

CLIMATE EMERGENCY STRATEGY TO 2030

Setting the strategic direction
for climate action and net zero
ambitions for North Kesteven
District Council and the
District of North Kesteven.



OUR ENVIRONMENT PRIORITY:

To meet the challenge of climate change, ensuring integration and delivery of the Climate Action Plan across all NK Plan priorities.

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Review Date: 2025/26

ACTON
CLIMATE
— IN NORTH KESTEVEN —


North Kesteven
DISTRICT COUNCIL

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Foreword

Welcome to our Climate Emergency Strategy.

In 2022, we took the opportunity to reflect on the climate action progress we have made so far, following our unanimous Climate Emergency declaration in July 2019 and publication of our Climate Emergency Strategy and Action Plan in 2020. This refreshed Climate Emergency Strategy, and the related Climate Emergency Action Plan, will drive forward our ambitious pathway to achieving net zero by 2030.

To respond to the global climate emergency with the urgency required, North Kesteven District Council is determined to be at the forefront of the climate response. We will continue to support our communities and businesses as we all work towards a just and sustainable net zero future. As part of this, we will continually ensure our actions are informed by the best available science, policy, and best practices.

Whilst we recognise the challenges our ambitious endeavours may face, the Council is determined to lead by example, working to rapidly reduce CO₂ emissions and to improve our climate resilience. As a Council, we believe collaboration and partnership working will play a key role in achieving our net zero targets.

Throughout this Strategy and our Action Plan, we strive not only to tackle the climate emergency but to also ensure that our communities, our environment, and our economy all experience additional positive impacts as we work towards net zero to create a better future for North Kesteven.

We look forward to building a resilient net zero future for North Kesteven, and hope that you will continue to engage with us to tackle the climate emergency.



Cllr Richard Wright
Leader of the Council



Ian Fytche
Chief Executive of the Council

Section 1

Introduction

- Our Climate Emergency Strategy in a Page
- Introduction



Our Climate Emergency Strategy in a Page

A whistle-stop tour of our Climate Emergency Strategy.

The Council's vision for our Climate Emergency Strategy is to achieve our ambitions for a just and sustainable transition to net zero by 2030 for both North Kesteven District Council (NKDC) and the District of North Kesteven, supported by mitigation measures to reduce emissions and adaptation measures to improve resilience to the effects of climate change. Our Climate Emergency response approach is set out in this Climate Emergency Strategy and in our Climate Emergency Action Plan, referred to as the Strategy and the Action Plan throughout. For clarity, each reviewed Action Plan includes the associated delivery year in the name. These documents are fundamentally integral to one another, shaping the Council's journey towards our 2030 net zero targets.

The diagram shows the nine themes used to categorise our climate actions.

Our Climate Emergency Strategy establishes three strategic aims:

1. For North Kesteven District Council to achieve net zero 2030 through a 95% reduction in Council Greenhouse Gas emissions compared to 2008/09 levels, with offsetting and/or negative emissions technologies to be used only for the final 5% of emissions from hard to eliminate sources.
2. To support the District of North Kesteven to achieve the aspirational net zero 2030 target through a 95% reduction in carbon emissions from energy compared to 2005 levels, with offsetting and/or negative emissions technologies to be used only for the final 5% of emissions from hard to eliminate sources.
3. To support a just transition to net zero to create a sustainable future for North Kesteven in alignment with our Community Strategy 2030 vision to create a District of Flourishing Communities.

1. Decision Making

2. Communication and Engagement

3. Adaptation

4. Buildings

5. Transport

6. Natural Environment

7. Energy

8. Industry

9. Waste and Water



For more information and to keep up to date with NKDC's climate emergency response, net zero plans, and to find our annually updated Climate Emergency Action Plan, please visit our website or sign up for our Act on Climate e-newsletter. www.n-kesteven.gov.uk/residents/climate-action

Introduction

An Introduction to our Climate Emergency Strategy.

The science is clear, we must urgently act to reduce emissions and work diligently to play our part in limiting global temperature increases to 1.5°C as set out by the Paris Agreement. In line with national Government policy, net zero is at the forefront of Council activities in North Kesteven as we work to create a safe and sustainable future for our District.

Climate change is a global emergency which requires rapid local action, and North Kesteven is determined to be part of the solution. We must take swift and decisive action to address the climate emergency, using both mitigation and adaptation measures to create a climate resilient District which protects our residents, businesses, and environment, and creates a sustainable future for us all. We must endeavour to work towards a just and equitable transition to net zero, both within the boundaries of our District, and further afield. As part of this, we must ensure that climate action helps to reduce inequalities and does not exacerbate or entrench further issues.

Climate action is embedded in everything North Kesteven District Council do. It is vital that we understand and account for the impacts our activities and the decisions we make have on the climate and the environment. This is why our refreshed Climate Emergency Strategy, alongside our 2030 Community Strategy, the NK Plan, and the Central Lincolnshire Local Plan all strive to create a sustainable and resilient future for the District and all who live and work here. One that protects our environment, our homes, our economy, our communities, and our council, and helps us to create a District of flourishing communities.

¹ Met Office (2022) Climate Change Adaptation webpage, <https://www.metoffice.gov.uk/weather/climate/solutions/climate-change-adaptation> accessed: 06.06.2022

² Met Office (2022) Climate Change Mitigation webpage, <https://www.metoffice.gov.uk/weather/climate/solutions/climate-change-mitigation> accessed: 06.06.2022

Scientific evidence, best practice, and engagement with expert partners have a key role in shaping and informing our climate emergency response as a Council. In 2021, consultants Anthesis produced analysis for the Council on agriculture, land use & domestic emissions mapping and analysed our 2020 Climate Emergency Action Plan. These reports have helped us to drive forward ambitious climate action for the whole District. Inspired by the positive feedback and recommendations from our LGA Corporate Peer Challenge in 2021, costing considerations have been incorporated into our Action Plan where appropriate. For more information on how we approach actions which are challenging to fund, please see our Climate Emergency Action Plan and our Climate Emergency Funding Prospectus.

Adaptation: the adjustments needed from individuals, communities and countries in response to changes to our planet's climate.¹

Mitigation: efforts to reduce or remove emissions of greenhouse gases such as carbon dioxide (CO₂) and methane (CH₄) which are causing our planet to warm.²



Introduction

An Introduction to our Climate Emergency Strategy.

This refreshed Strategy has been developed as part of our 2022 review of our Climate Emergency Strategy and Action Plan, which was produced in 2020, referred to as CESAP 2020 throughout this document for clarity. As part of the 2022 refresh, the decision was made to split our Climate Emergency Strategy (CES) and our Climate Emergency Action Plan (CEAP) into separate documents. For ease, throughout this document the Climate Emergency Strategy is simply referred to as the Strategy, and the Climate Emergency Action Plan referred to as the Action Plan.

This Strategy sets out the strategic direction for climate action and our net zero ambitions for North Kesteven District Council and the District of North Kesteven. The Action Plan sets out the specific actions we will take, and includes detailed information on action timeframes, scales, lead officers, and more. The Strategy and Action Plan set out how the Council are working to address the climate emergency and support the journey toward a sustainable net zero future, in alignment with NKDC's Our Environment priority. Climate action is also embedded into all officer roles and is included in our Service Delivery Plans.

Net zero:

Net zero means achieving a balance between the carbon emitted into the atmosphere, and the carbon removed from it. This balance – or net zero – will happen when the amount of carbon we add to the atmosphere is no more than the amount removed.¹

¹Energy Saving Trust., (2021), 'What is net zero and how can we get there' <https://energysavingtrust.org.uk/what-is-net-zero-and-how-can-we-get-there>



Our Climate Emergency Action Plan is reviewed and updated annually. The most recent version can be found on our website.

North Kesteven's net zero targets set our ambitious aim to work towards net zero CO₂ emissions from energy by 2030. These net zero targets are based on the best available science and climate policy as we seek to drive rapid climate action across both the Council and the District. To monitor our progress towards net zero, we continue to focus on CO₂ as it is the main Greenhouse Gas (GHG) emitted from human activities and has the most readily available data to inform our emissions monitoring.

There are wide range of additional benefits to working toward net zero, with opportunities to support the creation of new net zero aligned jobs and infrastructure which will help support sustainable social and economic growth through the District.

Section 2

NKDC and the Climate Emergency

- **Our Existing Climate Emergency Commitments**
- **Aligning Our Climate Action with International and National Climate Change Commitments, Policy, and the Best Available Science**
- **How Social Standards and Planetary Boundary Considerations Shape Our Approach to Climate Action**
- **How Our Climate Works, The Greenhouse Effect, and The Impacts of Climate Change**
- **Climate Action and Co-benefits**



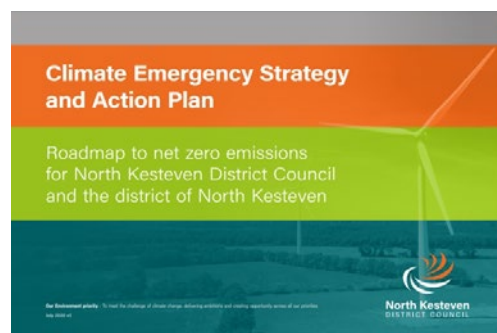
Our Existing Climate Emergency Commitments

Our 2019 Climate Emergency Declaration and 2020 Climate Emergency Strategy and Action Plan.

As a local authority, we believe it is vital to embed climate action in all we do. In 2019 NKDC declared a Climate Emergency, being the first Lincolnshire authority to pass such a declaration, and set our net zero 2030 targets. The full declaration is presented here.

Building upon our Climate Emergency Declaration¹, developing our Climate Emergency Strategy and Action Plan (CESAP 2020) was the logical next step. The CESAP 2020 contained 9 themes, 72 actions and 150 sub-actions. We have now reached a point to review our climate emergency response. This refreshed Climate Emergency Strategy is to run to 2030, and the refreshed Climate Emergency Action Plan will be updated and reviewed annually.

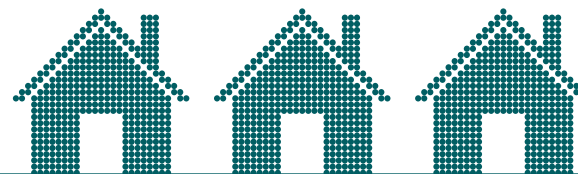
The original CESAP 2020 has been used as the basis for both this refreshed Strategy, and for our refreshed Climate Emergency Action Plan. Each reviewed Action Plan includes the year in the name for clarity, for instance our Climate Emergency Action Plan 2022/23 is set to run for the 2022/23 financial year.



