessary to continue to find the lowest emission means of travelling in each instance.

Current progress

In a step to decarbonise the council's vehicle fleet, we have ceased buying and leasing petrol and diesel cars and light vans unless a particular function cannot be performed by an electric vehicle.

Fire and Rescue are moving from petrol and diesel lease vehicles for their emergency response vehicles, with 45 plug-in hybrid and six fully electric vehicles due to be leased in Spring 2023.

To support our fleet electrification ambitions, we have recently installed 42 fast and rapid chargers at County Hall. These put in place the necessary infrastructure to allow the transition of the council's fleet as well as promoting electric vehicle use by our staff and visitors.

Next steps

- We are starting to introduce charge points across our estate, with an initial 15 sites identified.
- The leasing contract for our Fire Service emergency response vehicles will allow for early exchange from hybrid to electric vehicles. This will allow for a transition towards a full electric fleet over the coming four years as the charging infrastructure and vehicle performance allows.
- A further 15 full-electric small vans are also to be added to the fleet over the coming two years as infrastructure allows
- We will collaborate with other public sector organisations such as the Integrated Care System to build up a network of EV charging points available to public sector staff.

Streetlighting

Current progress

Our main source of electricity consumption is for streetlighting. Since 2008 we have been upgrading our lighting stock to more energy efficient LED units. We have also introduced better controls such as central management systems to enable lighting levels to be adjusted remotely.

Between 2016/17 and 2021/22, the emissions related to our streetlighting more than halved, and over the past 18 months we've converted a further 15,000 streetlights. This latest upgrade will save an additional 5.5 million kWh each year and bring cumulative savings of nearly 5,500 tCO₂e by 2030.

Next steps

We will be converting the rest of our streetlight stock to LED technology by 2026. This will lead to further energy savings of nearly 1500MWh each year when complete. Moreover, it could bring cumulative savings of an additional 1,000 tonnes of CO₂ by 2030.

Building lighting

Current progress

The last major improvement to lighting within the corporate estate was around 10 years ago, where much of the lighting was replaced with low energy fluorescent fittings.

More recently where buildings have been refurbished, the lighting has been replaced with LED fittings, including as part of high-profile national projects such as the *Norwich Castle: Gateway to Medieval England* project.

Next steps

There are still some buildings across the estate with older, inefficient forms of fluorescent tube light fitting, as well as some with halogen floodlighting. We will complete the move to low energy lighting in all our freehold buildings by 2024, unless listed-building status or other regulatory constraints prevent this.

IT

Current progress

As part of our cloud strategy we will deliver systems and services from the cloud to take advantage of its flexibility, resilience and security.

Large scale cloud computing has advantages in improving energy efficiency with the potential to significantly reduce carbon emissions compared to on-premises datacentres. The council will therefore continue to consider cloud solutions first in preference to any on-premise solutions.

To date we have:

- Considerably reduced our number of physical servers and therefore our energy consumption in our data centres
- Integrated the Norfolk Fire and Rescue service into the corporate service further reducing the number of physical servers
- As applications are replaced, implemented the cloud version rather than the on premise version where suitable
- Refreshed our laptop estate with modern, more-efficient Lenovo portable devices, and increased their life to five years
- Migrated to Microsoft Office 365 reducing the need to increase our storage.

Next steps

- We will keep a reducing and more efficient server estate for the next three years for the remaining local requirement, reflecting a reduction in storage volumes, cloud migration and advances in server efficiency.
- We are undertaking a significant programme of software rationalisation and as applications are replaced we will use the cloud version rather than the on-premise version where it meets business needs.

▶ Focus area 2: reduce our indirect emissions

Introduction

Indirect emissions are not produced by the council itself but are an indirect result of the council's activities. These are defined as our 'scope 3' emissions according to international carbon reporting standards.

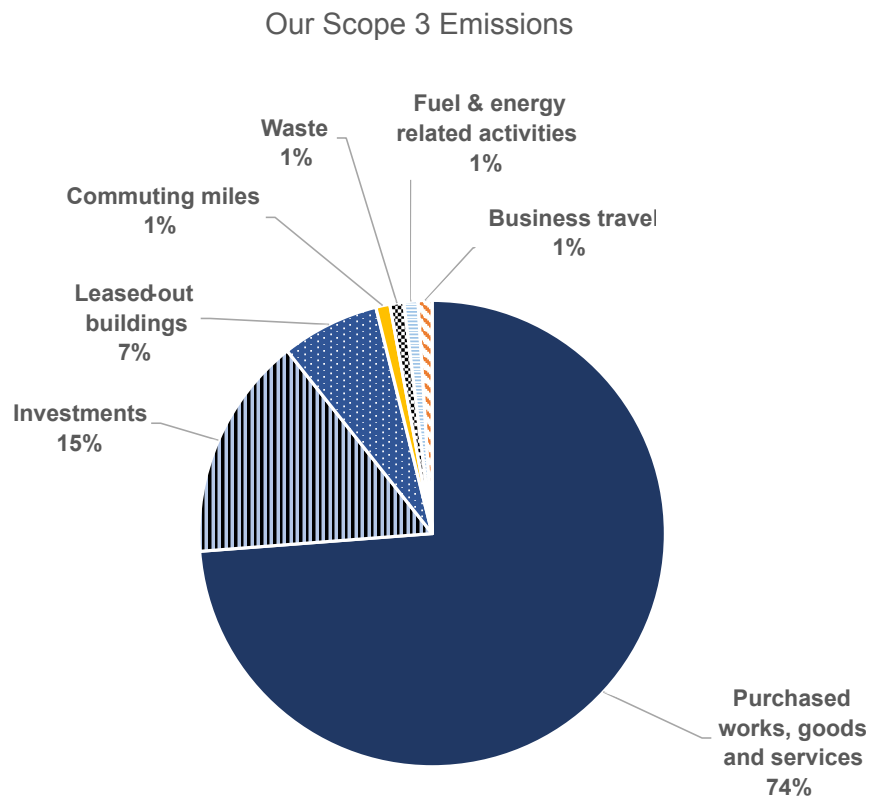
They include the emissions from the works, goods and services that the council buys from external providers such as for social care services, highways maintenance and waste management.

Indirect emissions are complicated to measure and report because the required data often lies with other organisations or individuals. We commissioned the Carbon Trust to use their expertise in this area to estimate our scope 3 carbon footprint for 2020/21. This does not enable year-on-year comparisons but does guide our priorities for carbon reduction.



The Carbon Trust estimated our indirect emissions to total a little over 475,000 tCO₂e. This is nearly fifty times more than our estate emissions and the equivalent to around 7% of Norfolk's total county-wide carbon footprint.

A summary of our scope 3 footprint covering seven key categories can be seen in the chart on this page. Our level of control over our indirect emissions is more limited compared our estate emissions. However, we can use our spending power and influence as an employer to encourage change across our supply chain and support behaviour change across our employees.



Strategic priorities

1. Work with our wholly owned companies to reduce their emissions
2. Improve data quality of supply chain carbon emissions
3. Create carbon reduction strategies for key procurement categories
4. Integrate emission metrics in our procurement activity
5. Use internal carbon pricing where appropriate to inform carbon reduction options appraisal
6. Work with other large public sector organisations to develop procurement standards where appropriate

Purchased Goods and Services [74%]

The challenge

Each year, the council spends around £900 million on a wide array of works, goods and services from external providers.

The Carbon Trust's analysis showed that our supply chain was by far the largest aspect of our scope 3 emissions, accounting for just over 350,000 tCO₂e (76% of the scope 3 total) in 2020/21.

If we extend this estimate to include spend with companies we own, our supply chain emissions rise further to around 400,000 tCO₂e which is equivalent to 6% of Norfolk's total carbon footprint.

Our procurement activities therefore represent a vital means through which we can significantly reduce emissions.

Six key procurement categories represent over 90% of supply chain emissions, as shown in the table on this page. The Carbon Trust's analysis also showed that the emissions from our supply chain are highly concentrated.

This means we can have a big impact through focussing attention on a relatively small number of key suppliers within higher emitting procurement categories.

In this section we will address opportunities for carbon reduction across the top four procurement categories that make up 80% of our supply chain emissions.

Top 6 procurement categories by emissions	Proportion of supply chain emissions
Passenger transport	38.4%
Adult care	19.0%
Waste	15.6%
Highways	7.9%
Children's Services	5.1%
Building construction and facilities management	7.3%

Complementary changes

A number of changes will help to reduce our supply chain emissions independently of our own actions. These include:

- grid decarbonisation, which will reduce emissions from our suppliers' energy use;
 - the Minimum Energy Efficiency Standards regulations for commercial buildings, which will require leases of substandard commercial buildings [EPC (Energy Performance Certificate) rating F or G] to cease from 1 April 2023
 - the intention set out in the Energy White Paper to require an EPC rating of B' for leased commercial buildings by 2030.
-

Passenger transport

Home to school transport

Passenger transport is the single largest contributor to our supply chain emissions.

Around 60% of the carbon from this category is from the provision of home to school transport, which the council has a duty to provide for certain groups of children under the Education Act 1996. We arrange transport for approximately 19,000 students across the county each year, delivered through around 1,400 contracts with transport operators.

Local bus services

Most local bus services in Norfolk are arranged independent of the council by commercial providers. In some cases, where there is a social need for a service that is not being provided, the council will step in to ensure the service is offered. The council also arranges for the provision of the Norwich Park and Ride service through a commercial contract. This service offers a quick and reliable means to get into the city, reduce congestion and reduce pollution.

Current progress.

For passenger transport, a clear pathway of reducing emissions is to transition the vehicles used in our contracts away from petrol or diesel and towards electric. We have committed to engage with the passenger transport market about timescales for phasing out petrol and diesel vehicles in school transport, starting with cars before moving on to people carriers, minibuses and eventually coaches.

Furthermore, we are creating new special educational needs and disabilities (SEND) schools closer to pupils' homes to reduce the need to travel. Over time, as pupils are matched to places, we will reduce the need to transport children over long distances to reach their SEND schools. With the majority of local bus services being commercially run, our work to cut these emissions is covered in the section on public transport.

Next steps

- We will work with district councils to try to align our requirements for lower-emission passenger transport contracts with hackney and private hire licensing requirements
- We will work with schools on interventions and campaigns which encourage more sustainable travel to school



Adult social services

Nursing and residential care homes

Nursing and residential care homes make up 69% of emissions from adult social services. Many care homes across Norfolk are older, energy inefficient buildings. These homes also have significant heating needs to ensure they provide a comfortable environment for their vulnerable residents. This requires residential homes to burn a lot of gas or oil to run their boilers and meet their heating needs in energy inefficient premises.

Domiciliary care and equipment

Alongside residential care services, emissions also relate to arranging the provision of care for people in their own home as well as the provision of care equipment to aid them with day-to-day activities. With Norfolk being a large, rural county, delivering this care and equipment depends on significant travel to get between people's homes. At present, this travel is mostly undertaken in petrol or diesel vehicles.

Current progress

The care market in Norfolk is currently under tremendous pressure. The sector faces acute staff shortages while the demand for care for those with complex needs such as dementia is increasing. Any efforts to reduce the carbon of adult care services must be sensitive to these challenges. However, with fuel and energy prices likely to remain high for the foreseeable future, there is a real case for operators to invest to improve care home energy performance and reduce fuel bills. Such investments can both reduce costs and move the sector onto a net zero pathway. As a first step, we are financing energy assessments for a sample of Norfolk's residential care homes. These assessments will help the homes understand their energy usage and what steps are available to make their buildings more energy efficient. More general guidance will be drawn up from these assessments as a means to support the sector to improve energy efficiency, reduce costs and cut carbon.

Next steps

As we update category strategies for each aspect of our social care provision, we will seek to identify opportunities to reduce carbon emissions. This may include:

- working with Norse as they seek to modernise their care portfolio;
- facilitating sharing of property
- encouraging more-effective route planning and incentivising use of more-efficient vehicles.

Waste

Our waste contract

In Norfolk, kerbside household waste collection is the responsibility of the city, district and borough councils, whilst the county council arranges for the treatment and disposal of non-recyclable household waste.

Over 200,000 tonnes of non-recycled waste is generated by households in Norfolk each year (also known as 'residual' waste). For many years, this waste was disposed of in landfill sites, but now it is largely treated by incineration and used as a fuel to generate electricity and sometimes heat. We have a contract with Veolia Environmental Services to send around 180,000 tonnes of waste a year to a waste facility in Bedfordshire.

Around 20,000 tonnes a year is also sent to a facility in Great Blakenham in Suffolk. Both facilities burn the waste to generate electricity while scrap metals and ash generated from the process are recycled. Managing the county's residual waste in this way generates carbon both through the burning of waste materials and from the haulage of the waste to the facilities.

Current progress

Key to addressing the emissions from waste is reducing the amount being generated in the first place. We are working on several initiatives to reduce waste and recycle more in collaboration with the Norfolk Waste Partnership. More detail on these is provided here.

Alongside this, we need to deal with the county's residual waste in ways that reduce its impact on the environment and are good value for money. While it is still a source of carbon emissions, converting residual waste to energy is recognised as the preferable management choice here. Firstly, because it diverts rubbish away from landfill sites which leak methane - a potent greenhouse gas - and secondly, because using residual waste to generate electricity and heat means that emissions are avoided from producing that electricity from new fossil fuel sources.

We also manages the legacy of closed landfill sites in its care and where possible uses the captured landfill gas to generate electricity which is fed into the grid.

Next steps

Our contract with Veolia and the arrangement with Suffolk to manage residual waste both run until 2027, with potential to extend to 2029. As options beyond these existing arrangements are explored there will be an opportunity to review again what is the most carbon-efficient solution for processing Norfolk's residual waste.

There is a requirement to ensure that any arrangements are flexible enough to allow emerging technologies and improved treatment options to play their part.

We will continue to focus on driving down volumes of residual waste both through local initiatives and supporting national policy directions. This includes the expected requirement for all the district, city and borough councils to collect food waste and plastic films in coming years.

We can also expect the introduction of a producer responsibility scheme for packaging. This will require producers to pay councils for dealing with their packaging and change the composition of waste that is collected.



Highways

Our highways contracting

We are responsible for maintaining and improving some 6,000km of public highways in Norfolk. Constructing and maintaining the county's highways is a source of carbon emissions directly through the vehicles and machinery used, but also indirectly from the production, transport, and disposal of the materials. For routine works and maintenance, the council has two main suppliers for works of a value of around £58m per year. These works include road and footway surfacing and repairs, gully clearing, verge maintenance, bridge maintenance and winter gritting, among other works. For strategic improvement schemes, for example the Great Yarmouth Third River Crossing, procurement is done separately. This is typically through a more bespoke contracting route, although the Eastern Highways Alliance Framework is an option for construction schemes worth up to £30m.

Current progress

For highways maintenance, we enabled the specification of warm asphalt in our surfacing programme in 2017, and since then the supply chain has been increasing its percentage use of the treatment on the Norfolk network. Warm mix asphalt has the potential to reduce the embodied carbon by up to 15% compared to conventional hot mixes through using less energy to manufacture. We expect the use of warm mix to increase significantly in 2022/23 and thereafter become the default option in road surfacing projects.

Next steps

For our routine works and maintenance works, a key contract with Tarmac ends in March 2026. The size of this contract means that preparations are starting well in advance to ensure carbon reduction can be integrated as part of this re-procurement exercise. The other major routine works provider is Norse Highways. Norse Highways is also home to the Norfolk Partnership Laboratory - a national centre of excellence in road pavement design and engineering. We will look to draw on their expertise for specifying appropriate low carbon materials and techniques when contracting for highways works.

For our non-routine highways works, we will seek to use carbon-specific contractual clauses and tender evaluation criteria as part of the procurement process. This can be used in setting minimum standards but also in providing the right incentives for innovation to cut emissions from these works.

Long Stratton Bypass

We are currently working to develop proposals to deliver a long-awaited bypass on the A140 around Long Stratton to cut congestion and support the local economy.

The procurement process for the bypass works will specifically score contractors' proposals to minimise carbon emissions from construction. Contractors will be expected to demonstrate their track record in reducing carbon emissions, including demonstrating progress against their corporate carbon reduction plans.

Staff travel [2%]

Business travel

The challenge

Business travel refers to emissions from the transport and accommodation of employees for business-related activities in assets controlled by third parties (including air travel, public transport, and employee-owned vehicles).

Over 4.5 million miles of business travel and about 840 nights of accommodation were recorded in the year 2020/2021, resulting in 1,560 tCO₂e of emissions. This is a 52% reduction in mileage compared to the earlier reporting period due to new ways of working promoted by Covid restrictions.

Current progress

Our employees are now supported to make low-emission, low-pollution choices when travelling for work through our partnership with Enterprise Car Hire. Through this partnership, colleagues are able to book hire cars for delivery or pick-up as well as access Enterprise Car Club vehicles around Norwich which can be used on an ad-hoc basis. Five electric cars have now been added to the Car Club Scheme exclusively for use by NCC employees.

Next steps

We have procured a 'greener car' salary sacrifice scheme. This is an employee benefit scheme enabling more staff to drive electric cars for council business. As the scheme rolls out we expect to see benefits from reduced emissions for business travel, commuting, and private use of the cars.

Employee commuting

The challenge

Employee commuting refers to emissions strictly from the transport of employees between their homes and worksites.

COVID-19 has resulted in lasting changes to ways of working and a hybrid working approach can be expected going forward, with a significant proportion of the council's workforce working remotely. But for the remaining travel requirements we need to ensure as an employer we are promoting sustainable travel options for our staff.

Current progress

We have provided good-quality cycle parking, showers and changing facilities.

In 2021, we teamed up with Konectbus to include a Park and Ride bus stop outside County Hall to reduce the demand for on-site car parking.

We have refreshed our Cycle to Work scheme, an employee salary sacrifice scheme to save money on the cost of a new bike and accessories to use for commuting to work.

We have a membership programme with Beryl Bikes which enables NCC employees to use pedal bikes for free. Beryl Bikes have bays at convenient locations across Norwich - including the bus and railway stations and County Hall, as well as two bays in Wymondham.

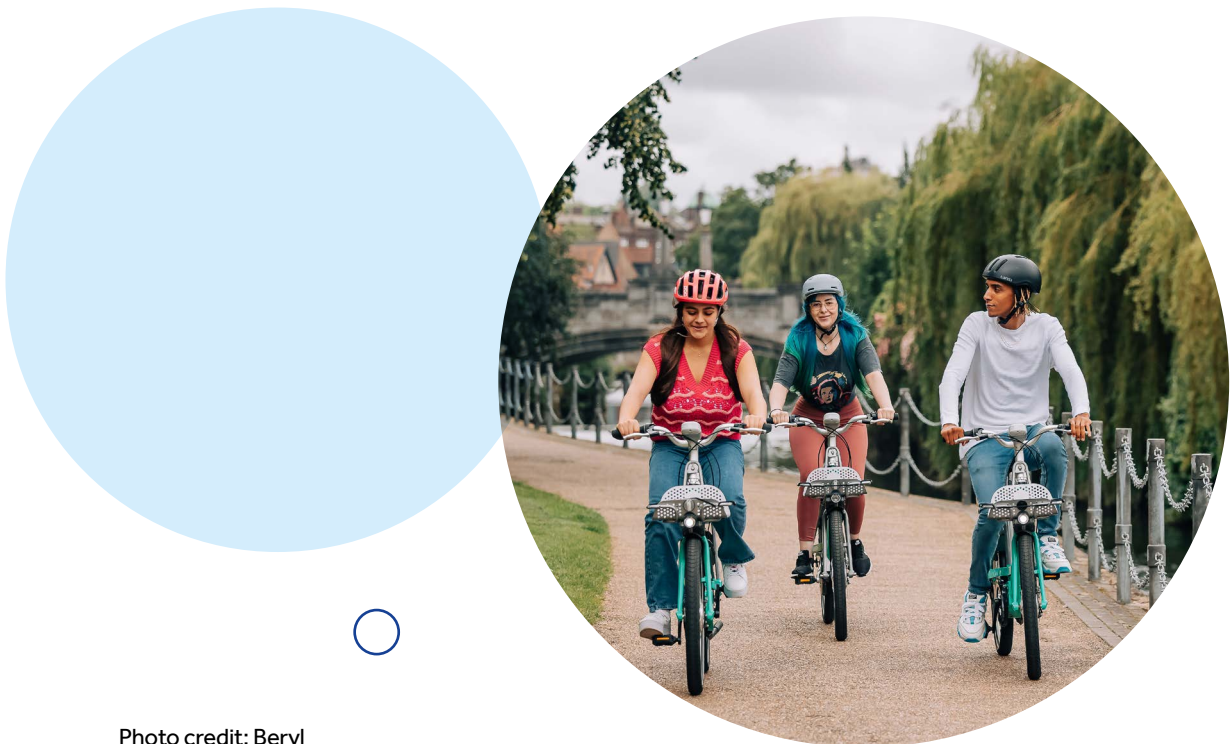


Photo credit: Beryl

Our investments [15%]

The challenge

Investments include all emissions associated with our wholly-owned companies, where we are the sole equity investor and has financial control over the organisation. Using our influence as shareholder can bring benefits in terms of contributing to net zero but also in pro-actively adapting our companies to the commercial and regulatory imperatives of a low carbon future.

The Carbon Trust produced an estimate of our companies' carbon footprints for 2020/21 by applying their proprietary carbon conversion factors to spend and turnover data. [Norse Group](#) is by far the largest source of emissions from our investments, forming approximately 92% of the total figure for this category. Therefore, we concentrate here on steps being taken to work with Norse to reduce its emissions.

Norse Group

Norse Group Limited is our largest wholly owned company, and stands as the largest local authority trading company in the UK. Norse Group itself is a holding company for a wider group of direct and indirect subsidiary companies which provide a broad array of services from residential care to highways maintenance.

Within the Norse Group there is significant expertise in highways and property design, as well as a waste management business recognised for its environmental performance. This makes it well-positioned to capitalise on the opportunities arising from a growing low carbon economy.

To give Norse and our other companies a mandate for carbon reduction we have issued shareholder letters setting out formal low carbon objectives. For Norse, key to this is finalising its Clean Growth Strategy in compliance with Procurement Policy Note 06/21 (PPN 06/21). This will mean putting in place a clear plan to cut its emissions in line with the national net zero 2050 target, with interim targets towards achieving this. Such a plan is in Norse's commercial interests. It will ensure the company aligns with the expectations that large public and private contracting bodies are phasing in for major suppliers. Norse will also set out specific waste, biodiversity and water strategies for operational delivery by 2024 in support of their wider corporate sustainability efforts.

Our shareholder letter also set out the need for close collaboration with Norse in the areas where they are one of our key suppliers:

- We see Norse's plans for capital improvements to its residential care homes as an opportunity to improve the energy performance of the buildings to reduce energy bills as well as carbon
- Norse's highways service is expected to keep abreast of best practice in low carbon construction, and use its expertise in pavement engineering through the Norse Partnership Laboratory to support sustainable pavement design
- We would wish Norse to develop its facilities management offer in minimising its carbon emissions, including through effective maintenance and building management practices and through minimising carbon emissions from catering and waste.

Going forward, we will continue to use our influence as shareholder to help ensure that Norse and our other companies meet their low carbon objectives and set further objectives in due course to maintain momentum in their carbon reduction efforts.



Leased-out buildings [7%]

Schools

We have an arms-length relationship with the schools where we own buildings and land, as they have responsibility for their own budgets and operations, including how they manage school buildings and utilities. There are around 200 schools in Norfolk where we still have a role in long-term maintenance through a funding arrangement with the Department for Education. Where schools have become academies, formal leasing arrangements are in place for the land and buildings to the academy trust who are fully responsible for operating and maintaining the schools.

A number of steps are being taken to support schools to reduce their carbon footprint.

In terms of the construction of new school buildings, these are being designed to be near zero carbon in use, with the intention to be entirely zero carbon in the next iteration of design (in line with guidance from the Department for Education). We are also in the process of designing a new construction procurement framework, which is anticipated to be let later in 2023. This is expected to include levers to incentivise and monitor low carbon construction standards.

We have started using some of the funding for school maintenance to commission decarbonisation surveys. These can be used for bids for further funding under the Public Sector Decarbonisation Scheme to address heating systems and energy efficiency. We intend to continue this approach, and use their insights to guide our capital works in schools, but the extent of this is reliant on sufficient funding from the Department for Education.

We are also using our communications with schools to share information on ways to improve energy efficiency to reduce bills and carbon. This can help them make the most of recent capital funding from central government to spend on energy saving and efficiencies.

County Farms

We [let out some 6,800 hectares of county farm land](#). Eighty-two of the leases include habitable buildings. In accordance with our policy of not installing new oil or gas boilers except when this is unavoidable, boilers in farmhouses will be replaced with either heat pumps or biomass boilers when they reach end of life, funded by the capital maintenance budget. The council will, in accordance with its obligations as a landlord, improve the energy efficiency ratings of farmhouses where it is required to do so under the Minimum Energy Efficiency Standards regulations.

▶ Focus area 3:

Addressing Norfolk's county-wide emissions

Introduction

This section addresses six thematic areas where we have the greatest influence on Norfolk's territorial emissions using our position in the county and our statutory obligations to help wider emission reduction. For each thematic area we will outline our strategic priorities.

Significant county wide emissions are also related to land use and agriculture. These are addressed more directly in [focus area 6](#) on ensuring nature has space to recover and grow.

Transport

Decarbonise Norfolk's transport sector, promoting and supporting active travel, the use of public transport and the uptake of electric vehicles.

Building and planning

Support the domestic building retrofit agenda and promote the delivery of sustainable developments.

Commercial and industrial sector

Support the decarbonisation of the industrial and commercial sectors through engagement with partners.

Energy

Promote a whole-systems approach to transforming the energy system, focusing on transmission and distribution of energy across Norfolk and support green energy generation.

Digital solutions and connectivity

Promote improvements to Norfolk's digital infrastructure to support innovation and enable climate action.

Waste and the circular economy

Promote the transition towards a circular economy, prioritising waste reduction, recycling and reuse.

Transport

The challenge

Although most Norfolk residents live in built-up areas, Norfolk's large, rural geography means private vehicles like cars and vans are vital for connecting businesses and communities. This is reflected in the data: the transport sector was responsible for 24% of Norfolk's territorial emissions in 2020, making it the largest source of carbon for the county. The main source of emissions from this sector is the use of petrol and diesel vehicles in road transport.

Cutting the carbon from Norfolk's transport will mean a shift towards lower carbon, electric vehicles as well as more people choosing active forms of travel and public transport. This should be achieved alongside reducing the need for people to travel by ensuring amenities are available locally to where people live.

As the Local Highways Authority, we have an important role in supporting the decarbonisation of the transport sector through the provision of sustainable infrastructure.



Photo credit: Beryl

Strategic priorities

Our Local Transport Plan represents its overarching strategy in relation to transport infrastructure until 2036. This Climate Strategy aligns with its goals but more specifically focuses on decarbonisation of transport through the following priorities:

- 1.** Working with transport providers, to continue to positively influence behaviour change and increase the range and number of sustainable travel options available to residents, visitors and businesses across Norfolk. This includes bus operators and building on the Enhanced Partnership relationship we already have in place with bus operators and implementing Norfolk's Bus Service Improvement Plan.
- 2.** To prioritise transport investment into more sustainable modes, such as public transport and active travel including micromobility options, to help support the journey to net zero. This is especially important in areas where there is poor air quality, and these will be prioritised.
- 3.** To prioritise investment into net zero initiatives, including implementation of our Electric Vehicle Strategy, as part of proactive transport network management, to help residents, visitors and businesses across Norfolk become more sustainable.
- 4.** To improve connectivity between rural areas and services in urban centres, with a focus on active travel and public transport.
- 5.** To focus on identifying the key risks from climate change and directing efforts to tackling these where they are likely to be most disruptive to journeys, especially on the most critical parts of the network.

Transport carbon targets

The Department for Transport is due to release guidance on how Local Transport Plans should incorporate quantified carbon reduction. Once this guidance has been published, we will work with our partners to develop carbon reduction targets for Norfolk's transport sector.

Electrification of the transport sector

Current progress

Reducing Norfolk's transport emissions is a major challenge due to the rurality of the county. While we strongly advocate public transport use and active modes of travel, we recognise that cars, vans and goods

vehicles will continue to be important means of travel to connect our county together.

Helping our citizens and businesses switch to electric vehicles is therefore recognised as a key strategy that will help meet the aims of both our Local Transport Plan and Environmental Policy.

In 2021, we published our Electric Vehicle Strategy, setting out a series of priorities to help support the uptake of electric vehicles in Norfolk. These are summarised in the table to the right.

We have now instigated an EV task force bringing together representatives from the county, district and borough councils across Norfolk to ensure we take a collaborative approach for the electrification of Norfolk's transport sector.

For residents who do not have driveways or off-street parking, limited access to EV charging points can be a significant barrier to realising the benefits of owning an EV. To support the electrification of Norfolk's transport sector, we need to ensure EV charging points are both reliable and accessible to our residents with convenient methods of payment. We will be installing 46 new kerbside charging points in residential areas across Norfolk without off-street parking. Funding to support this installation comes from a third-party operator and these charge points will be ready for public use in 2023.