¹ North Kesteven District Council Unanimous Climate Emergency Declaration by Full Council 11th July 2019
<https://democracy.n-kesteven.gov.uk/ieListDocuments.aspx?CId=297&MId=7828&Ver=4>

On 11th July 2019, Full Council unanimously resolved that, This Council:

1. Calls upon Her Majesty's Government to explore supporting our Council in implementation of the Sustainable Development Goals through a funded partnership role;
2. Will consider how our local priorities link with the overall ambitions of the Sustainable development goals; and
3. Declares a 'Climate Emergency', and works with residents, businesses and other partners to tackle climate change, lobbying for support to address this emergency by 2030.
4. Recognises the progress already achieved in reducing greenhouse gas emissions from North Kesteven District Council operations by 67.05% in ten years and the 25% per capita reduction across the district.
5. Supports the development of a new policy and strategy for the 'Our Environment' priority within the NK Plan following scrutiny review and Executive Board consideration.
6. Supports the development of pilot programmes designed to advance the Sustainable Development Goals, focused on cost effective innovation to enable the district to reduce reliance on fossil fuel technology.



Our Existing Climate Emergency Commitments

Timeline of key NKDC climate commitments.

The Council has long been committed to driving forward action to address climate change, and in 2008 we joined over 330 councils in signing the Nottingham Declaration and produced our first Climate Change Strategy (2008-2013). In the following years, we have continued to embed climate action across the Council, as is shown in the following timeline.

The activities captured in this timeline represent just a few of the actions NKDC has already taken to address the climate emergency. This timeline focuses on climate commitments, strategy, and policy work and is by no means intended to capture all the climate actions and climate-related projects the Council have supported over this time-period. These activities are just the beginning, and we look forward to continuing to lead and inspire climate action across North Kesteven and beyond across the 2020s and into the future.

2008	Nottingham Declaration signed, voluntary pledge to address issues of climate change
	NKDC GHG emissions reporting baseline established
	Annual NKDC GHG emissions monitoring and reporting established
2009	Climate Change Strategy 2008-2013
2012	LGA Climate Local initiative 2012 - focused on inspiring local action on climate resilience
2013	Low Carbon NK plan 2013-2020
2016	Climate change threats identified in District SWOT
2018	Our Environment priority approved in NK Plan
2019	Climate Emergency Declaration
	Plastics Reduction Policy introduced
	Climate Action colleague engagement workshop
2020	Alignment of Council activities with UN SDGs
	Climate Emergency Strategy and Action Plan produced
2021	UK100 pledge signed by the Leader committing to taking bold action towards net zero
	Concept of the Green Thread introduced
	Our 2030 Community Strategy approved
	Our Environment priority revised and updated
	Updated NKDC Environment Policy 2021-2026 introduced
	Heckington Show climate pledges event
	North Kesteven District Council Agriculture, Land Use & Domestic Emissions Mapping report and Climate Emergency Strategy and Action Plan analysis reports produced by consultants Anthesis
2022	LGA Corporate Peer Challenge - challenging us to establish a costed roadmap to net zero
	Refreshed Climate Emergency Strategy and Climate Emergency Action Plan produced
	Review of Environment Policy



Our Existing Climate Emergency Commitments

Embedding environmental and climate consideration in all we do.

Our Green Thread, first set out in the NK Plan¹, shapes how we embed climate and environmental action into everything we do as an organisation. The Green Thread sets out our vision of a District of flourishing communities, outlines our five priorities, and sets out how this is woven into all work by all Council colleagues, including through our Community Strategy 2030².

We have established five priorities, they are Our Communities, Our Council, Our Economy, Our Environment, and Our Homes, each of which form a key aspect of achieving the Council's vision for a District of flourishing communities by 2030. The Our Environment theme is especially vital to our climate action as it sets out how we intend to meet the challenge of climate change and ensures that the delivery of our Action Plan is integrated across all the Council does.

Climate and environmental considerations are firmly embedded in everything NKDC colleagues do. Internally, this commitment is reinforced through the NKDC Environment Policy 2021-2026, as well as within our decision-making process through sustainability impact considerations. The direction of travel for the Central Lincolnshire Local Plan is also fully aligned with our climate aspirations, working to support decarbonisation of buildings, support renewable energy generation, and working to protect our natural environment across the District and beyond.

¹ North Kesteven District Council: The NK Plan 2021-24
<https://www.n-kesteven.gov.uk/your-council/facts-and-figures-about-the-council/council-performance/previous-nk-plans/>

² North Kesteven District Council Community Strategy 2030 <https://www.n-kesteven.gov.uk/your-council/how-the-council-works/key-plans-strategies-and-policies/strategies/our-community-strategy>

OUR GREEN THREAD

VISION

- ▶ A District of Flourishing Communities

PURPOSE

- ▶ A prosperous, sustainable District, delivered through effective & efficient public services that meet local priorities, the challenges of climate change and recovery from the economic and social impacts of Covid-19

PRIORITIES

Our COMMUNITIES

- ▶ To enhance the wellbeing, safety and health of all our communities; inspiring and supporting a sustainable and flourishing future

Our COUNCIL

- ▶ To aspire to be a high performing, value-for-money, Council that is agile and embraces the challenges and opportunities of the future

Our ECONOMY

- ▶ To enable all of our communities to flourish as part of the economic recovery from Covid-19, as well as the opportunities from the Green Economy

Our ENVIRONMENT

- ▶ To meet the challenge of climate change, ensuring integration and delivery of the Climate Action Plan across all NK Plan priorities

Our HOMES

- ▶ To deliver sustainable housing growth and pursue energy efficient development to meet the current and emerging needs of all our communities

AMBITIONS

- ▶ The strategic sense underlying our ambitions and the desired outcomes they point towards are outlined in the 2030 Community Strategy. In response to the challenges we face, our ambitions seek to achieve our aspirations within each priority – as detailed here in the NK Plan.

VALUES

- ▶ The manner in which we work to deliver our services:
High performing, honesty, people-focused, professionalism, teamwork

TEAM PLAN

INDIVIDUAL PLANS

The Green Thread is the link that connects a colleague's individual actions, at any level throughout the organisation, directly to our overarching vision and purpose and illustrates too how they contribute to fulfilment of our climate aspirations. Strong and apparent, this link is inherent within our culture and values, helping everyone to remain focused on their purpose and potential for delivering excellence – and meaningful climate action.

Aligning Our Climate Action with International Climate Change Commitments and Policy

How embedding international targets into District scale action shapes NKDC's climate action approach.

International, national, and regional policy form the cornerstone of local policy and decision-making. As such, NKDC will always follow the most up to date national policy direction to ensure we continue to play our part in the global mission to tackle the climate emergency and support the transition towards net zero.

Aligning our District-scale climate emergency response with key global targets and ambitions, such as the Paris Agreement targets to limit global temperature rise to 1.5°C, and the ambitions set out in the Glasgow Climate Pact created at COP26, provides clear direction on the vital steps we must all take to limit emissions and work towards net zero. This international context is essential in shaping how we as a local authority work towards creating a just, fair, and equitable transition to net zero.

Climate action cannot sit in isolation, and must also incorporate social justice efforts, which expands upon the Council's existing alignment of our ambitions with the UN's Sustainable Development Goals¹. This strategy recognises that it is essential to support a just transition to net zero and leave no one behind. We must tackle the climate emergency but also pursue sustainable development across the District of North Kesteven and the globe to work towards achieving a better and more sustainable future for us all.

¹ UN Sustainable Development Goals <https://sdgs.un.org/goals>

² UNFCCC: The Paris Agreement <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

³ COP26 Presidency Outcomes: The Climate Pact (2022) <https://ukcop26.org/wp-content/uploads/2021/11/COP26-Presidency-Outcomes-The-Climate-Pact.pdf>

The Paris Agreement 2015 (COP21) set the international aim to limit global temperature rise to well below 2°C, and preferably 1.5°C, compared to pre-industrial levels². In the years since the Paris Agreement was signed, efforts to ensure climate action is Paris Agreement aligned and work to 'keep 1.5°C alive' have become core aspects of national and international climate action.

COP26 – hosted in Glasgow in 2021, COP26 brought together representatives from almost 200 countries to focus on accelerating climate action and achieving the goals set out in the Paris Agreement³. The Glasgow Climate Pact was created and signed by all attending countries and centred on 'keeping 1.5°C alive'. The pact also set out commitments for the phase down of unabated coal power, the strengthening of 2030 emissions reduction targets, and the need to increase financial resources for climate action and adaptation.

SUSTAINABLE DEVELOPMENT GOALS



Aligning Our Climate Action with National Climate Change Commitments and Policy

How NKDC's climate action approach is shaped by national and regional policy.

Our approach to climate action has always been and continues to be shaped by national policy. In recent years, a wide range of national legislation, policies, and strategies have been published which set out the UK's approach to addressing climate change.

In 2008, the Climate Change Act¹ committed to the UK Government and the Climate Change Committee producing Climate Change Risk Assessments² every five years. The amendment of the Climate Change Act in 2019¹ enshrined the UK's 2050 net zero target in law. The UK's Net Zero Strategy published in October 2021³ established the national pathway to achieve this target, with decarbonisation pathways for different sectors proposed.

A key aspect of achieving any net zero ambitions is the decarbonisation of energy and transport. National strategies such as the Heat and Buildings Strategy⁴, the Decarbonising Transport Plan⁶, the British Energy Security Strategy⁵, and the UK EV Infrastructure Strategy⁷ are just a few of the core documents that set out the national approach which we as a Council use to shape our own activities. The 2021 Environment Act⁸ further sets the national direction for environmental protection.

NKDC is committed to supporting climate action across Lincolnshire and continually strives to support and engage in collaborative opportunities with partners and other local authorities. As a planning authority, North Kesteven District Council is already actively working with its partners to promote climate action and reduce Greenhouse Gas emissions through the policies of the Central Lincolnshire Local Plan. We actively engage in county-wide efforts to support sustainability and align with efforts across Lincolnshire including Lincolnshire County Council's Green Masterplan⁹, launched in 2021. We continue to engage with public bodies such as the Midlands Net Zero Hub, and with other regional bodies to help drive impactful and lasting climate action and emissions reduction to address the climate emergency.

Regional and local collaboration is increasingly important as we all seek to tackle the climate emergency, and NKDC is committed to supporting and engaging with joint climate action opportunities. We continue to build on our established history of stakeholder and resident engagement on this vital agenda and are determined to take a leading role in the climate response and learning from best practice across the public sector.