We have also successfully secured £1.6m through the Local Electric Vehicle Infrastructure (LEVI) scheme to install 80 public chargepoints across the county with a focus on rural areas and tourist hotspots. We will encourage further roll-out of on-highway charge-points through a combination of private funding by operators and, where needed, funding from the Office of Zero-Emission Vehicles.

Priority

Accelerate Charge Point Deployment

Approach

- Support the private sector who want to invest in charge point infrastructure on our highway network.
- Take a balanced approach to delivering charge point infrastructure, by inviting private investment but helping to show where investment is needed.
- Consider the potential to integrate Electric Vehicle (EV) charging with other energy and transport services as part of new transport hubs.

Priority

Collaborative Working

Approach

- Engage with government to deliver initiatives that will reduce the cost of buying electric vehicles compared to petrol and diesel vehicles.
 - Establish an Electric Vehicle forum where the County Council can collaborate with District, City and Borough Councils to maximise opportunities
-

Priority

Update Parking and Design Standards

Approach

- Every new home with a parking space includes access to suitable charging facilities.
 - Every new non-residential development includes suitable charge point provision
 - Adopt design standards for on-street chargers to enable and manage future private sector roll-out of charge points
 - Provide guidance and support for Norfolk residents that do not have access to suitable charging facilities near or at their homes
-

Public transport

Current progress

Encouraging people to choose public transport through extensive, affordable and efficient services will be key to cutting emissions in the transport sector. The council has a strong recent record in securing funding in support of this ambition.

In 2020, we were successful in securing £32m to implement a range of schemes to improve sustainable transport in Norwich through the Department for Transport's (DfT's) Transforming Cities Fund. This has enabled investment in bus and cycle lanes, pavement widening, mobility hubs and improved junctions.

In 2022, we were awarded a further £50m of funding from the Department for Transport to support [Norfolk's Bus Service Improvement Plan \(BSIP\)](#). We were one of only 31 local transport authorities to receive this funding. Our BSIP is focussed on making bus travel more attractive to reduce the reliance on car travel.

There are four key aims to encourage more bus passengers and enable this modal shift:

1. To rebuild and increase passenger confidence.
2. To have a green and sustainable transport offer
3. To have a public transport network that is the first-choice mode for most journeys, for existing and new customers.
4. To have a simple, seamless and affordable fares and ticketing offer

Alongside this, we have secured £14.7m from the Department for Transport to bring [70 electric buses for use in Greater Norwich in 2024](#) through the Zero Emission Bus Regional Area (ZEBRA) scheme, with First Bus providing an additional £21m local investment to make this happen.

This will also see First's Roundtree Way depot become one of the first fully electric depots outside London.

Next steps

We will work with bus operators to use our recent successes as a springboard to secure further funding to improve bus infrastructure and accelerate the roll-out of zero emission buses.



Active travel

Current progress

Shifting travel from private cars to public transport and active travel is important. Reducing the dominance of the car will make space for those walking, cycling and wheeling as well as making provision for improved quality of life such as green space and play areas.

To date, we have been successful in using government funding to support the improvement of active travel options. Example projects include:

- DfT's Transforming Cities fund for Norwich has seen investment in four miles of new cycle lane, improved junctions with traffic signal priority for cyclists, and the introduction of the popular Beryl bike and e-scooter share scheme
- Successful bids for over £2.5m from DfT's Active Travel funds to improve road crossings, junctions and introduce more segregated cycle lanes
- Capability funding to develop and publish a Norfolk Local Cycling and Walking Programme.
- Active Travel England funding to deliver community, schools based and workplace active travel interventions across Norfolk
- Greenways to Greenspaces in an overarching programme placing habitat connectivity at the heart of green infrastructure development. It promotes active travel as an attractive alternative to vehicular transport, linking places where people live and work, as well as connecting wildlife and plant habitats.

Next steps

We can encourage a modal shift to active transport options by providing infrastructure for footpaths and cycle paths. We are working in partnership with local authorities across the county to produce Local Cycling and Walking Infrastructure Plans (LCWIPs) for Norfolk.

These provide a clear picture of the network we want to create for active travel across the county, identifying and prioritising improvement schemes which can be delivered over the short, medium and long term. The aim of this is to enable more people to consider both cycling and walking as a workable, safe form of transport which also delivers physical and mental health benefit.

Behaviour change

Current progress

A significant proportion of carbon reduction will come from changes to businesses' and consumers' behaviours.

This change of behaviours will be needed across all sectors, but as a highway authority we will have a specific focus on transport.

Behaviour change interventions in transport are capable of:

- reducing people's dependency on cars in order to reduce congestion and emissions
- transitioning people away from single occupancy cars, promoting car sharing and the use of car clubs rather than car ownership
- increasing the use of public transport
- increasing the use of active modes of transport.

All of these can have a positive impact on our environment, health, and wellbeing.

Integrating behavioural change strategies into transport developments will enable substantial shifts in how we travel.

Quality, accessible information is a key enabler of behaviour change. We are developing a 'Travel Norfolk' website that will unify all county projects and campaigns which aim to make it easier for people to travel around the county, with a focus on sustainable modes of transport.

Travel Norfolk will include a sophisticated and localised route planner to help residents and visitors make low-carbon travel choices.

Next steps

- Look at the potential for behaviour change interventions such as Personalised Travel Planning
- More collaboration with Public Health and health sector partners (other public health interventions such as cycling on prescription and health walks can complement travel behaviour change).

The built environment

The challenge

In 2020, emissions arising from the domestic sector amounted to 20% of Norfolk's total emissions. These emissions are primarily from domestic heating, with a small percentage attributed to building lighting and appliance use.

The UK housing stock is one of the oldest in Europe, and 80% of buildings that will exist in 2050 have already been built¹⁰. Domestic energy performance certificates show that 62% of dwellings across Norfolk have an energy rating of D or less¹¹.

Therefore, addressing the energy efficiency and decarbonisation of heat generation in homes will be crucial to reducing domestic emissions across Norfolk and will help to address ill health caused by living in poor quality, damp and cold housing.

Beyond retrofitting opportunities, we also need to ensure that new developments are centred around the climate agenda. The planning system should support the transition to a low carbon future whilst also minimising vulnerability and improving resilience to the impacts of climate change.



¹⁰ [Climate change - UKGBC - UK Green Building Council](#)

¹¹ [Energy Performance of Building Certificates in England and Wales: July to September 2022](#)

Most planning applications are considered by Local Planning Authorities. However, we are a consultee for planning applications decided by Local Planning Authorities (for example as the Highway Authority, Lead Local Flood Authority, Education Authority, Historic Environment Service, Natural Environment Team etc) and is also responsible for producing the Norfolk Minerals and Waste Local Plan, setting policies that regulate land use and development relating to waste management sites and mineral extraction sites and associated development.

It is generally accepted that Norfolk has too few affordable houses and too many low-paid jobs. It is also generally accepted that much of our infrastructure has not had the necessary investment for many decades - including digital connectivity, utilities and transport infrastructure. We need to continue to close these gaps to enable communities and businesses to benefit from reliable, 21st century internet and mobile phone coverage; from sustainable water, sewage and electricity supply; and a road system that allows transport choices, including public transport, active and other personal modes of travel.

Such infrastructure will underpin our sustainable housing and economic growth plans; enable physical and digital access to education and employment; and reduce traffic and pollution in town centres and other sensitive locations. In pursuing these gains we must seek to mitigate adverse climate effects through minimising embedded carbon in construction; achieving biodiversity net gain; and the adoption of technology that best reflects progressive thinking.

Strategic priorities

- 1.** Promote green skill development to support the domestic building retrofit agenda.
- 2.** Use our position to secure more resources, seek funding opportunities to support our partners in the retrofit agenda.
- 3.** With partners, help residents to understand and engage in retrofitting their homes by information provision and active promotion.
- 4.** Promote residential development that is sustainably located.

Building retrofit

The UK Climate Change Committee's report, '[UK Housing: Fit for the Future?](#)' outlines a number of key areas prioritising emission reduction across the domestic sector to ensure that the UK's housing stock is adequately prepared for the impacts of climate change. This includes:

1. Retrofitting existing homes so they are low-carbon and resilient to climate change.
2. Ensure new homes are built to be low-carbon, energy and water efficient, and climate resilient.
3. Performance and compliance – new homes and retrofitted existing homes must meet design standards.
4. Address the skills gap in housing design, construction and in the installation of new green technologies.

Whilst we recognise the importance of these ambitions, we do not directly own domestic housing stock. Therefore, our influencing power to decarbonise domestic buildings across Norfolk is significantly limited.

The need to retrofit existing buildings is coupled with the need to meet the increasing demand for more housing to support population growth within Norfolk.



Opportunities

Support our partners

Although we may not be able to directly drive carbon reduction from domestic housing, we can use our position to secure additional resources, seek funding opportunities and support our partners in the retrofit agenda.

The Norfolk Climate Change Partnership has agreed that building retrofit will be one of its three strategic priorities.

Norfolk Warm Homes

[Norfolk Warm Homes](#) is a partnership programme led by Broadland District Council providing energy efficiency improvement works to homes occupied by low-income households.

Our Public Health team sits on the Norfolk Warm Homes steering group and is helping to support an evaluation of their work to date.

Skill development

One way to support the decarbonisation of domestic housing is to support the growth and development of our local workforce. To retrofit Norfolk's housing stock will require a workforce of sufficient scale and capability. Currently, there is a significant skills gap, from retrofit assessors and advisors to retrofit installers.

Our Green Skills Sector Development project, discussed in detail in focus area 4, centres around narrowing this skills gap using our position in the county to engage with private and voluntary sector to understand the needs of the local workforce and bring together employers and training providers in to develop plans.

Through this project we have built a partnership agreement with [Retrofit Academy](#) with the goal to develop a green skills training programme to facilitate the domestic homes retrofit agenda.

Through the Norfolk Infrastructure Framework we have allocated a further £169,000 of funding to support development of a comprehensive approach to retrofit skills.

The proposed [Norfolk County Deal](#) devolves the adult education budget to the county council and charges the county council with providing input to the Local Skills Improvement Plan. We will use this opportunity to further promote skills development for retrofit as well as other aspects of the green economy.

Next steps

- We will use the anticipated powers and influencing opportunities from the County Deal to support further green skill development to support retrofit.
- We will work within the Norfolk Climate Change Partnership in support of its agreed strategic priority to promote retrofit across owner-occupied, private rented and social housing.

Spatial planning

Planning policy

We need to ensure we enhance our built, natural and historic environment and look to ensure new developments are beneficial to Norfolk's society, economy and environment.

Climate change initiatives have been embedded into land use planning for many years with significant emphasis placed on planners to address climate change through achieving sustainable development.

[The National Planning Policy Framework](#) stipulates that plans should take a proactive approach to mitigation and adapting to climate change. It emphasises the need for new developments to ensure future resilience to climate change impacts and help reduce greenhouse gas emissions through location, orientation and design.

Our priority is to coordinate planning so that it aligns with climate resilience efforts, particularly in relation to flooding, as well as the uptake of green infrastructure across the county.

The planning process is a pivotal part of managing flood risk across Norfolk.

We are the designated Lead Local Flood Authority (LLFA) for Norfolk, making us the statutory consultee on surface water drainage for all new major developments.

To ensure planning systems support our efforts towards climate resilience across the county, the LLFA [comments on planning applications](#) in respect of surface water drainage.

As of 2015, planning policy and decisions on planning applications relating to major development are needed to ensure that sustainable drainage systems (SuDS) are used for the management of surface water to lessen the likelihood and impact of surface water flooding.

Well-connected, accessible developments

Our primary goal as Lead Highways Authority is to ensure that new developments are well located, connected and designed to maximise the use of sustainable and active transport options, making them more attractive places to live.

In line with our Local Transport Plan, we will support the building of new developments in locations that knit into the existing urban fabric where new residents can easily access schools, shops and services by walking and cycling, building complete and compact neighbourhoods and enhancing connectivity with safe and efficient infrastructure.

Next steps

At the local policy level, the County Planning Authority is currently preparing its Local Plan Review which is timetabled to be adopted by the end of 2023. It will contain the policies used to decide planning applications for mineral extraction and waste management facilities in Norfolk for the extended plan period until 2038.

Sustainable development principles are also embedded in this plan, from ensuring that sites are located at sustainable locations to ensuring new development incorporates climate change adaption/mitigation measures and generates on-site renewable energy where possible.

The forecast annual mineral requirements for Norfolk, currently considered to be 1.5 million tonnes of sand and gravel, 754,000 tonnes of silica sand and 83,000 tonnes of Carstone, are currently provided by over 25 sites located across the county. Work on our emerging Minerals and Waste Plan shows that we are likely to need to allocate a further 17 new sites or major extensions to existing ones over the next 15 years. In addition to providing Norfolk with the essential minerals it needs the timely and sympathetic restoration of these sites represent valuable opportunities for both biodiversity and geodiversity gain, and landscape and public access improvements.

We set out our priority projects every year in our [Strategic Infrastructure Delivery Plan \(SIDP\)](#). Our goal is to deliver projects that will provide significant economic, housing, and jobs growth across Norfolk.

Biodiversity net gain

The policy environment

[Biodiversity Net Gain \(BNG\)](#) is an approach to development and/or land management that aims to leave the natural environment in a measurably better state than it was beforehand.

Established via the Environment Act 2021, it is expected to take legal effect for new planning applications from November 2023. Thus, where a development has an impact on biodiversity, developers will have to provide a minimum 10% Biodiversity Net Gain within their development or elsewhere.

We will be developing policies that define our approach where BNG requirements overlap with our responsibilities. We will also work with planners and businesses to ensure that there is a strategic response to the implementation of BNG.

We will aim to use BNG in areas of the county prioritised for nature and landscape recovery. Targeting delivery in these areas will maximise gains and support the delivery of the Local Nature Recovery Strategy.

The Local Nature Recovery Strategy will help guide where this investment is targeted by showing opportunity areas.

These opportunity areas will drive nature recovery and provide wider environmental benefits. Among these benefits, there will be climate regulation, as the newly created habitats will capture carbon thus helping to regulate the climate. Other effects include reduced air pollution, with benefits to public health and wellbeing that could in turn increase resilience and support community cohesion.

Our own approach

Whilst developers are encouraged to deliver BNG within their developments wherever possible, it is predicted that many developers will need to provide BNG outside their own developments.