¹ UK Climate Change Act 2008 (2008 and 2019) <https://www.legislation.gov.uk/ukpga/2008/27/contents>

² UK Climate Change Risk Assessment 2022 (2022) <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022>

³ UK Net Zero Strategy (2021) <https://www.gov.uk/government/publications/net-zero-strategy>

⁴ UK Heat and Buildings Strategy (2021) <https://www.gov.uk/government/publications/heat-and-buildings-strategy>

⁵ UK British Energy Security Strategy (2022) <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

⁶ UK Decarbonising Transport Plan (2021) <https://www.gov.uk/government/publications/transport-decarbonisation-plan>

⁷ UK Electric Vehicle Infrastructure Strategy (2022) <https://www.gov.uk/government/publications/uk-electric-vehicle-infrastructure-strategy>

⁸ UK Environment Act (2021) <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>

⁹ Lincolnshire County Council Green Masterplan (2021) <https://www.lincolnshire.gov.uk/greenmasterplan>

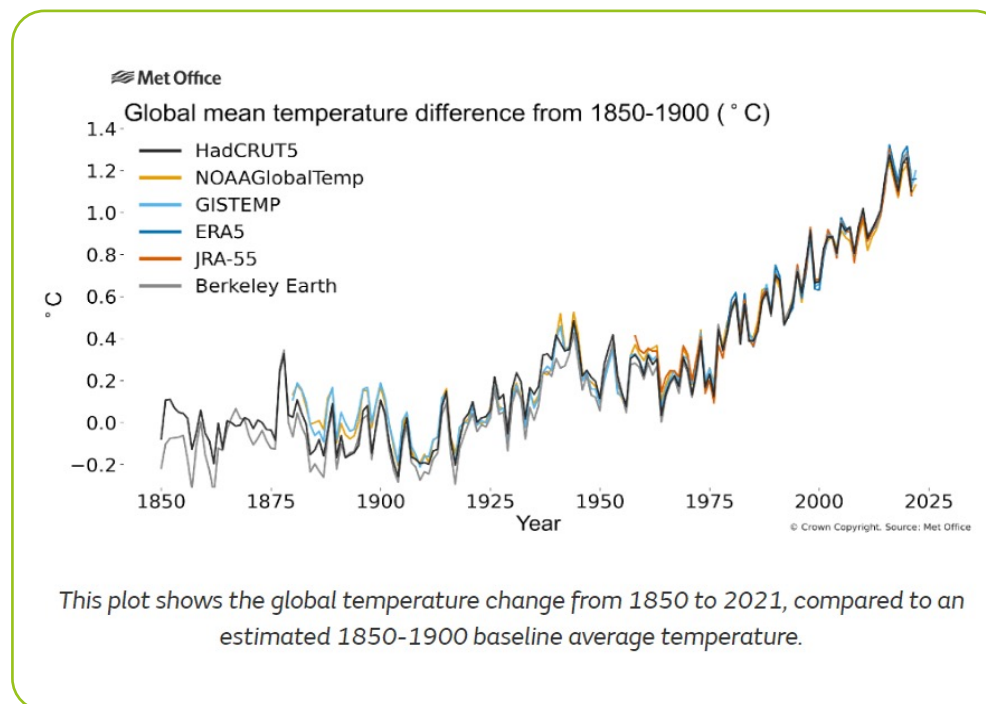
Aligning Our Climate Emergency Action with the Best Available Science

How the best available science is embedded into our District scale climate action approach.

Climate science forms the backbone of our climate action approach. It provides us with substantial evidence which informs how we work to tackle the climate emergency head-on. The stark scale of climate change is highlighted in the Met Office graph¹ to the right. The impacts of human-induced climate change are evident in the sharp rise in global mean temperature difference from 1850 onwards, with the rise of industry.

Research by organisations such as the IPCC (Intergovernmental Panel on Climate Change), the Met Office, and the World Meteorological Organisation provide reliable insights into the best available science which inform policymaking around the world. This scientific evidence helps us as a Council to frame our local actions in a global context. The IPCC's most recent Assessment Report 6 (AR6)² identified that climate change risks are getting increasingly complex and harder to manage, and that there is an increase in simultaneously occurring climate hazards, which pose a greater threat to people and planet³.

Understanding the hazards and risks posed by climate change is vital to inform our climate emergency response. Resources such as the UK's Climate Change Risk Assessment⁴ provide valuable insights into the type and scale of risk posed and help us to understand this in the context of the District. Resources including the Tyndall Centre's Carbon Budget Tool for Local Authorities highlight the scale of emissions reductions needed to play our part in keeping to the 1.5°C temperature target of the Paris Agreement.



To build further upon national and international evidence, NKDC commissioned experts Anthesis to produce Agriculture, Land Use and Domestic Emissions Mapping for the District. Given the District's rural nature, this dedicated research gives a much clearer picture of the specific situation North Kesteven faces and directly informs our climate emergency response.

¹ Met Office, Met Office Website: What is Climate Change

<https://www.metoffice.gov.uk/weather/climate-change/what-is-climate-change> accessed:07.06.2022

² IPCC (2022) AR6 <https://www.ipcc.ch/assessment-report/ar6/>

³ IPCC (2022) AR6 Summary for Policymakers Headline Statements <https://www.ipcc.ch/report/ar6/wg2/resources/spm-headline-statements/>

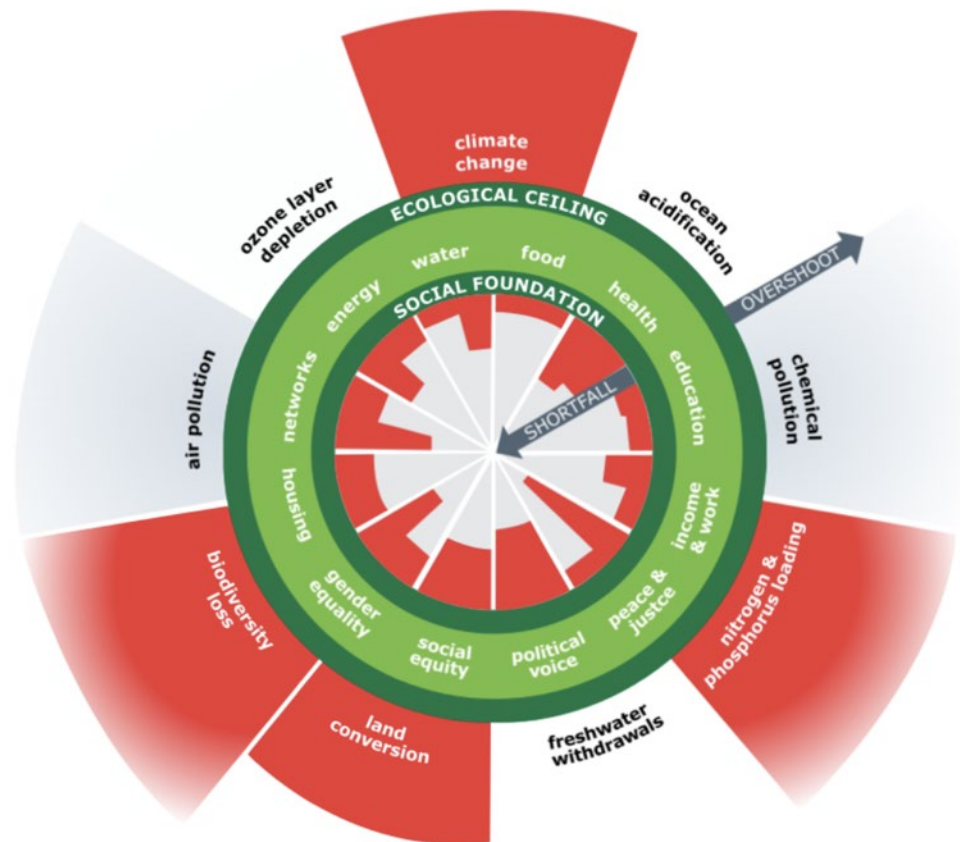
⁴ DEFRA (2022) UK Climate Change Risk Assessment 2022 <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022>

How Social Standards and Planetary Boundary Considerations Shape Our Approach to Climate Action

Raworth's Doughnut of Social and Planetary Boundaries.

The Doughnut of Social and Planetary Boundaries, shown to the left, was produced by Kate Raworth in 2017¹. The doughnut sets out how we must consider both the planetary boundaries (the outer ring of the doughnut) and the minimum social standards (the inner ring derived from the UN SDGs) to ensure humanity can thrive in an environmentally safe and socially just space.

Globally we are already exceeding four planetary boundaries, marked in red, and fall short in some aspects of each of the social foundation factors. It is essential that we work to address the threats posed by climate change and that we also take the opportunity to extend these efforts to create a socially just and ecologically safe future. A just and equitable transition to net zero is essential for us to create a sustainable future, and these key principles are echoed in the Council's continued commitments to addressing the climate emergency and are reflected in our vision of a District of flourishing communities.



¹ Raworth, K., (2017), Doughnut Economics: Seven Ways to Think Like A 21st-Century Economist, Random House Business Books, London.
Figure: <https://www.kateraworth.com/doughnut/>

How Our Climate Works

An introduction to the Earth's climate system.

Life on Earth is dependent on the energy from the sun, which we experience as light and heat. The Earth is just the right distance from the sun to support life, but only because our climate system (comprised of five interconnected spheres) helps make our planet habitable. These are the atmosphere, the hydrosphere, the cryosphere, the biosphere, and the geosphere¹. The Earth's climate regulates how the sun's energy is distributed across the globe. This influences local, regional, and global weather conditions, as well as impacting short, medium, and long-term climate patterns.

The Biosphere

The biosphere refers to all living organisms on Earth¹. This includes humans, as well as all the plants, animals and insects found in the atmosphere, on land, or in water. The organisms in the biosphere help to regulate the release and storage of CO₂, oxygen, and water. Plants use CO₂ and sunlight to produce glucose and release oxygen through photosynthesis. The majority of living organisms respire, taking in oxygen and releasing CO₂. Dead organisms, often found in the soil and plant litter, will also contribute by releasing CO₂ through decomposition.



The Geosphere

The geosphere refers to all the rocks and minerals which form the Earth, including the Earth's surface and soils¹. Soil is essential for providing nutrients to support all the living organisms on Earth. The geosphere also enables water storage in lakes, rivers, and groundwater, and provides opportunities for evaporation and precipitation.

The irregular shape of the Earth's surface influences the movement of air and affects rainfall and temperature, causing local variations in climate. For example, the hills to the west of Lincolnshire block the rain brought inland from the Atlantic, making it one of the driest counties in the UK.



¹ National Geographic Society (2022) National Geographic Society Website: Earth's Systems
<https://education.nationalgeographic.org/resource/earths-systems> accessed: 07.06.2022

How Our Climate Works

An introduction to the Earth's climate system.

The Atmosphere

The atmosphere which surrounds the Earth is about 100 km or 62 miles thick and is formed of different layers¹. Just 12 km/7.5 miles of atmosphere above the Earth's surface (the troposphere) contains almost all our weather and provides the air we breathe.

The Earth's atmosphere is comprised of 78% Nitrogen, 21% Oxygen, 1% Argon. Greenhouse Gases (GHG) make up the remaining 1% but have large-scale impacts on the climate. These include Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Ozone (O₃), Chlorofluorocarbons (CFCs), Hydrofluorocarbons (HFCs), and water vapour (H₂O).



The Hydrosphere

The hydrosphere refers to all water on Earth, whether it is stored as water, ice, or water vapour. 70% of the Earth is covered by our oceans, which hold around 97% of the world's water².

Heat transfer through global ocean circulation is the reason the UK is warmer than other places at the same latitude such as Ontario, Canada³. Due to the albedo effect, the oceans will absorb lots of the energy they receive from the sun, and therefore will continue to warm due to climate change.



The Cryosphere

The cryosphere is a sub-section of the hydrosphere and comprises all the sea ice, glaciers, ice sheets, snow, and permafrost across the world⁴. The frozen water on our planet affects our oceans and atmosphere and has a key impact on climate and weather patterns.

Different surfaces affect how much energy is absorbed or reflected back into the atmosphere; this is known as the albedo effect. Glaciers and ice sheets reflect lots of energy back into the atmosphere (they have a high albedo) and therefore the loss of glaciers and ice sheets will alter the Earth's energy balance and increase the amount of heat stored, contributing to rising temperatures globally.



1 NASA (2019) NASA Website: Earth's Atmosphere: A Multi-layered Cake <https://climate.nasa.gov/news/2919/earths-atmosphere-a-multi-layered-cake/>

2 NOAA, (2021), National Ocean Service website 'How much water is in the ocean?'; accessed 11.05.2022. <https://oceanservice.noaa.gov/facts/oceanwater.html>

3 Met Office website, Sea Ice in the Climate System, accessed: 11.05.2022. <https://www.metoffice.gov.uk/research/climate/cryosphere-oceans/sea-ice/index>

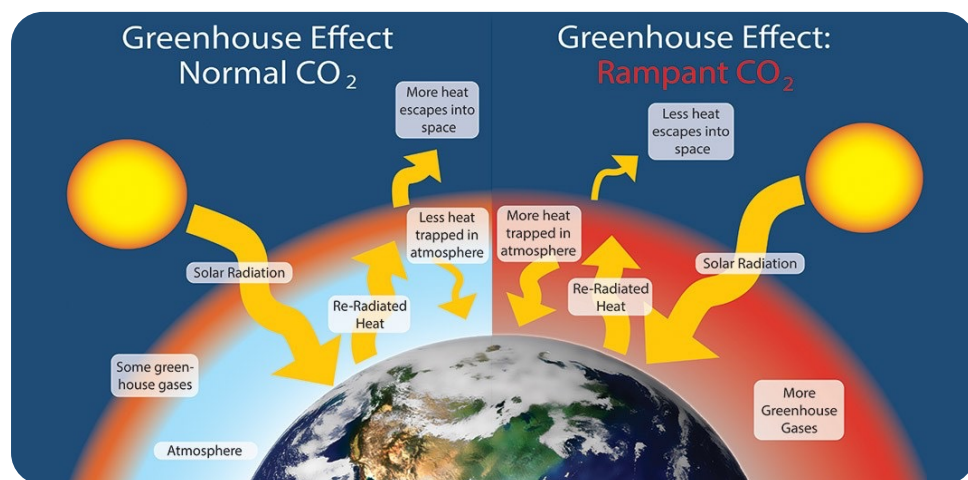
4 World Meteorological Organisation, (2022), State of the Global Climate 2021, https://library.wmo.int/index.php?lvl=notice_display&id=22080#.Yp8P96jMJPY

The Greenhouse Effect

How our climate is changing and the impacts of climate change.

Low levels of naturally occurring Greenhouse Gases help trap a small amount of the sun's energy and keep Earth habitable with an average global surface temperature of 15°C. Without this natural Greenhouse Effect the average temperature on Earth would be around -20°C¹.

Excess GHG emissions from human activities are disturbing the natural Greenhouse Effect and are destabilising the Earth's climate system, as shown in the diagram below³. Activities, including burning fossil fuels, are driving human-induced climate change through the enhanced Greenhouse Effect. This causes increasing amounts of energy from the sun to be trapped within our atmosphere and re-radiated to Earth's surface which is causing global temperatures to rise. This human-induced climate change began with the Industrial Revolution when large scale CO₂ emissions began. This is why we compare current global temperature increases to pre-industrial temperatures.



Alongside global wealth distribution inequalities, global emissions production disparities add a further level of complexity to climate action. Oxfam's 2021 Carbon Inequality in 2030 report² identified that the wealthiest 10% of the global population (which covers most middleclass people in industrialised countries) are responsible for nearly half of global emissions. The report further states that in 2015 the lifestyles of the richest 1% of the global population were responsible for almost twice as many emissions as the poorest 50% of the global population combined.

Countries who have historically produced very low emissions are now facing some of the most devastating impacts of climate change, and globally we must all play our part in tackling this emergency in a fair and just manner.

As we work towards net zero it is not simply the endpoint we have in mind, we must also consider the cumulative amount of emissions produced as we get there. This is why different pathways or trajectories to net zero are so important.

¹ British Geological Survey, BGS website: The Greenhouse Effect, accessed 23.05.2022 <https://www.bgs.ac.uk/discovering-geology/climate-change/how-does-the-greenhouse-effect-work/>

² Oxfam (2021) Carbon Inequality in 2030: Per capital consumption emissions and the 1.5°C Goal <https://www.oxfam.org/en/research/carbon-inequality-2030>

³ Will Elder, US Gov National Parks Service, (2020) National Parks Service website: What is Climate Change? <https://www.nps.gov/goga/learn/nature/climate-change-causes.htm>

The Impacts of Climate Change

A brief overview of some of the key impacts of climate change.

Climate change causes disruption to the Earth's climate system and has a wide range of impacts affecting both people and planet.

Rising air temperatures and changes to weather patterns are changing the world as we know it. They are altering the growing season of crops and pose high risks to people through heat stress which is increasingly threatening global water and food security. Extreme weather events (including heatwaves, droughts, storms, floods, and landslides) can cause substantial damage to infrastructure, and threaten peoples' lives and livelihoods. Changing temperatures and weather conditions are allowing the habitats for pests such as mosquitos to expand which endangers peoples' health, and as climate impacts worsen there are expected to be increasing numbers of climate refugees¹.

Climate change is damaging the oceans and is causing sea level rise, rising sea temperatures, ocean acidification, and changing global ocean currents. Biodiversity on land and in the sea is increasingly under threat and changing weather patterns are increasing the risks of wildfires. Temperature and weather changes are driving increasing melt of glaciers and ice sheets, which threatens water supplies and contributes to sea level rise¹.

As a result of climate change, North Kesteven will continue to experience hotter drier summers and warmer wetter winters to which our residents and businesses must adapt. This makes it essential to rapidly reduce our emissions now to stay within our national and local carbon budgets to minimise further disruption of our climate, working to keep within the 1.5°C Paris Agreement threshold.

Some of the impacts of the emissions associated with human activities have now effectively become 'locked in' by passing critical thresholds, known as tipping points. Time lags in the Earth system's response to GHG emissions mean some impacts are felt immediately and others not until decades later². To avoid the most dangerous impacts of climate change, the Met Office states that rapid and deep cuts to emissions are essential, but that we must also take action to adapt to the impacts which are already locked in². It is essential that we work to adapt to the impacts of climate change which we are already facing, as well as working to mitigate climate change by reducing emissions to limit further temperature increases.



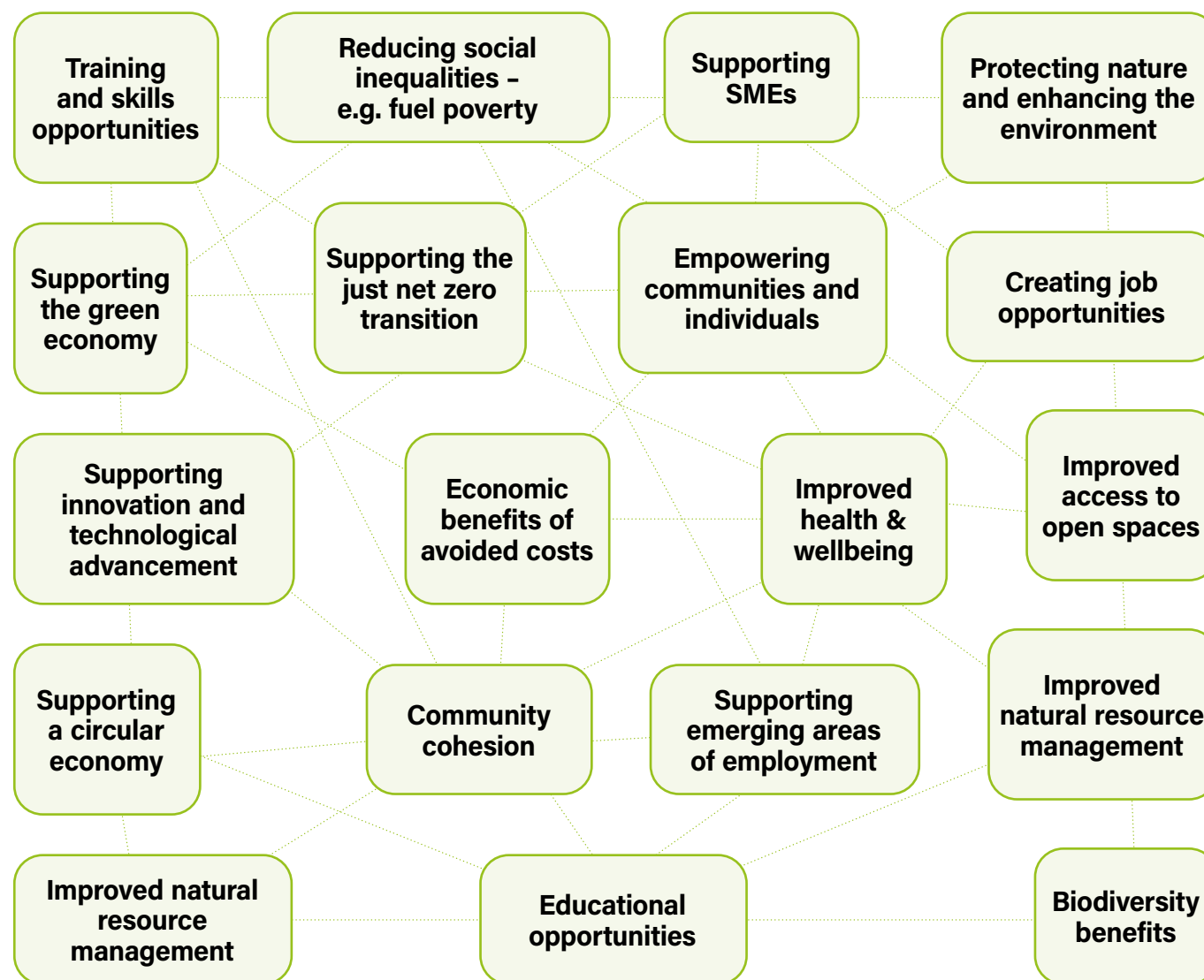
¹ Met Office, Met Office Website: Effects of Climate Change <https://www.metoffice.gov.uk/weather/climate-change/effects-of-climate-change> accessed:31.05.2022

² Met Office (2019), Met Office Hadley Centre Climate Briefing Note: Links between emissions pathways and time lags in Earth's climate system, <https://www.theccc.org.uk/wp-content/uploads/2019/07/Briefing-note-on-time-lags-in-the-climate-system-Met-Office.pdf>

Climate Action and Co-benefits

A brief overview of how climate action can bring a wide range of co-benefits.