We will develop our own projects and work with others to support effective delivery of BNG credits. Opportunities for the use of our estate including County Farms will be pursued. We will work with other businesses too to ensure that there is a coordinated and effective approach to delivering nature recovery and other climate change benefits.

We will develop effective monitoring approaches to ensure that we can measure change in species, habitats and landscapes.

The commercial and industrial sector

The challenge

Together the commercial and industrial sector makes up one sixth of Norfolk's total carbon footprint. Most of these emissions are from gas and electricity consumption.

Supporting the decarbonisation of the commercial and industrial sector can help ensure that Norfolk continues to move towards clean, low carbon and inclusive economic growth.

Business and industry engagement with the climate change agenda will rely significantly upon legislative change, social pressure and broader economic factors. However, we can play a role through working with New Anglia's Local Enterprise Partnership (LEP) Clean Growth Task Force. Through the LEP and other key partners, we can help support Norfolk's regional businesses and organisations to assess their environmental impact and help them on their journey to net zero.



Strategic priorities

1. Support the LEP's Clean Growth Taskforce (and equivalent activity under successor arrangements) to facilitate behaviour change in the industrial and commercial sectors and encourage the sharing of best practice.
2. Support the decarbonisation of the local commercial sector through continued funding schemes such as Carbon Charter
3. Work with local networks such as the LEP to support SMEs (small and medium enterprises) on their journey to net zero.

The business sector

Net zero engagement from the business sector can support economic growth, creating new lines of business and developing skill levels across green industries.

Irrespective of the size of a business, through their operations, production of goods and consumption all directly contribute to climate change. Supporting Norfolk's businesses to examine their own contribution to climate change, identifying opportunities to mitigate this and to help them understand the potential impacts of climate change on their operations and profitability is pivotal. This work closely relates to our focus on stimulating Norfolk's green economy, described in more detail in the focus area 4 section of this strategy.

Road to Net Zero business support

We work in partnership with New Anglia LEP to deliver the [Road to Net Zero](#) project - a pilot project designed to pro-actively provide business support and grants to help businesses across Norfolk and Suffolk improve business sustainability and achieve net zero.

We have secured funding for project delivery from the UK Government [Community Renewal Fund](#) and began delivery in January 2022. The project has supported over 250 Norfolk businesses.

The Road to Net Zero is delivered through a range of partners including the New Anglia Growth Hub, Norfolk and Suffolk County Councils, Suffolk and Norfolk Chambers of Commerce, UEA and the University of Suffolk and Groundwork East. Project funding totalled £793,000 across Norfolk and £686,000 across Suffolk.

Industrial decarbonisation

Point source emitters and agri-food decarbonisation

Industrial emissions are predominantly from 'point source' emitters which are large, fixed facilities. 90% of Norfolk and Suffolk's point source emissions relate to just nine point source emitters, eight of which are in Norfolk¹². These facilities relate to power production, food processing, paper production and waste management and, [as the climate change commission recognises](#), local authorities have very limited control or influence over them.

However, as well as in many cases making progress in their own right, these large emitters are a source of expertise for smaller businesses in their sectors.

Building on the learning from the Road to Net Zero project, the Norfolk Investment Framework will fund a project led by the New Anglia LEP, in partnership with British Sugar, KTN, University of East Anglia (UEA), the Norfolk Climate Change Partnership, Norfolk Chambers of Commerce and the FSB . This pilot project is designed to begin to address challenges through building information and knowledge through peer-to-peer and personalised support as well as greater regional collaboration.

The key workstreams will include:

- An enabling route map around challenges and opportunities
- A collaborative net zero network of large industrial emitters
- A series of peer-to-peer knowledge exchange workshops led by the KTN focused on specific net zero measures including process, resource and energy efficiency, heat and building decarbonisation, renewable local energy, business planning and the circular economy.
- Better understanding of the agri-food scope of challenge and opportunity including consideration of value chain emissions
- Working with the CLA, NFU, Anglian Farmers, the Royal Norfolk Agricultural Association, Norfolk Farming & Wildlife Advisory Group and Water Resources East to see where synergies can be found.
- An innovation and technology investment pipeline capturing clean growth opportunities around hydrogen and carbon capture, usage and storage in particular

¹² New Anglia LEP report on Industrial Decarbonisation in Norfolk and Suffolk

This project would be the first of its kind in the country. Agri-food is one of the largest sectors in Norfolk and has a number of large companies that are amongst the biggest emitters in the region. This pilot would place Norfolk in a prime position to take a lead in this area.

The programme will run for one year with the view that the outputs will be used to develop the case for further funding for a scale-up across other sectors in the future

Decarbonisation of commercial property

We have no direct influence over decarbonisation of commercial property, which is largely a matter for property owners and for government policy. The minimum energy efficiency standards regulations should, however, [improve standards](#) by making properties that do not reach a reasonable level of performance by 2030 effectively unlettable.

Energy

The challenge

Energy is fundamental to how we live, with the impact running all the way through from production to supply to use. While the UK is increasingly showing a more diverse energy mix, with significant gains happening from offshore wind to onshore solar, the energy mix still relies significantly on fossil fuels.

Together with Suffolk, Norfolk is rapidly proving itself as the centre of the UK's green energy transition. The Norfolk and Suffolk coastline is at the centre of the world's largest market for offshore wind, generating over half of the UK's offshore wind power, and contributing to a sizeable proportion of the UK's electricity energy mix¹³.

While other sections in this strategy address areas of impact at the end of the energy chain, this section addresses how we can exert more influence on directing support for Norfolk's own needs, rather than solely providing national energy infrastructure connectivity. We need to take a comprehensive approach to address the energy challenge by looking to mitigate the impact of the energy we use and adapt to the changes that the energy market has on communities, through supporting more diverse and resilient approaches to addressing our energy needs.

Some of this will support opportunities to ensure affordable energy solutions for an expanding population, but also to ensure that the distribution and transmission of energy across the county supports greater need.

¹³ [Norfolk and Suffolk leading centre for UK's Offshore Wind - New Anglia](#)

We also need to continue to support the needs of the existing community, ensuring that they have reliable and affordable energy.

Strategic priorities

1. Work with the Norfolk Climate Change Partnership to evolve our energy approach for Norfolk
2. Develop an energy strategy for Norfolk County Council aligned with our net zero agenda
3. Support national decarbonisation of the Grid by expanding appropriate renewable energy generation across the county.
4. Support an Offshore Transmission Network to minimise the need for any onshore infrastructure associated with offshore wind farms.
5. Support the upgrading of onshore transmission infrastructure where this provides appropriate benefits to Norfolk's residents and businesses and helps in delivering clean energy for housing and employment growth in Norfolk.



Energy constraints

Currently, there are constraints on the capacity of the electricity transmission and distribution network across Norfolk.

The existing energy grid and distribution infrastructure requires considerable investment to adapt to future energy demands and emerging technologies. Without improvements to this infrastructure the grid cannot support comprehensive electrification.

Investment to improve the network infrastructure is therefore fundamental to meeting decarbonisation aims as a county, and supporting the community itself as it transitions to an electrified future.

In addition, there are pressures for new onshore transmission infrastructure associated with the offshore wind energy sector making landfall and grid connection in Norfolk. Consideration of alternatives to new overhead transmission lines needs to be taken forward for dealing with offshore wind energy, such as an offshore transmission network; and/or opportunities for burying new transmission lines to reduce visual impacts across the county.

Where onshore solutions are taken forward, National Grid and UK Power Networks need to work together to deliver clean energy to local residents and businesses to enable sustainable growth.

Developing an energy strategy

We have been working with a range of partners concerning issues that affect the energy agenda. Part of this was to create a better understanding of the challenge faced. The first step was working with the Energy Systems Catapult to produce a [Norfolk Local Energy Asset Representation \(LEAR\)](#). The LEAR is a modelling tool that creates a visual baseline of energy assets within the county to help planning and innovation for net zero.

The outputs from the LEAR provide a robust evidence base that can guide the County Council and partners towards which clean growth opportunities are the most effective for our area.

The Norfolk LEAR reviewed building stock, energy demands, energy networks, embedded generation, domestic and public electric vehicle charging and social data. The Norfolk LEAR is the first step towards developing a net zero pathway for energy. This publicly available document highlights the potential opportunities across the county, with initial assessments identifying opportunities to decarbonise dwellings on the gas network, off street EV charging potential, and concentration of dwellings suitable for solar PV.

Next steps

Our next steps to address the energy challenge will be to work with our partners through the Norfolk Climate Change Partnership to develop an Energy Plan built around the structure of a Local Area Energy Plan (LAEP).

It will address the following key priorities:

- Local energy solutions
- Procurement approaches
- Energy efficiency/emission reduction
- Social equity
- Energy resilience
- Investment and cost efficiency

The LAEP will provide pathways for a wide range of local stakeholders to help bring forward decarbonisation projects across the many sectors where energy infrastructure is pivotal.

Nationally significant infrastructure projects

Development consent orders

NCC has a statutory obligation to oversee the Development Consent Orders (DCOs) for discharge conditions of Nationally Significant Infrastructure Projects (NSIPs) that make landfall in Norfolk.

Renewable Offshore Wind projects we are involved in include:

Hornsea Three (consented)

Hornsea Three is an offshore wind farm being delivered by Ørsted which will generate around 2.4 GW of electricity and will be capable of supplying over 2 million UK homes. It will be located approximately 121km off the Norfolk coast; make landfall at Weybourne; and grid connection at Norwich Main.

Norfolk Vanguard (consented)

[The Norfolk Vanguard](#) offshore wind farm will be delivered by Vattenfall and generate 1.8 GW of electricity and will be capable of supply 1.3 million homes. It will be located approximately 47km from the Norfolk coast. Landfall will be in Happisburgh, and will make the grid connection at Necton.

Norfolk Boreas (consented)

A sister project to the Norfolk Vanguard, [this project](#) will also be delivered by Vattenfall. It will generate 1.8 GW of electricity and will be capable of supplying 1.3 million homes. It will be located approximately 73km from the Norfolk coast.

Landfall will be in Happisburgh, and will make the grid connection at Necton. Onshore works are due to start on all three schemes in 2023.

Extension to Sheringham Shoal and Dudgeon wind farms

There are proposals for a significant expansion of the existing [Dudgeon](#) and [Sheringham](#) wind farms by Equinor. The project will double the existing generating capacity taking the existing and new project to over 1.4 GW output, which will be capable of supplying around a million homes with electricity.

Community benefits from NSIPs

Skills and Employment Plans

NSIP Development Consent Orders (DCOs) include the provision of a Skill and Employment Strategy. This provides us with the opportunity to work closely with developers to influence skills and employment provision, so Norfolk's residents benefit from skills development and new job opportunities, relating to the offshore wind sector.

Skills and employment strategies provide the basis for working with local stakeholders on skills and employment to maximise the employment opportunities associated with construction, operation, and maintenance of wind farms.

We also work with offshore wind farm developers to influence supply chain support for SMEs, to support the Norfolk business community to benefit from supply chain contracts.

Community Benefit Funds

Community Benefit Funds provide funding for local communities and tend to be in place for the lifetime of the projects (typically 20 to 25 years). Vattenfall are supplying £15 million in [Community Benefit funding](#) for the Norfolk Vanguard and Boreas Projects.

Ørsted has committed to a [Community Fund](#) worth approximately £7 million over the next 20 years. £75,000 of the Fund each year is ring-fenced for a 'Skills Fund'.

Equinor is also committed to developing and taking forward a community fund after a decision on their project by the Secretary of State.

Case Study: Great Yarmouth Operations & Maintenance Campus

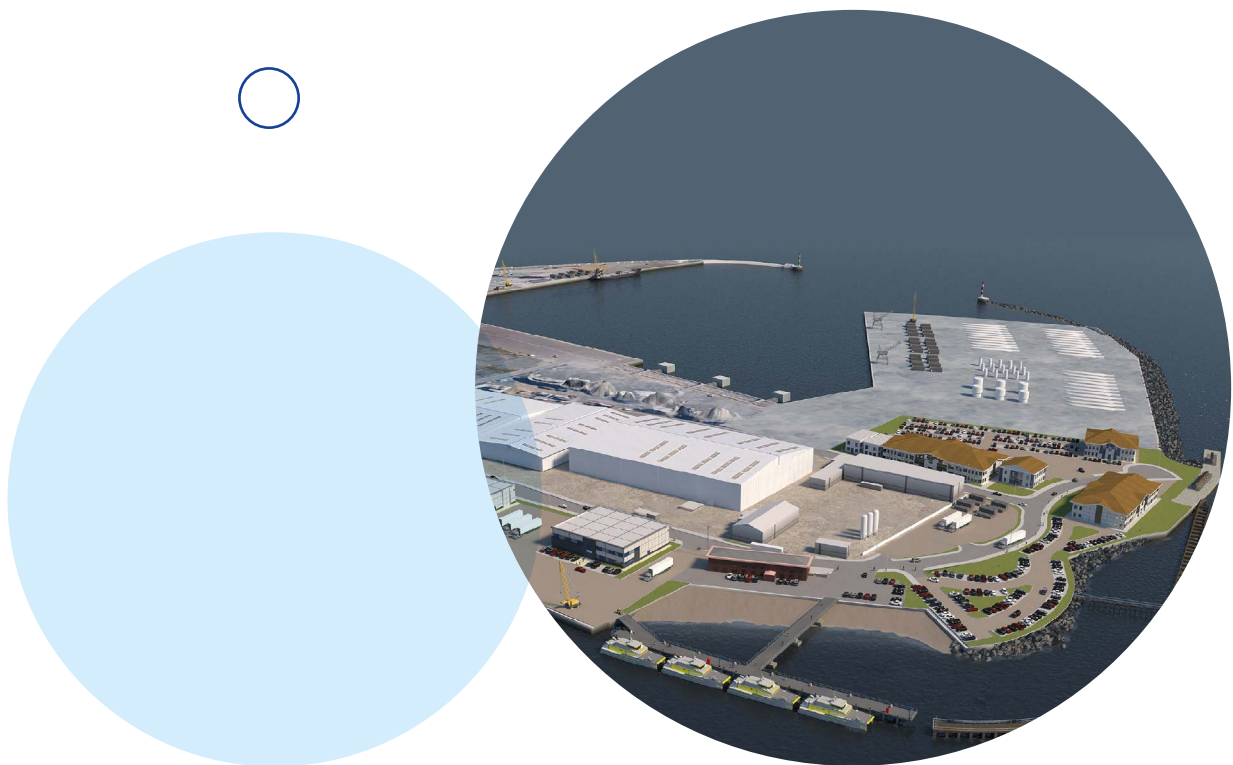
Commissioned by NCC, the £21.4 million Operations and Maintenance Campus is a collaboration with Great Yarmouth Borough Council and the New Anglia Local Enterprise Partnership (LEP). It looks to capitalise on the now well-established offshore renewables sector off the east coast and the Enterprise Zone that covers sites in Great Yarmouth.