Co-benefits are additional positive outcomes from actions which expand beyond the main focus of an activity. Co-benefits from climate action can create new opportunities which benefit both people and planet. We seek to maximise the positive co-benefits in all our Action Plan actions. This means we work to go beyond simply achieving the set actions as we strive to enhance the positive impacts felt by our communities, our environment, and our economy to create a better future for North Kesteven. Just as each action is unique, so will its co-benefits be. A selection of co-benefits are highlighted on this page, some of which are based on co-benefits identified by the CDP¹.



¹ CDP, (2020) The co-benefits of climate action, <https://www.cdp.net/en/research/global-reports/co-benefits-climate-action> accessed:07.06.2022

Section 3

Our Climate Emergency Strategy in Detail

- **Climate Emergency Strategic Direction**
- **Climate Emergency Action Themes**
- **Climate Action Accountability**
- **Challenges and Barriers to Climate Action and How We Intend to Overcome Them.**
- **Costing, Funding, and Resourcing Net Zero**



Climate Emergency Strategic Direction

Setting out our climate emergency strategic vision, aims, and objectives.

Reducing emissions through mitigation techniques alongside delivering adaptation to the effects of climate change are key to our climate emergency response and this Strategy. It is essential we employ both techniques to build up our resilience to the effects of climate change we are already facing, as well as working to limit further emissions to prevent worsening climatic conditions.

Strategic Vision:

To achieve our ambitions for a just and sustainable transition to net zero by 2030 for both North Kesteven District Council and the District of North Kesteven, supported by mitigation measures to reduce emissions and adaptation measures to improve resilience to the effects of climate change.

Strategic Aims:

1. For North Kesteven District Council to achieve net zero 2030 through a 95% reduction in Council Greenhouse Gas emissions compared to 2008/09 levels, with offsetting and/or negative emissions technologies to be used only for the final 5% of emissions from hard to eliminate sources.
2. To support the District of North Kesteven to achieve the aspirational net zero 2030 target through a 95% reduction in carbon emissions from energy compared to 2005 levels, with offsetting and/or negative emissions technologies to be used only for the final 5% of emissions from hard to eliminate sources.
3. To support a just transition to net zero to create a sustainable future for North Kesteven in alignment with our Community Strategy 2030 vision to create a District of Flourishing Communities.

Strategic Objectives:

1. To implement mitigation measures to reduce CO₂ emissions from Council services and assets.
2. To enhance adaptation of Council services and assets to improve resilience to the effects of climate change.
3. To raise awareness of, and engagement in climate action and the need for a just transition to net zero across the District.
4. To support District-scale mitigation efforts to reduce CO₂ emissions.
5. To support District-scale adaptation activities to improve resilience to the effects of climate change.
6. To embed climate emergency awareness and net zero ambition considerations in all Council decision-making.
7. To collaborate with key partners to drive climate action in sectors and service areas outside of NKDC's control.
8. To support the enhancement of the natural environment and opportunities for natural carbon sequestration.
9. To support waste reduction and improve awareness of the importance of efficient resource management across North Kesteven.

Climate Emergency Action Themes

Setting out our climate emergency action themes.

We have used nine themes to categorise our climate actions. The new themes, shown to the right, have been revised as part of this Strategy refresh. Our themes are based on a combination of the original themes used in our 2020 Climate Emergency Strategy and Action Plan (CESAP 2020), as well as the categories used by the Government-funded SCATTER cities emissions accounting tool for local authorities¹. By updating our themes to align with SCATTER, we are better able to utilise the recommended interventions from the SCATTER tool and can more easily compare our own climate action progress against other local authorities.

As part of the review of our original CESAP 2020, we have now decided to split our Strategy and our Action Plan into separate documents. This decision was made to enable us to extend our Strategy to 2030, with a mid-point review in 2025/26, whilst enabling us to update our Action Plan annually as it is a more 'live' document. These two documents will always remain fundamentally integral to each other and are both publicly available on NKDC's website.

As climate action is embedded into everything we do as a council, forming a core part of NKDC's Our Environment priority, the Strategy and the Action Plan will be key documents that help to shape the Council's activities throughout the 2020s. When developing our climate actions, we do not simply prioritise actions by carbon savings potential. We also consider a broader range of factors including the scale and scope of the Council's influence, the action costs, and the potential to maximise co-benefits that could arise.

1. Decision Making

2. Communication and Engagement

3. Adaptation

4. Buildings

5. Transport

6. Natural Environment

7. Energy

8. Industry

9. Waste and Water

¹ SCATTER Cities Tool <https://scattercities.com>

Climate Emergency Action Themes

Our decision making and communications and engagement climate emergency action themes.

1. Decision Making

Our Decision Making theme focuses on ensuring we consider the implications the decisions we make have on the climate and our net zero 2030 targets. We use the best available climate science and policy information to ensure the Council remains at the forefront of climate activities within the local government sector. This includes embedding climate actions and activities within our Service Delivery Plans and accounting for climate implications as part of the decision-making process.

The 2030 vision for our Decision Making theme is for climate impact and net zero impact considerations to be fully integrated within NKDC's decision making processes which will support progress towards both our Council and District net zero 2030 targets.

Core Decision Making Activities:

- Ensure that the best available climate science and policy information is utilised to support all Council decision making.
- Ensure climate and greenhouse gas emissions impacts are considered in decision making at all levels.
- Embed considerations of the impacts on the climate and our net zero position throughout the Council's democracy system including within decisions, recommendations, and options.
- Continuously embed considerations of the climate emergency within the council's strategic risk register.

2. Communications and Engagement

Our Communications and Engagement theme focuses on informing and engaging our audiences (residents, businesses, community groups, Members, and colleagues) in North Kesteven's climate emergency response and net zero 2030 targets. We will accelerate the Council's climate focus by sharing our successes and delivering a co-ordinated and sustained communications and engagement programme centred on individual to District-scale climate action. We will develop informative and engaging activities that share climate science, underline the urgency of the climate crisis, and inspire effective concerted action. We will also create climate-based behavioural change programmes to involve a wide range of audiences in activities to reduce carbon emissions and minimise negative environmental impacts.

The 2030 vision for our Communications and Engagement theme is to motivate action to encourage engaged and inspired communities. Through consistent and high-quality communications centred on our key climate communications messages, we will facilitate increased engagement and recognition of our climate action.

Core Communication and Engagement Activities:

- Deliver a varied and multi-faceted climate communications and engagement plan utilising a wide variety of tools and channels, centred on our five core climate communication messages, which are: Adaptation and Resilience, Domestic Energy, Transport, Carbon Capture & Biodiversity, and Renewable Energy.
- Deliver internal communications to engage and inform colleagues, embedding net zero within all aspects of the Council's work.

Climate Emergency Action Themes

Our adaptation and buildings climate emergency action themes.

3. Adaptation

Our Adaptation theme is focused on making the Council and the District more resilient to the worsening effects of the changing climate. This theme sets out to support NKDC and the District to take action to adapt to the effects of climate change, including extreme weather events, so that we can build and strengthen the resilience of our communities, the built environment, and the natural environment of North Kesteven.

The 2030 vision for our Adaptation theme is for both NKDC and the District to utilise adaptation measures to improve resilience to the worsening impacts of climate change, including extreme weather event, and to reduce the vulnerability of the built and natural environment.

Core Adaptation Theme Activities

- Support the adaptation of Council homes to become more resilient to the effects of climate change.
- Support the adaptation of the Council's non-domestic buildings to become more resilient to the effects of climate change.
- Support District-wide adaptation to improve climate resilience and climate emergency response.

4. Buildings

Our Buildings theme centres on improving the climate resilience of both domestic and non-domestic buildings. This includes supporting a fabric first approach, energy efficiency improvements, lighting and appliance efficiency improvements, and supporting the shift away from fossil fuel powered heating systems. This theme sets out to utilise the Council's influence, including within existing processes, to support the development of resilient and energy efficient buildings across the Council's own building stock, and the District as a whole. Additionally, the Council continues to aim to be an exemplar, showcasing the measures that can be taken to reduce CO₂ emissions and constantly working to reduce the impacts of the assets we own and build on the environment.

The 2030 vision for our Buildings theme is for future-proofed buildings across both NKDC and the District which are resilient to the effects of climate change, have high energy efficiency and have a reduced dependence on fossil fuel powered heating systems.

Core Building Theme Activities

- Support the improvement of energy efficiency, the shift away from gas/fossil fuel heating systems, and the improvement of the energy efficiency of lighting and appliances used in Council owned buildings
- Support the development and retrofitting of resilient and low carbon buildings across North Kesteven by improving energy efficiency, moving away from fossil fuel powered heating systems, and supporting the shift to energy efficient lighting and appliances.

Climate Emergency Action Themes

Our transport and natural environment climate emergency action themes.

5. Transport

Our Transport theme centres on reducing transport-based emissions produced by the Council and across the District. This theme sets out to support the development of sustainable transport solutions across the District including public transport and active travel. Working with the Council's strategic partners will play a vital role in this.

The 2030 vision for our Transport theme is for a reduction in transport-related emissions supported by a transition to more flexible and low emissions travel options, alongside a reduction of mileage and emissions both from business and commuter travel.

Core Transport Theme Activities:

- Support Council colleagues to use the most sustainable and efficient transport routes and travel options available, and to lead by example to reduce the need for car-ownership and usage for work.
- Work with key strategic partners to improve mobility options, reduce road transport use, and support active travel in the District.
- Work with key partners to improve internet connectivity across the District to help reduce the need for travel.
- Promote public transport and active travel options within developments across Central Lincolnshire.

6. Natural Environment

Our Natural Environment theme centres on supporting biodiversity and ecological networks across the District, as well as the natural sequestration of CO₂. It sets out to do this by improving and supporting natural spaces appropriate to the wider landscape to enhance the ecological network, enabling natural carbon sequestration to absorb final Greenhouse Gas emissions that cannot be reduced to net zero, and supporting green infrastructure and biodiversity.

The 2030 vision for our Natural Environment theme is to support enhanced interconnection of ecological networks and green infrastructure in both rural and urban areas, with district-wide improvements in biodiversity protection and increased tree canopy coverage.

Core Natural Environment Theme Activities:

- Engage with partners to support biodiversity projects, afforestation, and the improvement of land management across the District and wider area.
- Support the implementation of nature-based solutions to maximise the co-benefits of climate action projects to benefit communities and nature.
- Improve and increase biodiversity and green infrastructure in open spaces and within new developments to support wellbeing and provide CO₂ sequestration opportunities.

Climate Emergency Action Themes

Our energy and industry climate emergency action themes.

7. Energy

Our Energy theme focuses on reducing fossil fuel dependence and associated emissions by promoting renewable energy generation opportunities for both NKDC and the District. It sets out to do this by supporting increased renewable energy generation across NKDC's estate, where viable given electricity grid capacity constraints, and by supporting renewable energy generation opportunities across the District of North Kesteven.

The 2030 vision for our Energy theme is for increased renewable energy generation across both NKDC's estate and the District, including community and business renewable energy generation opportunities, resulting in reduced fossil fuel usage and a reduction in associated emissions in line with our net zero 2030 targets.

Core Energy Theme Activities:

- Identify and deliver renewable energy generation projects where viable for NKDC's estate.
- Utilise partnership opportunities to support and encourage renewable energy generation across the District.
- Support communities and businesses to develop renewable energy generation projects by signposting available funding opportunities in line with the Communications & Engagement theme.

8. Industry

Our Industry theme centres on securing sustainable development and economic growth across the District that improves energy efficiency and reduces dependence on fossil fuel technologies. It sets out to do this by encouraging the growth of the green economy and continued sustainable development across the District to support our flourishing communities, whilst also engaging with the industry sector to support energy efficiency improvements and reducing fossil fuel reliance.

The 2030 vision for our Industry theme is for a reduction in industrial and commercial Greenhouse Gas emissions coupled with increased energy and resource efficiency, alongside increased investment to support job creation and growth of the local economy.

Core Industry Theme Activities:

- Engage with businesses within the District to support collaboration to promote business decarbonisation.
- Collaborate with local businesses to understand which decarbonisation methods are most effective to reduce industrial and commercial emissions.
- Utilise partnership and collaborative opportunities to promote the growth of the green economy and creation of jobs across the District.

Climate Emergency Action Themes

Our waste and water climate emergency action theme.

9. Waste and Water

Our Waste and Water theme focuses on the need to improve finite resource management by increasing efficiency and minimising waste to help move towards a circular economy that is resilient to the effects of climate change. This theme sets out to do so by reducing the quantity of waste produced by both NKDC's operations and across the District, whilst also improving the quality of recycling to contribute to developing a circular economy, and improving the efficiency of water usage.

The 2030 vision for our Waste and Water theme is for a substantial reduction in the volume of waste produced coupled with a continued improvement in the quality of recycling presented to support improved resource efficiency and management in line with a circular economy, alongside improved water efficiency and management.

Core Waste and Water Theme Activities:

- Continuation of efforts to reduce the quantity of waste produced by NKDC operations and improve the quality of recycling generated.
- Continuation of efforts to reduce District-wide waste production and improvement in quality of recycling in line with the Lincolnshire Waste Partnership action plan.
- Increase awareness of the need for efficient water management in line with currently known and predicted effects of climate change.



For detailed actions associated with each theme, please see our Climate Emergency Action Plan.
www.n-kesteven.gov.uk/residents/climate-action

Climate Action Accountability

Our approach to climate action accountability and embedding climate action in every officer role across NKDC.

Whilst we know there will be challenges as we work towards net zero, we believe it is vital that there is clear and transparent accountability to ensure we truly play our part in the global efforts to transition to net zero and keep within the Paris Agreement 1.5°C temperature threshold.



Formal Progress Reporting

Formal progress reporting is conducted on live Action Plan actions. NKDC's Corporate Management Team, Resources Overview and Scrutiny Panel, and Executive Board receive quarterly progress reports to monitor action delivery, and an annual progress update is also presented to Full Council. Progress monitoring and reporting of our Strategy and our Action Plan sits with the Climate Change Manager.

For more details, please see section 5 of this Strategy.



Climate Action Lead Officers

Each action within our Action Plan has a specified lead officer. They are responsible for overseeing the action, including organising any collaborative and cross-divisional activities, and are required to provide quarterly action progress updates to facilitate Council-wide progress monitoring.



Theme Champions

Theme champions have been established, with each member of our Senior Management Team (SMT) championing a specific climate action theme which aligns with their service area. It is hoped these climate action theme champions will help to encourage collaborative and innovative approaches to achieving our climate actions, creating opportunities for internal information sharing and cross-divisional working.

THEME	SMT CHAMPION
Decision Making	Assistant Director of Democratic Services
Adaptation	Assistant Director of Finance
Communications and Engagement	Assistant Director of Corporate and Community Services
Buildings	Deputy Chief Executive
Transport	Chief Executive
Natural Environment	Assistant Director of Housing and Property Services
Energy	Director of Resources
Industry	Economy and Place Director
Waste and Water	Assistant Director of Environment and Public Protection

Challenges and Barriers to Climate Action and How We Intend to Overcome Them.

Outlining the key barriers, challenges, and dependencies which influence climate action, and how we intend to overcome them.

As we work toward our net zero ambitions, it is likely we will face challenges and barriers. These challenges and barriers can come in many forms and will be unique to each specific climate emergency action. A number of the key challenges which we consider in our action creation process are highlighted to the right.

It is crucial that climate action does not exacerbate other existing socio-economic issues or entrench further inequalities. This is why our Strategy and our Action Plan endeavour to support a just transition to net zero, maximise the co-benefits of our climate actions, and support our vision for a District of flourishing communities.

Understanding the potential barriers and challenges which affect climate actions is incorporated into our Action Plan review process. We reflect upon common barriers highlighted through past experiences and seek to continually identify and overcome new barriers which arise as part of our annual action plan review, enabling us to address these barriers and update our actions accordingly. The lead officer for each action is primarily responsible for ensuring any action-specific barriers and challenges are accounted for and overcome. The original Climate Emergency Strategy and Action Plan (2020) and this revised Strategy are testament to the commitment and progress made by NKDC so far.

Examples of barriers:

Cost, funding, and resourcing challenges

Decarbonising and reducing emissions from domestic energy use in a rural district

Challenges faced by off-gas grid properties

Ensuring climate action does not exacerbate other socio-economic challenges such as fuel poverty

Differing priorities, timelines, and approaches of organisations at different geographical scales

Identifying and quantifying emissions from Land Use, Land Use Change, and Forestry (LULUCF)

Identifying appropriate and accredited carbon offsetting measures

Lack of rural representation in climate action case studies and best practice

Lags in data availability for emissions monitoring

Costing, Funding, and Resourcing Net Zero

Our approach to embedding costings into our climate action as we strive for net zero.

Globally, we know that climate action will come at a cost, but the cost of inaction will be significantly higher. Investing in climate action is a direct investment in our futures. In 2022, North Kesteven District Council took another step forward to support this and established a £1 million Climate Response Reserve¹ to support the Council's climate activities. It is vital that our climate emergency response is sufficiently financed to enable us to adapt to and mitigate the impacts of climate change, helping us to create a safe and resilient District for current and future generations.



£1 million Climate Response Reserve established in 2021

Estimating costs for our planned actions enables us to explore various avenues for funding them and helps us to better prioritise our efforts to address the climate emergency and support the transition to net zero. Some climate actions will incur relatively little cost, whereas others will need substantial financial resourcing. For example, decarbonising buildings is known to be a high-cost area of climate action, but one which provides substantial energy savings and emissions reduction through reduced energy demand, increased energy efficiency and adaptation to improve building resilience. Decarbonisation of domestic buildings can also help to alleviate fuel poverty and improve health and wellbeing.

To establish an ambitious but achievable Action Plan, it is important to understand the cost and resource demands associated with planned actions. Some climate actions can be incorporated within existing Council processes and be supported by existing associated budgets. Other climate actions require dedicated funding and resourcing. To help support the far-reaching climate action needed to reach net zero across the District, NKDC continue to actively explore funding opportunities available to local authorities to assist our climate response.

The actions in our 2022 Action Plan refresh, inspired by feedback received by our Local Government Association Corporate Peer Challenge, have incorporated costing and funding considerations where possible. This decision builds upon analysis of our Climate Emergency Strategy and Action Plan (2020) conducted by consultants Anthesis, who identified high-level costs and estimated savings associated with District-scale activities to work towards net zero. This approach is incorporated into our Action Plan review process and will help us to continue to develop a clear financial pathway to fund climate action.



¹ North Kesteven District Council Executive Board Decision, 17.02.2022 <https://democracy.n-kesteven.gov.uk/ieDecisionDetails.aspx?AllId=79183>

Section 4

Quantifying Our Climate Impacts

- **Calculating North Kesteven District Council's Greenhouse Gas Emissions**
- **Understanding Carbon Budgets for North Kesteven**
- **North Kesteven District Council's Greenhouse Gas Emissions**
- **North Kesteven's Greenhouse Gas Emissions**
- **Pathways to Net Zero**



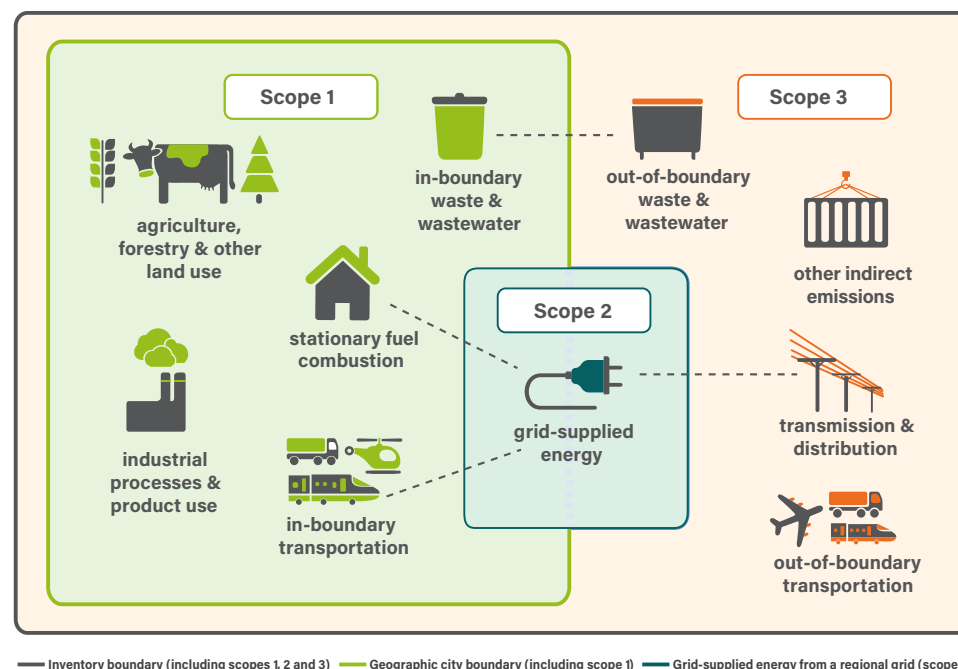
Calculating NKDC's Greenhouse Gas Emissions

How we determine what is included in our greenhouse gas emission monitoring.

Understanding our progress in efforts to reduce GHG emissions is a key aspect of understanding the effectiveness of our climate action. Therefore, we calculate the Council's GHG emissions annually and have done so since 2008. To do this we have to determine which emissions fall within our influence (or scope). In addition to Scope 1 and Scope 2 emissions, our GHG emissions monitoring and net zero 2030 target for NKDC also include some Scope 3 emissions which we have some influence over. This includes colleague business miles and emissions generated by contractors who deliver services for the Council. We use the internationally recognised Greenhouse Gas Protocol to determine which emission we count. Our GHG emissions reduction is monitored as one of the Council's Key Performance Indicators (KPIs).