The offshore energy sector provides Great Yarmouth and Norfolk with the single most important economic opportunity for a generation. Oil and gas have been a mainstay of the economy for over 50 years and the recent emergence of offshore renewables has presented Great Yarmouth's port, its supply chain, and its skills base with the chance of enjoying hugely significant growth and investment.

This project will help create a viable, highly attractive location for offshore energy businesses to operate in an optimum location, close to flexible port facilities, and with direct access to the sea.

Feasibility work has found that 650 new green jobs will be created by the new Operations & Maintenance campus. The project has been in development for a few years and is part funded by the Government's 'Getting Building Fund', following a successful bid from Norfolk County Council.

The construction project, which includes repair of 190m of quay wall, installation of new pontoons and a revised highways layout, began in January 2023.



Digital solutions and connectivity

The challenge

Digital connectivity can be a driving force in the race to net zero carbon emissions. For example, access to high-bandwidth connectivity is enabling more flexible ways of working, reducing the necessity for travel. With more people working remotely we are seeing fewer cars on the road, in turn supporting the decarbonisation of the transport sector.

Better digital infrastructure can also enable us to take advantage of advancing technologies and data analysis such as Internet of Things (IoT) solutions. Using IoT sensor technology can allow us to better understand the local area and deliver more effective and efficient services.

We are leading the way in IoT solutions across the county, having rolled out an open-access low-power wireless wide area network to enable the council and businesses to connect sensors that enhance business processes, enable better decisions, improve efficiency and save money.

However, smart innovations can only be achieved on the back of strong network coverage. So, improving Norfolk's digital infrastructure (broadband, mobile, and wireless IoT sensors) is imperative in helping to reduce the county's carbon emissions.



Strategic priorities

1. Ensure high speed digital connectivity is made available to every property across Norfolk
2. Work to improve mobile phone coverage across Norfolk
3. Develop and allow free, universal access to IoT network connectivity.

Digital solutions and connectivity targets

Metric	2017 baseline	2025 target	2029 target
Superfast broadband coverage (% of both residential and business premises)	89%	98%	99%
Ultrafast broadband (Gigabit Capable) coverage	0.2%	85%	98%
Outdoor coverage of the NCC-funded open-access IoT service (commercial coverage figures are not available)	0%	>99%	>99%
4G or above mobile phone coverage for voice and data based on estimated outdoor geographic coverage	83%	88%	92%

Broadband connectivity

Current progress

In 2011 only 42% of Norfolk properties had a connection to superfast broadband. The majority of these were in the larger urban centres, particularly Norwich. This coverage figure now stands at over 95% across Norfolk and continues to grow.

We are leading on three programmes to help deliver superfast and then ultrafast broadband across the county.

Better Broadband for Norfolk

[Better Broadband for Norfolk](#) is a multi-million-pound partnership, funded by NCC, DEFRA (The Department for Environment, Food & Rural Affairs), BT, and the Department for Culture, Media and Sport aimed at transforming broadband speeds across the county by installing high-speed fibre optic networks.

Local Full Fibre Network initiative

The Local Full Fibre Network (LFFN) initiative aims to improve internet access for public services in the more remote parts of the county. Vital local services across all rural Norfolk can now access internet speeds at least ten times faster than their old, mostly copper-based, connections thanks to the investment. For many locations it has also reduced their ongoing annual costs.

While the fibre broadband phase of this project is now complete, some budget remains to deploy Fixed Wireless Access (FWA) to some even more remote locations.

Project Gigabit

In March 2021, the government announced the launch of a [new strategy](#) to deliver Gigabit-capable broadband to the hardest to reach parts of the country.

Next steps

- Complete phase 3 of the Better Broadband for Norfolk project.
- Support the procurement and deployment of Gigabit fibre through Project Gigabit
- Test the effectiveness of FWA connectivity to remote public buildings, such as village halls.

Internet of Things

Norfolk and Suffolk are leading on the development of the country's largest public sector Long Range Wide Area Network (LoRaWAN).

Supported by NCC, the [Norfolk and Suffolk Innovation Network](#) helps deliver pervasive low-power wireless connectivity, creating greater rural digital connectivity county-wide to encourage IoT innovation.

Through the LoRaWAN development, there are several ways IoT solutions can benefit Norfolk and support climate action, through both mitigation and adaptation measures.

Supporting agriculture

IoT solutions can allow farmers to optimise the use of resources; improve efficiency by monitoring their product and conditions in real-time; and reduce the usage of pesticides and fertilizers. This can in turn reduce nutrient and pesticide run-off and support nutrient neutrality.

We will continue to work with agritech suppliers and agritech support groups locally.

Highways

IoT can be used to check the temperature of road surfaces across Norfolk to decide if gritting is needed in the winter. Using the LoRaWAN, we have embedded a denser network of monitoring sensors on some of Norfolk's roads. The data from those sensors provides a cost-effective way of deciding whether each part of the road network could be treated less. This not only saves on salt but also fuel consumption and driver time by operating gritters less.

Building management

We have made use of IoT solutions across some of the buildings we own. We have installed a LoRaWAN based temperature, light and humidity sensor network which supplies half hourly data to a web-based dashboard. This data can help inform us to ensure buildings are heated and temperature controlled in a way that makes them cost efficient and environmentally compliant.

Environmental sensing

IoT sensors can contribute to climate adaptation, for example by:

- capturing water height and flow in remote locations to highlight areas at risk of flooding; and
- Providing weather data, such as rain fall, temperature and humidity.

Next steps

- Test and promote agritech use cases.
- Test and promote use-cases for IoT transformed council services.
- Test and promote weather and safety related use cases.

Waste and the circular economy

The challenge

Emissions from the waste management sector account for 2% of Norfolk's total emissions.

Waste can be a valuable resource and the goal is to transition from a linear process of taking materials, using them and then disposing of them, and move towards a circular economy and zero waste, built around principles of waste reduction and reuse supported by recycling where necessary. As part of this transition waste reduction, reuse, recycling and recovery of value from waste all play a part in line with the principles of the waste hierarchy, with a move away from treatment and disposal of waste to drive down emissions in this sector.

We are not responsible for the management of all the county's waste but has scope in its role as a Waste Disposal Authority to provide significant influence and leadership in this area, by promoting the reduction, reuse and recycling of waste across the county and helping the move away from the reliance on landfill to dispose of waste.



Strategic priorities

1. **REDUCE:** use targeted messages and work with the Norfolk Waste Partnership (NWP) to drive behaviour change to help reduce the amount of waste produced with a strong focus on reducing food waste.
2. **REUSE:** provide reuse facilities and promote and support opportunities for reuse and repair.
3. **RECYCLE:** use targeted messages to increase recycling rates and drive down levels of contamination by working with the NWP. Provide easy to use and convenient recycling centre services, keep home composting as a priority and support the District, City and Borough Councils in their recycling services.
4. **RECOVER:** focus on treatment and disposal options for residual waste that are sustainable and consider emissions and recovery, and that are flexible enough to allow for waste reduction and composition change.
5. **POLICY:** influence the development of national policy to support the move to the circular economy and a shift from weight based to carbon-based performance metrics.
6. **COSTS:** promote a total system approach to reducing costs with the Norfolk Waste Partnership and assessing the implications of future funding changes on waste services and the possibility of an emissions trading scheme and the changes they will lead to.

Waste targets

Measure	Baseline 20/21	2024/25	2028/29
Kilograms of residual household waste per person a year	Less than 260kg	Less than 230kg (reflects a drop following the Covid-19 increase in residual waste)	Less than 220kg (reflects a drop due to roll out of food waste collections by Norfolk councils)
% of waste diverted from disposal at recycling centres	More than 72%	More than 72.5% (better performance of new sites)	More than 73% (better performance of new replacement sites)

Food waste reduction

Around a third of residual waste in Norfolk is food waste. Wasted food contributes 8 to 10% of total manmade greenhouse gas emissions. Roughly one third of food produced around the world is wasted, therefore contributing significantly to global emissions¹⁴.

We are a signatory to the [Courtauld Agreement](#) which focuses on reducing the carbon effects of food in the entire supply chain, and its Food Savvy campaign is focused on food waste reduction and was started with the Suffolk Waste Partnership and Hubbub, since adopted by the Norfolk Waste Partnership and is being delivered by local councils.

Home composting

Our [Rooting for Nature](#) home composting initiative allows residents to produce their own compost and reduce garden waste generated. In 2021, 2,800 subsidised compost bins were sold during the campaign making it the highest number of bins distributed through the scheme in over ten years, with 2,100 sold in 2022. This shows more and more people are keen to get involved in composting to cut waste, help nature and benefit their garden.

Promote reuse and recycling

As part of a recycling centre upgrade programme two new recycling centres have been delivered in the greater Norwich area - the Norwich North and Norwich South Recycling Centres. These both provide better located and easier to use facilities with large reuse shops.

New recycling centres for the Sheringham, Wymondham, Long Stratton and North Walsham areas are in development which will also include improved reuse facilities, and support improved recycling performance and diversion from disposal as well as making the service easier for customers to use.

Reuse shops are now found on 15 of 20 recycling centres across the county, enabling reuse of materials that otherwise end up being recycled or as waste.

Zero waste direct to landfill

Residual waste collected by Norfolk's councils and from recycling centres is treated via a contract with Veolia based on the [Rookery South Energy Recovery Facility](#) near Stewartby in Bedfordshire, and an arrangement with Suffolk, based on the Great Blakenham incinerator near Ipswich.

¹⁴ Action on food waste | WRAP

This means that arrangements are in place to use residual waste as a fuel to generate electricity and recover materials for recycling in the process, and to help ensure that zero waste from Norfolk's residents is sent directly to landfill. These arrangements allow for around 50,000 tonnes of carbon emissions to be saved every year, compared to if residual waste was sent to landfill.

Legacy landfill sites

Emissions arising from the waste management sector have been primarily attributed to the release of methane gas from landfill sites. Whilst arrangements are in place to treat Norfolk's residual waste by incineration, the County Council is still responsible for several closed landfill sites across the county. These are managed to capture landfill gas and use it to generate electricity which can be fed back into the grid where this is practical.

Engaging with the business sector

We are partners on the EU funded [FACET project](#) with Great Yarmouth Borough Council, piloting solutions to help the tourism industry shift from a linear business model to deliver the circular economy, with the goal to reduce waste. This has included infrastructure solutions such as innovative smart bins to reduce frequency of waste collection, initiatives to encourage visitors to use recycling and waste bins more effectively, as well as collecting plastics from local businesses to be able to be used in new products.

Businesses that joined the FACET project had the opportunity to be involved in fully funded circular economy pilots, including a returnable cup, on-site composting and surplus food donations. Support for businesses also involved sharing the latest knowledge of environmentally friendly packaging solutions and models for joint purchasing to create workable ways for businesses to be sustainable.

Norfolk Waste Partnership

With Norfolk's district, city and borough councils being responsible for the collection of waste county-wide, and the County Council responsible for its disposal, this is an area that relies on significant collaboration and coordination.

The [Norfolk Waste Partnership](#) provides a collaborative forum for Norfolk's eight local authorities to deliver efficient and complementary services and to help ensure a collective focus on shared interests, such as:

- [Reducing waste](#)
- [Increasing recycling](#)
- [Fighting the scourge of fly-tipping](#)

The Partnership has shared resources and provides a forum for Norfolk's eight local authorities to discuss best practice and drive improvement within the waste sector.

In 2022 the Partnership looked at the composition of left-over rubbish and recycling across Norfolk and is using the findings to drive targeted initiatives and campaigns by theme, area and demographic.

National policy

Defra's [Resources and Waste Strategy for England](#) has given the direction of national waste policy, presented in three themes:

- 1.** Extended Producer Responsibility (EPR): producers paying councils directly for dealing with packaging.
- 2.** Consistency: Government telling councils what they need to do and how it will be funded.
- 3.** Deposit Return Scheme (DRS): producers taking materials back directly.

We have been active in helping develop these themes, which will lead to a step change in helping reduce waste, increase recycling and decreasing the environmental burden of waste, whilst also shifting more costs to producers.

In 2022 the government also consulted on developing the UK Emissions Trading Scheme, and as part of this process it is possible that emissions from waste incineration and energy from waste could be included by the end of the decade, with any developments in this area possibly having financial considerations for the County.





Focus area 4:

Promoting a green economy for Norfolk

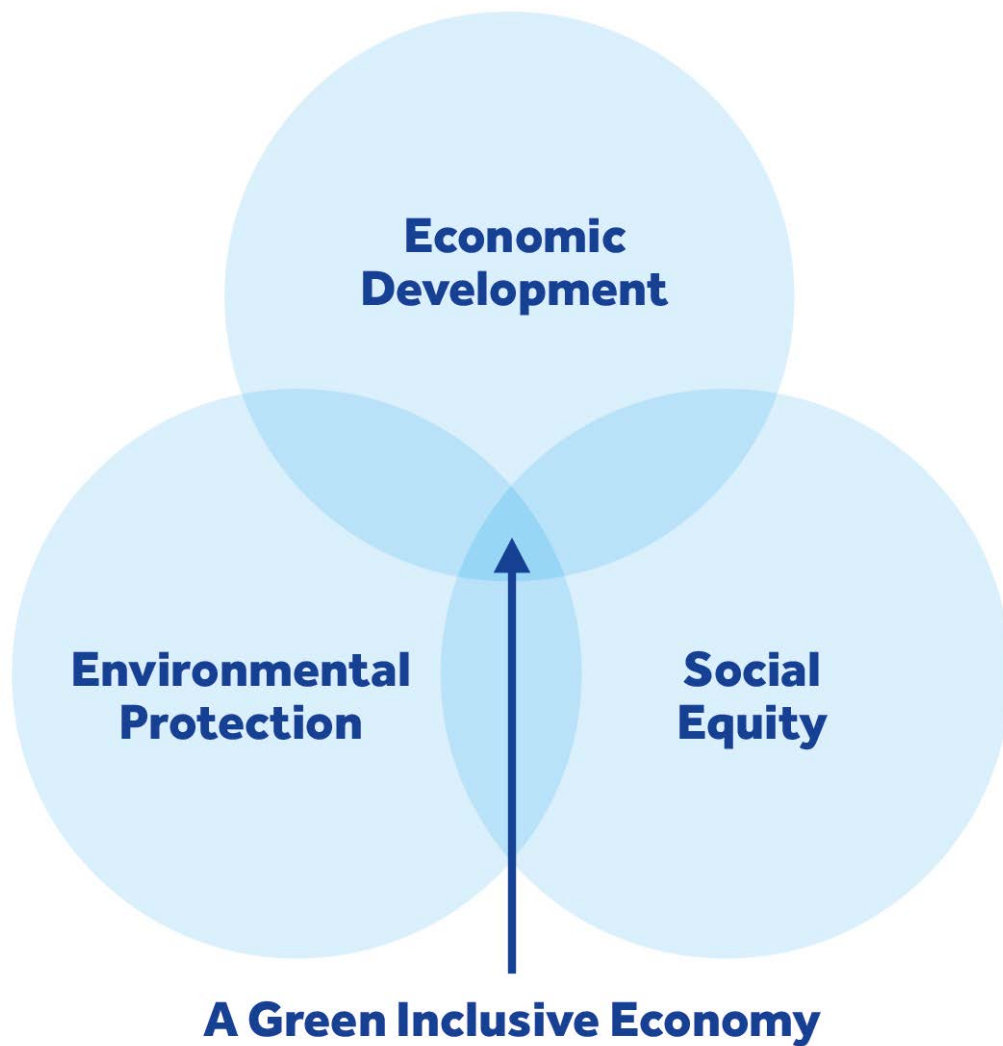
Introduction

We need to ensure that future economic growth across Norfolk is both resilient and green. Our ambition is to pursue an inclusive local economy for Norfolk where we can generate economic growth, improving social well-being whilst tackling the challenges and opportunities presented by climate change. This clean growth will involve the decoupling of economic growth from environmental degradation, so that growth does not worsen the impacts of climate change.

Developing an inclusive economy built on environmental protection and social equity is a huge opportunity for Norfolk, supporting economic resilience and encouraging broader decarbonisation across the industrial and private sector.

NCC can use its position in the county to work closely with local employers to encourage green skill development, promote technological innovation and provide access to green financing opportunities.





Strategic priorities

- 1.** Promote green skill development to support the development and installation of clean technologies to support decarbonisation county-wide
- 2.** Grow the sustainable tourism sector to support year-round, well-paid, skilled careers
- 3.** Support Norfolk's tourism and hospitality businesses to achieve Green Tourism accreditation
- 4.** Provide access to green finance and investments through the Norfolk Investment Framework.

Skill development

The challenge

Green jobs and skill development is central to ensuring clean economic growth for Norfolk.

Green jobs can be broadly defined as jobs that directly or indirectly contribute to reaching climate and environmental goals. Green skills are the competencies that workers need to deliver across these areas.

[Recent estimates](#) suggest there could be 700,000 direct total jobs in England's low-carbon and renewable energy economy by 2030 and more than 1.2 million by 2050¹⁵. Nearly half could be in clean electricity generation and providing low-carbon heat for homes and businesses. Around 40% of jobs will be involved in installing energy efficiency products, such as insulation, lighting and control systems; providing low-carbon services, including financial, legal and IT; and producing alternative fuels, such as bioenergy and hydrogen. The remainder will be directly involved in manufacturing low-emission vehicles and the associated infrastructure.

Across Norfolk, as elsewhere in the country, there is a significant green skills gap which can act as a barrier to our broader climate action agenda. For example, almost all homes will need to switch to low carbon heating systems by 2050, yet currently there are only around 3,000 heat pump installers in the UK compared to 130,000 registered gas heating engineers¹⁶.

To enable the county to be resilient and mitigate the impacts of climate change there needs to be a major upskilling in the clean energy and net zero economy. This will need to include both adoption of new technologies as well as training and retraining those who currently do not have sufficient skills to meet the green goals of businesses across all sectors.

Green Skills Sector Development Project

We have developed a Green Skills Sector Development project that will incorporate a range of research, feasibility and implementation themes in the development of the Norfolk Net-Zero Skills strategy.

¹⁵ [Local green jobs - accelerating a sustainable economic recovery](#) | Local Government Association

¹⁶ [The heat pump installer gap](#) | Nesta

Utilising project funds, the development of this strategy will incorporate four work themes:

1. A green skills market analysis will identify the existing retrofit/green skills market and highlight regional specialisms and areas with growth potential.
2. NCC will work in partnership with the Retrofit Academy to establish the feasibility of developing a dedicated retrofit and low carbon building training facility in the County.
3. The project proposes to support new technologies and investing in SME innovation and business growth opportunity in the offshore wind industry to enhance the local supply chain.
4. The project will also recruit a dedicated 12-month post to lead on the development and implementation of project themes.

The overarching goal of the Green Skills Sector Development project is that those trained and provided employment through this process will have transferable skills and experience, helping Norfolk to maximise green skills opportunities in commercial and domestic settings, supporting local jobs and keeping spend in the Norfolk economy.

Sustainable tourism

Norfolk: a sustainable tourism destination

The tourism industry is one of the major economic contributors and biggest employers for Norfolk, contributing about £2.8bn annually to the local economy. Developing Norfolk's sustainable tourism industry is central to our ambition to pursue green, inclusive economic growth. We want to promote Norfolk as the most sustainable tourism destination in the UK. Norfolk's sustainable tourism industry supports local businesses and supply lines to keep value in the local economy, whilst celebrating and preserving the county's natural environment such as the Broads and the Norfolk Coast Area of Outstanding Natural Beauty (AONB). Sustainable tourism can also help transition away from the narrative of 'seasonal, low skilled, low paid' to 'year-round, well-paid, skilled' careers.

Norfolk Tourism Recovery Best Practice Group

In July 2020, the Norfolk Tourism Recovery Best Practice Group was set up to oversee the delivery of the £2.2 million Norfolk Strategic Fund-supported Tourism Recovery Programme.

Managed by NCC, the Group oversees the development and delivery of the Norfolk Sustainable Tourism Strategy and Plan and liaises with the regional Visitor Economy Group as well as the Norfolk Climate Change Partnership.

Green Tourism

We have engaged with Green Tourism, an international organisation that recognises and supports sustainable achievements of tourism businesses through its green tourism accreditation programme.

In partnership with Green Tourism, we plan to trial a bespoke Norfolk approach to green accreditation that helps tourism businesses to work together, and individually to support environmental and landscape recovery aims in specific environmentally designated areas such as the Norfolk Coast AONB.

Our goal by 2030 is to ensure that the majority of Norfolk's tourism and hospitality businesses have been encouraged and supported to secure Green Tourism accreditation or a similar business sustainability award.

Focus area 6 discusses our work around adaptation to ensure that the landscapes that attract visitors are maintained and enhanced and that attractive new sites that combine biodiversity and tourism potential are developed.



EXPERIENCE project

Working alongside 13 other organisations across six pilot regions in France and England, NCC is the lead partner on the [EXPERIENCE project](#) to harness the experiential tourism trend to extend the visitor season. This is a €23.3 million project co-financed by the European Regional Development Fund.

Extending the visitor season will help generate 20 million new visitors and deliver sustainable economic growth across the Channel regions.

Together, project partners will reinvent the way the economy, environment, communities and brands interact-focusing on sustainable, low-impact tourism activities to secure the future resilience of our natural and cultural assets.

Norfolk Way Art Trail

The [Norfolk Way Art Trail](#) is a new public art trail spanning 250 miles of the existing trail network.

Through the EXPERIENCE project, NCC has commissioned six site-specific locations across Norfolk that will feature multi-sensory, accessible artworks to engage communities and inspire visitors. The trail is due to launch in March 2023.

The Rebellion Way

In partnership with Cycling UK, we have launched our sixth long-distance cycling route, the [Rebellion Way](#). This multi-day route begins and ends in Norwich taking in “quiet lanes, beautiful forests and big skies” for over 232 miles.



Agriculture and food production

The challenge

Norfolk has a greater proportion of the best grades of food-producing land than the average for England. Farms across East Anglia are important for cereal and horticulture crops, produce two thirds of England's sugar beet, a third of the nation's potato crop and have significant industries relating to pig, poultry and egg production.

Over the past 40 years, Norfolk has been at the forefront of developing agri-environment measures. Examples include the Broads Grazing Marshes Scheme which informed the Environmental Stewardship and Countryside Stewardship schemes and the [Farming in Protected Landscapes pilot project](#).

Competition for land use including that needed for biodiversity net gain, carbon sequestration and nature recovery across the county will affect how food is grown in future years. Nature recovery will have benefits against climate change and should not be seen as a threat to food production.

Trees grow well in less productive soils and in well-designed and well-managed woodlands can support the foundations of food production by improving soil health, cleaning water, and supporting biodiverse ecosystems. As a result, farm businesses can become more diverse, economically and ecologically resilient. They can provide new streams of income from timber, carbon units, and through recreation. Norfolk is a pioneer county in this respect and several exemplar projects are leading the way to this agricultural transition.

Current progress

We will work with landowners to influence and support initiatives that support nature recovery whilst keeping Norfolk's focus on food production.

An example of this already working in practice is the [Wendling Beck Environment Project](#), where NCC is a partner with landowners working together to regenerate 2000 acres of farmland for nature. The Norfolk Coast Partnership, supported by NCC, has also secured funding for a multi-partner project to recover landscape, '[North Norfolk, Wilder, Wetter, Better for Nature](#)'.

Working in partnership with local landowners and NGOs (non-governmental organisations) this project will create entirely new wildlife habitat from current arable land. It will fill in habitat gaps to give a contiguous area of habitat of 13,470 hectares across North Norfolk, making a real change for nature in the county.

We have also applied for funding for woodland creation which can support farmers to manage their land in an environmentally sustainable way while continuing to produce food. The funding will support a tree-planting campaign on privately-owned land but will also support skills development to ensure the continuity of the programme. The England Woodland Creation Offer will, from 2025, become part of Local Nature Recovery.





Focus area 5:

Climate adaptation

Introduction

Climate change has the potential to significantly affect our local services, Norfolk's infrastructure and the health and well-being of our residents. Only by preparing for the coming changes can the UK protect its people, its economy and its natural environment.

Part of Norfolk County Council's response to climate change must focus on managing climate risk for Norfolk by building resilience across the local services it provides and adapting our infrastructure through nature-based and engineering solutions.

By developing effective climate adaptation measures we can look to reduce Norfolk's exposure and vulnerability to the hazardous impacts of climate change, ensuring it remains a place for current and future generations to thrive.

Avoid 'lock-in'

Taking action early to adapt to climate change will be the most cost-effective way to build in resilience where decisions have long lifetimes. When decisions are made that do not take account of climate change this can lead to unnecessarily 'locking-in' vulnerability or future costs. This becomes difficult and expensive to remediate later down the line and ultimately brings higher costs for society.

System-wide

Climate risks often interact with each other and have knock-on impacts. We must be alert to system-wide resilience rather than simply assess individual risks in isolation. For example, extreme weather can bring power or IT outages, affecting the ability to provide health and social care in hospitals and care facilities, while also affecting transport infrastructure used by ambulances and social care vehicles.

Maximise social benefits

Well planned climate adaptation can help create a fairer society, as those facing social and economic disadvantages are disproportionately affected by climate change. Equally, actions to address climate change could also exacerbate existing inequalities if not carefully planned.

Embracing nature

Many of the services the natural environment provides are also key to climate change resilience. These include water and air purification, protection from flooding and coastal erosion, and natural control of pests and invasive species. Nature-based solutions work with the natural resilience and adaptability of the natural environment to protect the valuable services it provides.

Collaboration

A coordinated approach to climate adaptation and resilience is needed to maximise its effectiveness.

Through the Norfolk Resilience Forum and as the Lead Local Flood Authority we will continue to work in close collaboration with the district and borough councils and Environment Agency.

Where appropriate, we will look to use nature-based solutions to adapt to climate change building partnerships and working in close collaboration with local business and residents to identify areas of opportunities and “win-wins”.



Strategic priorities

1. Work with the Tyndall Centre for Climate Change Research at the University of East Anglia to understand better the risks of climate change impacts on Norfolk and potential adaptation responses
2. Ensure new infrastructure is designed against appropriate assumptions on the future impacts of climate change
3. Learn lessons from the extreme heat experienced in summer 2022 and the implications for public services
4. Be the voice of Norfolk residents to government bodies like the Environment Agency on securing appropriate investment on adaptation across the county

A climate-resilient council

Introduction

Extreme weather events including heatwaves and intense rainfall, and increased flooding, can have a significant effect on vulnerable people, make service delivery more difficult, and place a stress on the infrastructure and buildings the council is responsible for.

Emergency response

We host the core team for the [Norfolk Resilience Forum](#) and is a category 1 responder under the Civil Contingencies Act. It will work with its partners to ensure that appropriate emergency response capabilities are maintained and that likely near-term scenarios including extreme heat, intense precipitation and flood are planned for and rehearsed.

Business continuity

As an employer and service provider for Norfolk, we recognise the importance of ensuring our buildings, staff and services can adapt and are resilient against the harmful impacts of climate change.

Our responsibilities at present are two-fold:

1. To ensure that physical infrastructure built now is resilient against future change
2. To ensure that services can be provided appropriately, and assets protected, when near-term severe weather events occur.

New infrastructure

We will specify new infrastructure to appropriate standards taking into account the likelihood of higher temperatures, increased risk of flood and more-intense precipitation in future.

Existing infrastructure

As we retrofit buildings our fabric-first approach will ensure that the fabric is maintained appropriately to protect against water ingress and flooding and that the effects of extreme heat and cold are mitigated through better insulation.

We will continue to maintain plans for the protection of heritage assets in the event of severe weather events.

Service provision

Most of our most vulnerable users are both more likely to suffer from the impacts of climate change and less able to be resilient in the face of it. We need to ensure our services are adapted to climate risk and realise what the impacts of climate change will mean for the delivery of our services. As we commission new services or re-specify existing ones we will consider near-term climate impact and whether any adaptation is needed. This may include both mitigations against relatively routine increases in rainfall and summer heat, where practicable, and requiring service providers to have appropriate business continuity plans in place for more extreme events.

Our staff

As a responsible employer we will ensure that our staff are suitably protected against extreme weather, whether through automating tasks, adapting work patterns or providing suitable vehicles, buildings and protective equipment.

A more resilient natural environment

Natural Capital

Natural Capital refers to the natural resources and environmental features that provide valuable goods and services, such as clean air, water and healthy soils. Norfolk has an abundance of natural capital assets, including rare freshwater habitats, marine protected areas, high-grade agricultural land and a broad range of sites under conservation management for the protection of internationally important wildlife species. These assets will come under increasing pressure as climate change alters weather patterns and water availability and allows new pests, diseases and invasive species to increase their reach. The geology of East Anglia gives Norfolk one of the fastest eroding coastlines in Europe, the risks of which will be heightened by further sea level rise. Preserving and enhancing Norfolk's natural assets will be essential to protecting not only the services they provide, but also other features that make Norfolk an attractive place to live and work: stable tourism and agriculture, and accessible green spaces for health and wellbeing.