Emission reduction is the core aspect of our efforts to reach net zero by 2030. However, we must carefully identify appropriate carbon offsetting measures to be used to absorb the final 5% of emissions from hard to eliminate sources. This will require offsetting and/or negative emissions technologies. This can be through natural approaches including changes in land use and forestry, or through geoengineering techniques such as carbon capture, usage, and storage (CCUS). Work to identify the most appropriate and technologically sound measures will need to be undertaken, including investigation of the opportunities presented through environmental land management schemes in a local context.

Sources of greenhouse gas emissions are grouped into three scopes, this helps identify their source and who has the influence to tackle them, as shown in the diagram below¹. The net zero 2030 emissions target in this Strategy for the District focuses on tackling emissions within Scopes 1 and 2; activities that produce emissions within the District's boundaries.



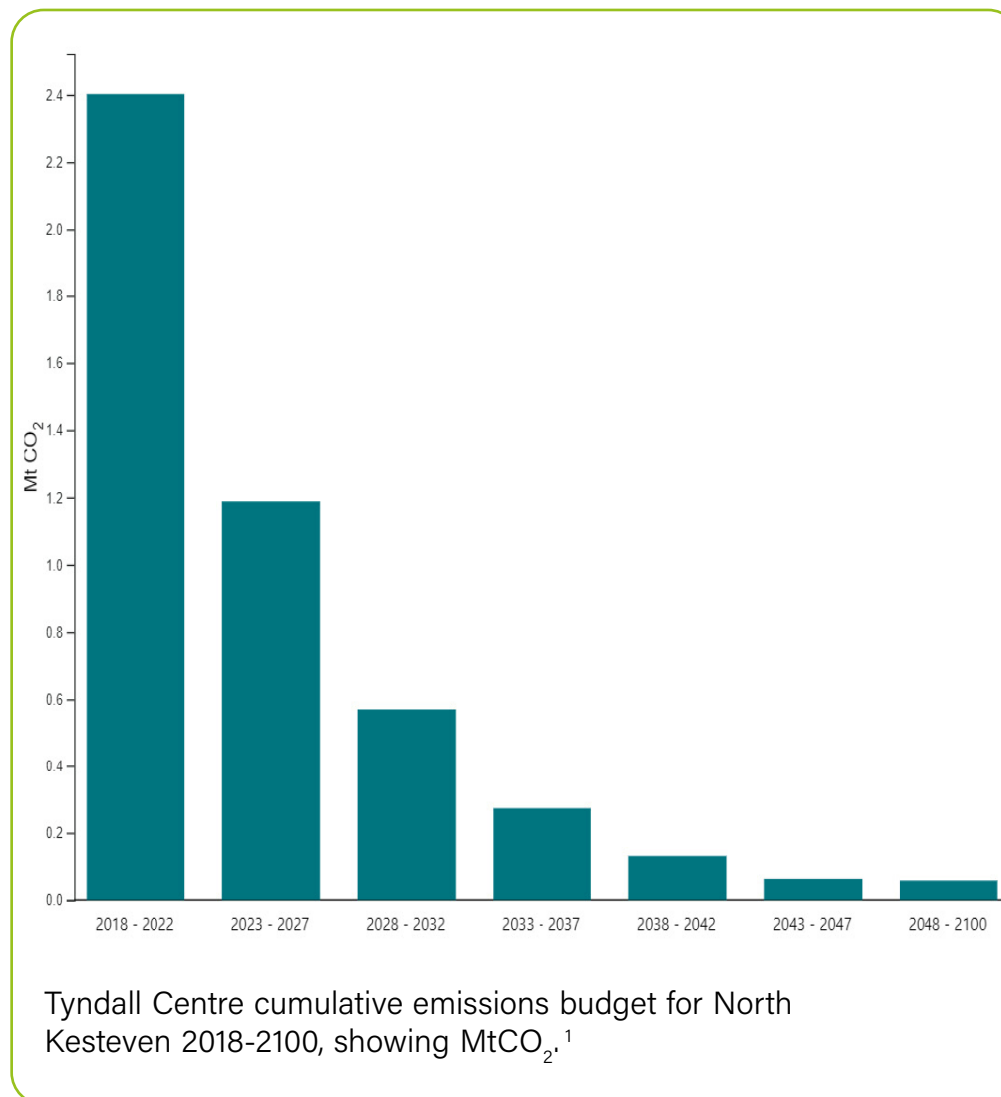
For future updates to the graphs presented in this section, please see our website.
www.n-kesteven.gov.uk/residents/climate-action

Understanding Carbon Budgets for North Kesteven

How carbon budgets provide context for our climate action.

Carbon budgets are a valuable tool for understanding the scale of CO₂ emissions reduction needed to reach net zero and keep within the Paris Agreement 1.5°C threshold. The Tyndall Centre for Climate Research's Carbon Budget Tool for Local Authorities¹ was produced for each local authority in England and was also used by consultants Anthesis in North Kesteven specific analysis. This carbon budget provides vital insights into the scale of emissions reductions needed across the District to play our part in addressing the climate emergency. This analysis focuses on CO₂ emissions as it is the most reliably monitored Greenhouse Gas, and this approach provides a framework which we continue to use as the basis for our climate emergency action planning.

The Tyndall Centre estimated the District of North Kesteven had a remaining maximum cumulative emissions budget of 3.5 MtCO₂ for 2020-2100 to not exceed our fair share of remaining global emissions, as shown in the graph. From this budget, consultants Anthesis explain that if we were to continue to produce emissions at the rate of 2017 levels in a Business-as-Usual scenario, then our entire budget would be used up by 2027 (i.e. within 7 years of 2020). Measures including the phase out of fossil fuels and significant improvements in energy efficiency are needed to remain within this carbon budget. In addition to the insights of this carbon budget, it is key that we understand the impacts of CO₂ emissions and sequestration from LULUCF (Land Use, Land Use Change, and Forestry). Monitoring emissions of non-CO₂ GHGs and the measures to absorb and account for non-CO₂ emissions which cannot be reduced to zero are also important. Analysis of District land use emissions by Anthesis has enabled us to do exactly this, and further analysis of NKDC's CESAP 2020 helps inform our ongoing climate emergency response.



¹ Tyndall Centre, Setting Climate Commitments for North Kesteven: Quantifying the implications of the United Nations Paris Agreement for North Kesteven <https://carbonbudget.manchester.ac.uk/reports/E07000139/> accessed: June 2022

North Kesteven District Council's Greenhouse Gas Emissions

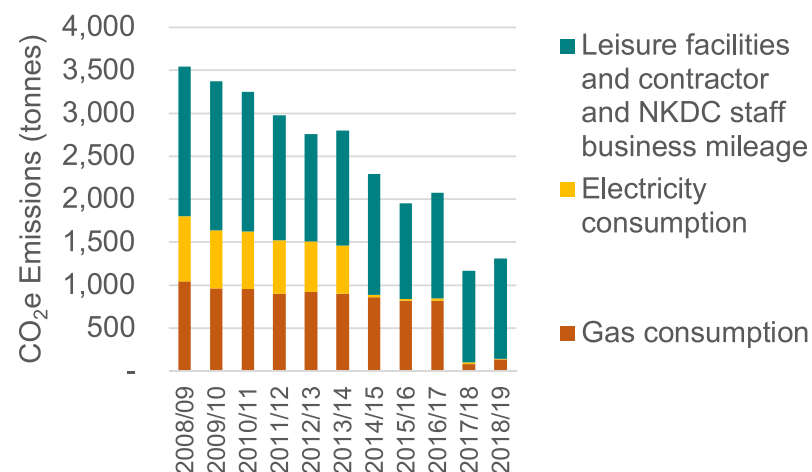
NKDC's Greenhouse Gas emissions 2008/09-2018/19.

By 2018/19, NKDC's Greenhouse Gas emissions had fallen by 63% compared to 2008/09 levels.

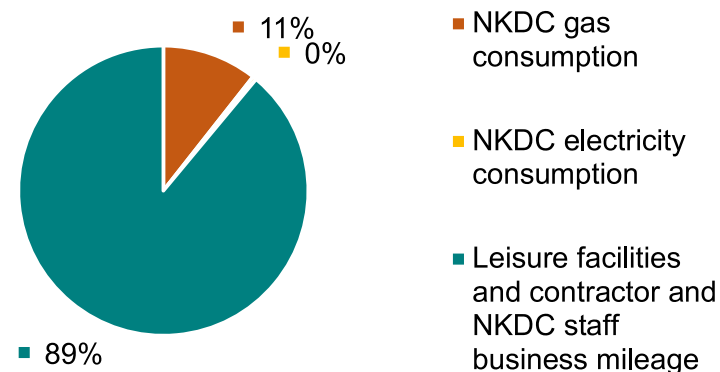
The stacked bar graph to the right shows NKDC's CO₂e (CO₂ equivalent) emissions from 2008/09 to 2018/19, calculated using energy and fuel consumption data collected across the Council. The strong reduction in emissions is clear but we know we must go further, working to rapidly reduce emissions in line with our net zero 2030 targets. The pie chart to the right shows the remaining sources of NKDC's GHG emission from our 2018/19 emissions analysis. Of NKDC's remaining emissions, leisure facilities and mileage make up the most significant portion. By understanding which activities have the most impact, we are able to prioritise our emissions reduction efforts through both existing Council processes and in our Climate Emergency Action Plan.

Impacts of the Covid-19 pandemic and lockdowns are expected to have significantly distorted both Council and District-wide GHG emissions, with reduction in travel due to lockdowns as well as leisure centre closures just some of the major impacts felt. As such, in this Strategy we retain the use of the 2019 data to provide a pre-pandemic indicator of the scale of emissions reduction it is essential we make. These graphs to the right set out our 2019 emissions position, enabling us to take dedicated action to further reduce our emissions as we work towards our net zero 2030 target.

NKDC Greenhouse Gas emissions 2008/09-2018/19



NKDC's remaining sources of greenhouse gas emissions 2018/19



North Kesteven District Council's Greenhouse Gas Emissions NKDC's Impacts and Assets.

Provide services to
118,149
residents and
4,785 businesses
(as of 2021)

7752
trees

– Carbon sequestered 68.38t p/yr. Carbon stored 2358.88t. Estimate to replace our trees like for like - £9,209,590.