As the authority responsible for delivering Norfolk's Local Nature Recovery Strategy, Norfolk County Council will draw on knowledge and evidence gained to date to define priorities for Nature Recovery in Norfolk that will form part of the national Nature Recovery Network – a joined-up system of wildlife-rich places. Alongside this work, which delivers the key objectives of the government's 25-year environment plan, we will support our public, private and NGO partners with the expertise and evidence they need to put nature-based solutions at the forefront of climate change adaptation.

Expected benefits will be noticeable across many areas including flood risk alleviation, food production and public health. This will not only mitigate the impact of change that is already taking place, but will increase our resilience to future climate risks.

In partnership with Suffolk County Council and the UEA we have released a [Natural Capital Compendium](#) documenting Norfolk's natural assets, including how land is currently being used, which provides a valuable resource for understanding what actions to recover nature will have the greatest impact on carbon sequestration and climate resilience. For example, among Norfolk's key Natural Capital assets with carbon-sequestration potential are the peat-rich soils of the Broadland area and south-west Norfolk. It is estimated that in the UK peatlands store over 3 billion tonnes of carbon, the equivalent to that stored in all the forests of the UK, France and Germany combined. Much of Norfolk's peatland area has degraded through drainage and cultivation, becoming a source of carbon emissions, rather than a carbon sink, so their restoration would bring significant benefits.

Pollinators

The declining numbers of pollinators must be addressed to ensure that negative impacts on biodiversity, crops, the sustainability of our farming communities and the public at large will be minimised.

Pollinators are a vital part of any healthy ecosystem. Without them, many species of plants would not be able to reproduce, causing the food chains they are part of to collapse. Approximately one-third of crops depend on pollinators for production, including many species grown in Norfolk like rapeseed.

The Norfolk Pollinator Action Plan contains several measures to ensure that pollinators are a key consideration in any activity carried out by the council that could affect their population levels. Progress on reported outputs and outcomes from the Pollinator Action Plan will continue to be fed back to the Environmental Policy Member Oversight Group at regular intervals.



Flood management

The challenge

Much of East of England's landscape is low-lying, with an average elevation of 35m and nearly a third of land below 20m. This leaves Norfolk highly susceptible to coastal and river flood risk, posing a threat to our residents and businesses across the county.

Coastal areas of Norfolk are predicted to experience some of the greatest increases in flooding hazard in the UK leading to service disruption, damage to buildings and flooded transport systems.

National surface water modelling produced by the Environment Agency in 2009 alongside the report "[Flooding in England - a national assessment of flood risk](#)" estimated that approximately 37,000 Norfolk properties may be at risk from flooding during a rainfall event with a 1 in 200 annual chance of occurring.

Lead local flood authority

We are the Lead Local Flood Authority (LLFA) for Norfolk. As the LLFA we are responsible for developing and maintaining a local flood risk management strategy for the county. With this, the County Council's key responsibilities are:

- to investigate significant flooding from any source
- to undertake works to manage flood risk from surface run-off and groundwater
- to provide advice to Local Planning Authorities on surface water drainage in major planning applications.

To date, the LLFA has coordinated major flood alleviation schemes for high flood risk areas of Norfolk such as Dereham, Watton and Saham Toney. CATCH is a joint EU-funded project between the County Council and Anglian Water. It was developed to reduce surface water in key flood risk areas within Norwich and better protect homes from significant flood risk by installing over 1,000 specially designed water storage containers.

Norfolk strategic flood alliance

The [Norfolk Strategic Flood Alliance](#) was established in 2021 to improve collaborative efforts between strategic partners involved in the prevention of flooding. Its goal is to ensure Norfolk communities and infrastructure are safer and more resilient to the risks of inland and coastal flooding as well as ensuring we have adequate water supplies during droughts.

The Alliance is a single point of focus and collaboration strategically for all flood-related challenges facing Norfolk.

Next steps

- Develop, in partnership with others, options for how flood water might be used to alleviate drought risks or managed in a more integrated multi-agency approach
- Progress a prioritised list of flood work that can be used to galvanise a collaborative approach to complex flooding sites

Public health, air quality & summer heat

The challenge

Climate change is a human issue with the potential to have significant health impacts on Norfolk's most vulnerable people, including the elderly, children and those in lower socioeconomic groups.

Although UK temperatures don't get as hot or cold as many other countries, people and our built environment are not acclimatised to extremes. Rising temperatures and an ageing population combine to make the challenge more pronounced, as older people, the young and those with existing health conditions are particularly vulnerable to extreme temperatures.

Public health

Climate change has been identified as the most important health threat of the century, but it is also the greatest opportunity to redefine the social and environmental determinants of health.

Reducing our contribution to the climate crisis and creating resilience to respond to the worst impacts of a warming climate is an opportunity to protect health.

Importantly, much of what can be done benefits both the environment and health. We know that increasing physical activity through active travel, making nutritious and sustainable food readily available and improving air quality and housing will reduce the risk of obesity, cardiovascular and respiratory disease, certain cancers and diabetes.

Equally, tackling climate change helps to address health inequalities.

Deprived areas have the poorest air quality while producing a lower proportion of housing and travel emissions and face disproportionately higher flood risk, particularly in coastal and rural zones.

Our Public Health Environment Team is developing an Environmental and Sustainability work programme covering air quality, transport and active travel, flooding and coastal erosion, housing and green spaces, and is working in partnership with others both in and outside the council to ensure public health implications are considered.

Air quality

Poor air quality is one of the largest environmental risks to public health across the UK. Long term exposure to air pollution can cause chronic conditions including respiratory and cardiovascular diseases.

NCC's efforts to decarbonise Norfolk's transport sector through the transition to electric buses, and the promotion of active travel options, will both reduce emissions and result in improved air quality.

Summer heat

As we continue to experience hotter summers we need to ensure our local communities adapt and are resilient to high temperatures.

Extreme heat is particularly hazardous in urban environments as the sun heats up hard surfaces. These structures absorb and reflect the heat of the sun during the day and radiate the heat throughout the night. As a result, urban shading, through tree canopy cover, is a critical adaptation measure. Most Norfolk people live in built-up areas - half our residents live in just 3% of the land area. Therefore, we and partners need to ensure we consider urban shade in the planning process for new developments.

The Norfolk Resilience Forum will continue to develop the multi-agency response to extreme heat. Its [Get Prepared website](#) is a useful resource for residents to prepare their homes, businesses and community for emergencies including heatwaves.



Focus area 6:

Ensure nature has space to recover and grow

Introduction

Actions that address climate change intersect with other challenges, including addressing biodiversity loss, improving food security and public health. Protecting and recovering natural spaces is a multi-faceted solution which benefits climate, people and nature at local, national and global scale.

Nature “recovery” refers to the process of restoring, enhancing or protecting natural habitats, ecosystems and biodiversity. It involves a range of actions to enhance and protect natural capital, such as planting trees, restoring degraded land, removing invasive species and connecting fragmented habitats, all with the aim of improving the health and resilience of ecosystems and increasing biodiversity – the number of species within those habitats.

This work is essential to address climate change, as healthy ecosystems absorb and store more carbon from the atmosphere. In Norfolk, 17% of territorial emissions are the result of the way land is used. Making more space for nature, in combination with supporting sustainable approaches to farming, land management, and development, will improve Norfolk’s resilience to climate change by reducing flooding, maintaining healthy soils, clean air and water, and sustaining food production.

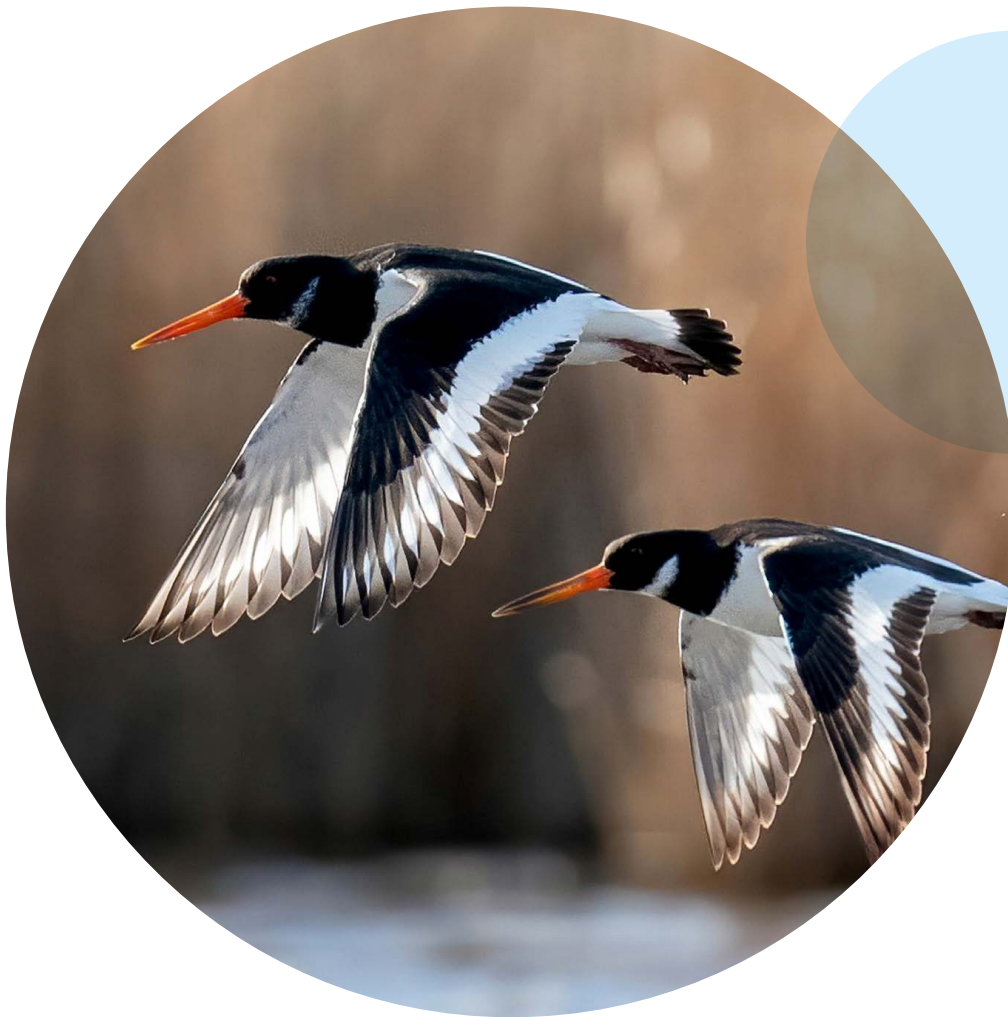
The UK Government’s net zero target requires an estimated 20% of current land use to change in support of carbon sequestration and nature recovery. This includes increasing forest cover, promoting low-carbon agriculture, extending and creating new protected sites, and the restoration of degraded soils and peatland.

A Norfolk & Suffolk Nature Recovery Partnership has been created with the overarching objective of delivering nature recovery across the two counties, including their coasts and associated marine waters. By bringing together a wide range of organisations – local authorities, non-governmental organisations, land and seabed owners and managers, academic institutions and statutory bodies – the partnership will enable joined-up thinking and pool knowledge and resources to achieve better outcomes for nature, including the delivery of Local Nature Recovery Strategies. These strategies are a flagship measure in the Environment Act 2021 that together will form a nationwide Nature Recovery Network.

Locally, they will allow priority areas for nature recovery to be defined, supplying the evidence and strategy needed to effectively target Biodiversity Net Gain.

Strategic priorities

1. Produce a Local Nature Recovery Strategy for Norfolk that prioritises areas for action focusing on species, habitats, landscapes and land use of importance to Norfolk with potential for carbon capture.
2. Embrace nature-based solutions for climate adaptation and mitigation
3. Ensure that our actions on land use and nature recovery reflect the interests of the farming community and public at large
4. In September 2024, we will put in place a new robust and resilient monitoring scheme for biodiversity.



Local nature recovery strategy

The challenge

Local Nature Recovery Strategies (LNRSs) are the Environment Act's main measure to halt the decline of nature in Britain.

Our LNRS will also help us to deal with climate change, by improving the landscape's resilience to climate change, providing natural solutions to reduce carbon and manage flood risk, and sustaining vital ecosystems such as improved soil, clean water and clean air.

The LNRS will underpin the national scale Nature Recovery Network (NRN) which will require coordination across administrative boundaries. Therefore, one of the challenges is to ensure a coordinated approach which will require working across administrative boundaries. Another challenge is to ensure that farming practices work hand-in-hand with nature recovery.

We are the responsible authority for delivering Norfolk's LNRS and is supporting Suffolk with expertise to deliver their LNRS through the Norfolk-Suffolk Nature Recovery Partnership. This will ensure the connectivity of habitats across administrative borders.

Current progress

The Environment Service's new geospatial analysis and communications group is developing a stakeholder-led process to create the LNRS, which will enable:

- prioritisation of areas for habitat development as part of new planning requirements (biodiversity net gain)
- identification of suitable locations for carbon sequestration through land-use change.
- landowners and managers to access future funding for managing land for nature.

We have started consultation with the farming community and developed a communication strategy to show the areas of opportunities.

We are also working with our neighbouring districts to ensure that administrative boundaries do not become a barrier for nature recovery.

Next steps

- Pending government guidance, we are gathering evidence from the farming community on their understanding and attitude to nature recovery. We are actively engaging to find tools that can ease effective communication and collaboration.
- We are also producing a biodiversity map to show areas of opportunity for nature recovery.
- We are committed to provide support to the farming community with our range of expertise and seeking funding opportunities to ensure that delivery is successful. This could include linking with developers to provide Biodiversity Net Gain and other blended finance.

Greenways and greenspaces

Current progress

Greenways to Greenspaces Programme

Increased pressure on the land has led to wildlife and nature becoming fragmented, with implications for how people can access Norfolk's green spaces.

Our Greenways to Greenspaces Programme aims to enable sustainable and green methods of access to green spaces for both visitors and residents. It focuses on habitat connectivity and promoting travel corridors for nature that increase biodiversity and promote recovery of native species.

Roadside Nature Reserve Scheme

As the responsible transport authority, we look for opportunities to manage highways assets, like verges, in a way that supports biodiversity. Norfolk's roadside verges are an integral part of the landscape, containing plant species that are now becoming nationally scarce.

The Roadside Nature Reserve (RNR) Scheme is run in partnership with the Norfolk Wildlife Trust. The partnership's purpose is to support these species-rich linear features which can act as wildlife corridors for many species. Twenty-three of the existing roadside nature reserves have been identified for expansion.

Roadside verges

We are working with Suffolk County Council to plant at least four nature recovery sites on roadside verges. We are identifying locations for cutting schedule changes to inform the emerging policy on verge management, and will assess the potential to utilise arisings to generate bio-electricity.

Trail network extension

In addition to the Local Cycling and Walking Infrastructure Plans, we will develop ten routes and at least 100km of all-ability trails by 2029. This delivers on a commitment we made in 2019 to extend the trails network to encourage everyone to explore and benefit from local countryside.

Trail network extensions conducted to date include new routes between Gressenhall Environmental Hub and Dereham (Wendling Way), and Norwich and Wymondham (Kett's Country Long Distance Path). A partnership with the Platinum Jubilee Committee will deliver five new walking routes - the Elizabeth Way (Heacham to King's Lynn), Wendling Way (Dereham to Gressenhall), Eastern Maritime Way (Great Yarmouth to Lowestoft), Chet River Circular (Loddon to Chedgrave), and West Acre Way (Gayton to Castle Acre).

One million trees

We continue to be staunchly committed to planting a million trees over five years across Norfolk. Planting has occurred on our own County Farms estate, as well as through community partnerships and local engagement.

We will continue to plant more trees that provide strategic benefits to Norfolk, whether that be for increasing biodiversity and supporting wildlife, providing recreation access to communities, contributing to carbon reduction and flood mitigation, or improving air quality. Underlying our Tree Planting ambition is the 'Right Tree, Right Place, Right Reason' philosophy.

By supporting the development of community tree nurseries, including a demonstrator site at our Environment Hub based at Gressenhall Farm & Workhouse, the project is also building a pipeline of locally sourced trees as well as engaging the public with its mission.

Protected landscapes

The challenge

Norfolk is home to nationally important landscapes that make significant contributions to the economy, environment and society. This includes the Broads National Park, the Norfolk Coast Area of Outstanding Natural Beauty (AONB) and the Wash and North Norfolk Marine Protected Area Network.

Climate change is already affecting these beautiful areas and the people who live there. Sea level rise and increased storm frequencies and intensities are affecting species distribution by altering habitats and niches. This has huge implications for the natural capital and ecosystem services upon which many species depend on. Walking and cycling routes are being affected by the same issue, with implications for social mobility, wellbeing and public access.

As Norfolk is home to a dynamic coastline, ensuring people are invested in the journey to make small changes that have a significant impact is essential. Behaviour change and responsible visits are two focal areas that can deliver tangible outcomes for landscape and nature recovery.

Drought is another huge challenge. Ensuring there is enough inland water for farmers to use and to support habitats for native species is going to become only more difficult as the effects of climate change take hold. Pond restoration is a key avenue for water to be retained in the landscape, ensuring there is enough resource to support both native and migratory species.

We support this work through projects, including the Farming in Protected Landscapes and Landscape Recovery projects. Both projects focus on the modern pressures that landowners face regarding the economics of farming, but also on the work they can do to improve biodiversity, increase habitat connectivity, restore rivers and diversify into carbon sequestration.

Partnership working that is grounded in local communities is essential in combatting all these problems. Ensuring these issues are dealt with in a 'Bigger, Better and More Joined-Up' way will enable people to connect to nature, incorporating advice from John Lawton's Making Space for Nature review (2010) and the later Julian Glover Landscapes Review (2019).

Next steps

To deliver on this ambition, we will:

- Lead a *Bigger, Better, More Joined-Up* approach to protecting Norfolk's landscapes
- Ensure policies and plans are aligned so that work is delivered effectively
- Re-brand Norfolk's protected coastal areas under the umbrella of the Norfolk Coast Protected Landscape to enable greater public understanding and support
- Develop our strategies, plans and policies with local people so there is communal sense of place-based belonging and ownership
- In line with the government's "30 by 30" commitment we will review Norfolk's protected areas to increase these within the county, beginning with the Brecks.
- Deliver the Norfolk Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy
- Redesign management plans to deliver a new approach for land and sea to address these challenges and provide more inclusive action.





Focus area 7:

Engage and collaborate

Introduction

Mitigating and adapting to climate change whilst protecting our local biodiversity is a huge challenge. Success is reliant upon close collaboration and engagement across all parts of society, including the public sector, businesses and community groups.

Strategic priorities

1. Work closely with the Norfolk Climate Change Partnership and the Integrated Care System to take forward mitigation and adaptation activities where collaboration can add maximum value
2. Create a carbon conscious culture at NCC ensuring we engage with staff on the climate agenda
3. Develop and deliver a communications strategy to ensure that stakeholders are aware of the Climate Strategy, understand their role and know how to get involved.
4. Facilitate a series of targeted engagement workshops with key stakeholders to refine specific aspects of the strategy and developing evidence-based action plans

Norfolk Climate Change Partnership

Alongside other public sector bodies, We will continue to be an active member of the Norfolk Climate Change Partnership. We will work collaboratively on value-added priorities which have a collective benefit for Norfolk as a whole, but do not duplicate the effort or work carried out by other groups or individual authorities. The three priorities for the NCCP are:

- Develop a sustainable energy plan to decarbonise energy supply for Norfolk and improve distribution of energy to citizens
- Reduce and conserve energy demand on the system through retrofitting of buildings through behaviour change, enabling a fabric first approach
- Enable greener sustainable transport solutions including a focus on behaviour change and where appropriate use statutory powers.

Internal engagement

Staff engagement

We aim to create a carbon-conscious culture at among our staff to ensure that we make the right decisions today to mitigate the impact of climate change. Through our smarter working programme, we aim to inspire and inform colleagues to take responsibility to consider carbon within corporate and personal decision making.

As an employer we have a role in supporting our employees to adopt and bring about a beneficial shift in behaviour and practice to support our climate ambitions. We will:

- Increase the promotion of greener employee benefits to all new starters and existing employees.
- Refresh our Norfolk Rewards offer to include environmentally friendly offers.
- Engage with services, staff and trade unions to develop alternative business travel arrangements that support the phasing out of diesel and petrol cars for council business.
- Improve the range of employee discounts with public transport to encourage greener travel.

Member engagement

The Environment Members' Oversight Group, chaired by the Cabinet Member for Environment and Waste, is a forum to monitor progress against the obligations set out in NCC's Environment Policy.

This cross-party member group meets regularly throughout the year to hear updates from relevant officers and guest speakers that are related to the operationalisation of our Environmental Policy. It is a chance for members to give guidance, offer feedback and suggest ways to move items forward.

Carbon literacy training

We recognise that knowledge is a critical requirement for change. We are developing a Carbon Literacy training programme across the council to empower the organisational shift towards low-carbon behaviour and practice, accelerating our journey to net zero. The Carbon Literacy programme will provide learners with an awareness of the carbon dioxide costs and effects of everyday activities and the ability and motivation to reduce emissions, on an individual, community and organisational basis. This training opportunity will be provided for elected members, senior officers and staff across the organisation.

External engagement

Engagement with our residents

We will continue to run campaigns with its partners to promote carbon-reducing schemes and help change behaviours, as well as promoting to residents the work of NCC and its partners to reduce the impact of climate change.

Where required we will engage or consult with residents to ensure that their views are listened to, which will help shape future planning and delivery.

For corporate issues, we will feed residents' priorities through to inform our strategic direction. All relevant consultations are promoted on our consultation hub.

When seeking views on climate issues, we will predominantly engage with the [Norfolk Residents' Panel](#) – a group of around 2000 residents from across Norfolk who are invited to take part in surveys, focus groups and online sessions throughout the year.

As we progress on our climate action, we will continue to keep these communication channels with our residents open to support greater positive change.

Engagement with faith groups and the voluntary sector

Our approach to external engagement will depend on the nature of the activity we are undertaking. However, we will continue to develop our relationship with the voluntary, community and social enterprise sector, involving these organisations in developing our approach to climate change.

The council's funding of the [Empowering Communities Partnership](#) continues to support infrastructure activity that advances our climate aims, for example, the recruitment of volunteers that hugely contribute to sustainability projects across Norfolk.

Likewise, we acknowledge the role played by Norfolk's faith groups and will continue to nurture this relationship. Both faith groups and the VCSE sector can reach communities in a way that we can't and help build a solid base for achieving our strategy. Delivering digital inclusion projects is just one example, where working together is already bringing benefits.

Engagement at the parish level

NCC will continue to work through the [Norfolk Association of Local Councils \(Norfolk ALC\)](#) to engage with individual parish councils and

councillors to ensure that climate change remains at the forefront of hearts and minds.

Local parishes have been in touch about tree planting, which has carbon, biodiversity and public health benefits. Additionally, some parish councils have been successful in attracting funding for EV charging infrastructure, which helps in the transition from fossil-fuelled vehicles to EVs.

Academia and research

Norwich Research Park

Norwich Research Park is one of the largest single-site concentrations of research in food, genomics and health in Europe. It is positioned to play a key role in food and environmental research that will support climate resilience.

The County Deal notes that “Norfolk’s vibrant research cluster is well-placed to realise the potential for innovation that the Genetic Technology (Precision Breeding) Bill will unlock for shaping our future food system in a changing climate. The Government is committed to moving roles out of Greater London and closer to the policy issues they are addressing ... The Government will continue to work with departments on the potential for any future relocations of Civil Service roles to Norfolk as part of the Levelling Up agenda.” NCC will continue to work hard to promote this agenda.

University of East Anglia

NCC has close ties with the University of East Anglia (UEA), and we have worked together on various collaborations.

The Natural Capital Compendium was commissioned by NCC and put together by UEA, and is an extensive overview of Norfolk’s Natural Capital and how it will be threatened by climate change.

UEA is also leading the mapping element of the work on Local Nature Recovery in Norfolk, highlighting the close-working between a world-leading academic institution and local authorities.

Tyndall Centre for Climate Change Research

UEA is home to the headquarters of the Tyndall Centre for Climate Change Research partnership of universities, an internationally renowned institution for combatting climate change. Its Executive Director, Asher Minns, is an observer on the Norfolk Climate Change Partnership.

Schools and academy trusts

We will continue to communicate with maintained schools through established engagement channels. The most recent publication has set out our activities to address carbon reduction for existing buildings as well as providing information on reducing energy via behaviours. In addition, there are regular meetings with Academy Trust leaders where good practice can be shared. All new school buildings are moving close to carbon net zero in use, with increased PV (Photo Voltaic) panels, ASHPs (Air Source Heat Pumps) and EV charging as standard.

The Integrated Care System

The Integrated Care System (ICS) brings together upper tier authorities with the NHS to plan and deliver joined up health and care services across Norfolk. We are a member of the ICS net zero Executive Leads Group, supported by the Green Plan Delivery Group. This provides a supportive forum for discussion of operational progress, spread of best practice, areas of opportunity for collaboration, and any support needs arising through delivery.

Private sector engagement

The goals in this strategy can only be achieved through close partnership working with many stakeholders and organisations, including the private sector. Many Norfolk-based companies such as Aviva and Holkham Hall and Estate are leaders in their sector in terms of sustainability, and we will ensure we work closely with business partners to deliver our collective targets and goals.

As part of our efforts to galvanise private sector engagement, we are arranging a one-day conference to engage with Norfolk's business community on this theme. The event will engage with the business community on our climate strategy and create space for business leaders to share insights on embracing the opportunities of clean growth.

Partnership working

Collaborative work across partner organisations and key stakeholders is pivotal to delivering effective change for Norfolk.

Here are just some of the partnership organisations that we are involved with relating to the climate agenda.

Norfolk Strategic Planning Member Forum

Provides a forum for tackling planning issues relating to housing, economic growth, infrastructure and the environment.

Norfolk and Suffolk Nature Recovery Partnership

A collective of organisations including Norfolk and Suffolk County Councils, with the goal of delivering nature recovery across Norfolk and Suffolk through healthier and more resilient natural systems on land and coast.

Norfolk Coast Partnership

A partnership to manage the Norfolk Coast Area of Outstanding Natural Beauty.

Norfolk Strategic Flooding Alliance

Bringing together all partners involved in planning for and responding to flooding in Norfolk.

Transport East

Brings together the local transport and planning authorities, and business leaders with Network Rail and National Highways to provide strategic oversight on transport priorities across the region.

Transport for Norwich

A partnership between NCC, Norwich City Council and Broadland and South Norfolk Councils to improve accessibility and encourage more sustainable forms of transport.

Norfolk Resilience Forum

Provides information to the public to help them plan and prepare for an emergency that may affect our county.

New Anglia Local Enterprise Partnership

A partnership working with businesses, local authority partners and education institutions to drive growth and enterprise in Norfolk and Suffolk.

Norfolk Waste Partnership

Provides a forum for Norfolk’s eight local authorities to discuss best practice and drive improvement within the waste sector.

Norfolk Climate Change Partnership

A partnership centred around tackling climate change across the county, bringing together Norfolk’s eight local authorities, the Broads Authority, and other key stake holders.



Glossary of terms

Biodiversity Net Gain (BNG)

An approach to development, and/or land management, that aims to leave the natural environment in a measurably better state than it was beforehand.

Carbon

Used as abbreviation for carbon dioxide (CO₂) or carbon dioxide equivalent

Carbon budget

An amount of carbon dioxide that a country, company, or organisation has agreed is the largest it will produce in a particular period.

Carbon dioxide equivalent (CO₂e)

A standard unit for measuring carbon footprints. It expresses the impact of each different greenhouse gas in terms of the amount of CO₂ that would create the same amount of warming, using global warming potentials.

Carbon offset

Avoided, sequestered, or captured emissions that are used to compensate for emissions that occur elsewhere.

Circular economy

An economy in which resources are kept in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life

Climate adaptation

Actions to adjust to the actual or expected changes in climate. These are necessary actions to help manage the risks that come with the impacts of climate change

Climate mitigation

Actions to prevent, reduce or capture greenhouse gas emissions.

Climate resilience

The ability to cope with longer term climate changes

Greenhouse gas (GHG)

Gases in the Earth's atmosphere that trap heat.

Green economy

A low carbon, resource-efficient and socially inclusive economy.

Green infrastructure

A network of multi-functional green space and other green features which can deliver quality of life and environmental benefits for communities

International Panel on Climate Change (IPCC)

An intergovernmental body of the United Nations leading on the monitoring and assessment of all global science related to climate change.

Local Enterprise Partnership (LEP)

Business-led partnerships between local authorities and local private sector businesses.

National Adaptation Programme

The government's strategy to address the main risks and opportunities identified in the UK Climate Change Risk Assessment





Norfolk County Council



www.norfolk.gov.uk/Climate