4 woodlands

(Tunman Wood, Godson's Holt, Canterbury Drive Washingborough, Edward Barker Rd Heighington)

Open spaces

including closed church yards



Leisure and culture facilities



Nature Reserves

(Millennium Green, Station Rd, Waddington. Lollycocks, Sleaford. Whisby Nature Park. Witham Valley Country Park)



Business units

3,846
Council homes

(as of April 2022)



Lafford Homes

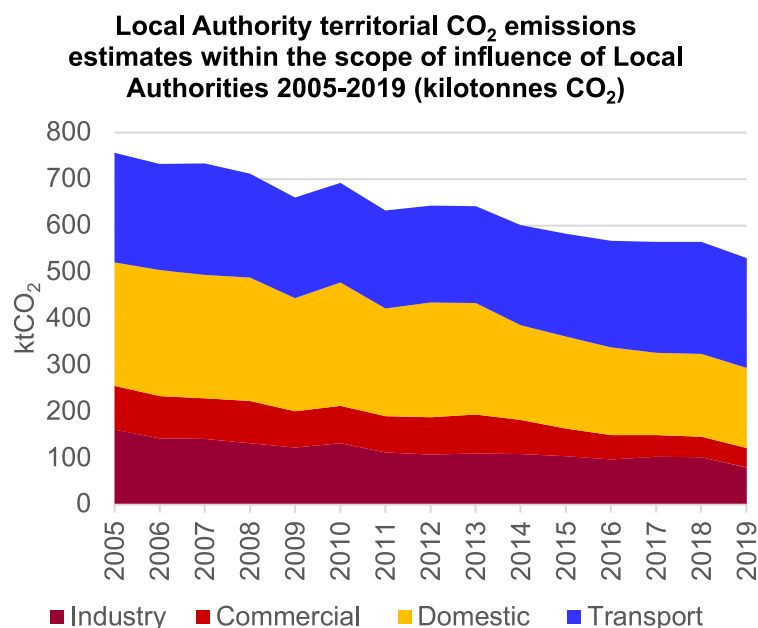
private homes for sale and rent

Sleaford offices and Metheringham depot



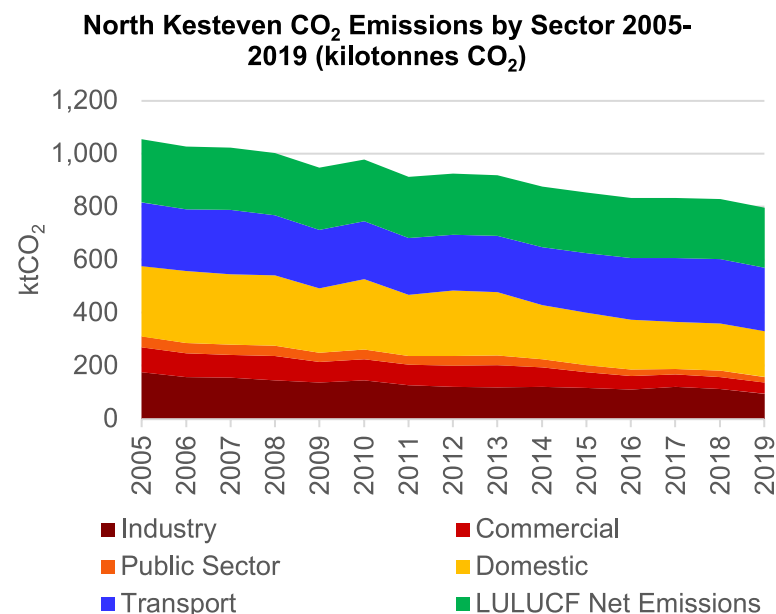
North Kesteven's Greenhouse Gas Emissions

North Kesteven's Greenhouse Gas emissions 2005-2019.



For the above left graph, (emissions within the scope of LA influence) emissions fell from 797.7 ktCO₂ in 2005 to 551.7 ktCO₂ by 2019, a reduction of 30.84% from 2005 levels.

The Department for Business, Energy and Industrial Strategy (BEIS) data used to monitor emissions reductions are published with a two-year lag. Therefore, the 2022 publication will contain emissions data for 2020.



For the above right graph (emissions from all sectors from BEIS full dataset), emissions fell from 1055.0 ktCO₂ in 2005 to 795.8 ktCO₂ by 2019, a reduction of 24.57%.

North Kesteven – District Impacts

Commutes drive 75%, 9% travel on foot, car passenger 5%, bike 4%, bus 3%



4,785 businesses (as of 2021)



118,149 residents



60 schools



3,226
renewable energy generation
sites (End of year 2020)

402,223.326MWh
renewable energy generation
(End of year 2020)



90%
agriculture/pasture,
6% development,
4% Tree cover



11,000 (23%)
households living off the
gas grid (as of 2020)



53,229
current homes, plus Local Plan/
future housing supply (April, 2022)



39%
of current homes are well insulated



5,959 of 49,211
of NK households living in fuel
poverty (12.1%)



132 sites of nature conservation in NK



43.2% Of household waste sent for
recycling and composting for 2020/21.



825 plug-in vehicles in NK (610 private
and 215 company), 19% of all licensed plug-in
cars in Lincolnshire (Q4 2021).



807 licensed ultra-low emission vehicles
(ULEVs) in NK (593 private and 214 company), also
19% of all licensed ULEVs in Lincolnshire (Q4 2021).



44 dwellings owned by NK which had installed
some form of renewable technology, 13th/281
English LAs with available data.



3 strategic employment locations:

- Teal Park (North Hykeham - Siemens, Greenray),
- St Modwen (Witham St Hughs - Turbine Efficiency, Frontier, Apogee, DPD),
- Sleaford Enterprise Park (Bailey Trailers, SHD Composites Ltd, Kiowa).

Other major employers outside these towns include the armed forces (RAF Cranwell, Waddington and Digby), three major food processing factories - Moy Park (Anwick), Tulip (Ruskington) and Branston Potatoes (Branston), as well as Mid UK Recycling (Sleaford and South Hykeham) and Kisimul School (Swinderby).

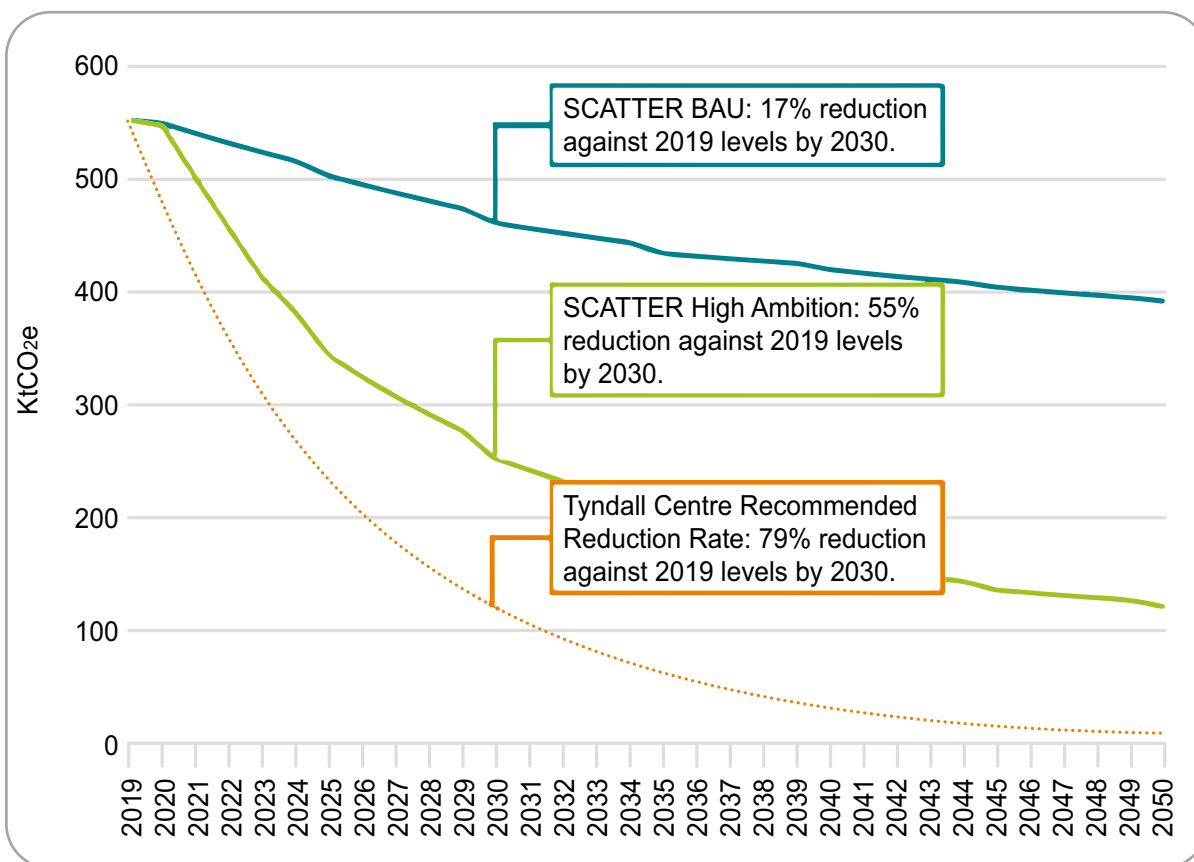
Based on data published by the Department for Business Energy and Industrial Strategy (figures are '000s tonnes CO₂e) Greenhouse gas emissions breakdown

Pathways to Net Zero

Projected pathways to net zero emissions.

The graph shown below, produced by consultants Anthesis, sets out different future emission pathways for North Kesteven from 2019 to 2050. These pathways are based on the SCATTER tool and the Tyndall Centre recommended emissions reduction rate.

Our ambition for District-scale net zero emissions by 2030 seeks to go further, striving for rapid emissions reductions to minimise our future impacts on the climate, staying within the Paris Agreement 1.5°C targets, with a just and equitable transition to net zero which supports a District of flourishing communities.



SCATTER BAU

Pathway:

- » Assumes the District continues a current “business-as-usual” (BAU) trajectory, in terms of nationally led policy and behaviour change. Reductions in emissions for this scenario would be largely the result of continued grid decarbonisation.

SCATTER

High Ambition Pathway:

- » Assumes the District goes significantly beyond national policy and grid decarbonisation assumption. This pathway is the result of maximum ambition levels for all interventions modelled by SCATTER.

Tyndall Centre Recommended Reduction Rate:

- » Based on the annual reduction rate of 13.7% from the Tyndall Centre. This reduction rate is not based on tangible policy or implementation but sets out the scale of action required to meet Paris Agreement targets.

Section 5

Developing this Strategy and the Direction for the Future

- The Development of this Strategy 2020-2022
- Monitoring and Reporting Progress on Our Climate Emergency Strategy and Climate Emergency Action Plan
- Review Timelines for the Climate Emergency Documents
- Methods and Data Sources
- Glossary



The Development of this Strategy 2020-2022

An overview of our original CESAP 2020 development and the 2022 refresh.

Colleague and partner involvement has been key to our climate action from the start. On 14th November 2019, a workshop was held for approximately 45 colleagues from across the Council's Our Environment priority working groups and selected partners to help develop the next steps for NKDC's climate action following our Climate Emergency Declaration in July 2019. Discussions centred on what action should be taken immediately, and what should be taken within the next five to ten years (2025 and 2030 respectively). A further Climate Emergency workshop, which focused on refining the initial ideas proposed in the earlier workshop, was held for managers and the Senior Management Team on 11th March 2020. The ideas and input from both these sessions were used as inspiration for our first Climate Emergency Strategy and Action Plan (CESAP 2020).

Input from residents is also key to our ongoing climate response, with feedback from our 2020/21 Resident Survey and consultation on the 2030 Community Strategy and NK Plan 2021-24 used to support our 2022 Strategy and Action Plan review. The responses to these surveys provided valuable insights used to develop and refine our climate actions. We feel it is vital that the Council take a leading role in District-wide climate action, with regular and transparent progress monitoring forming an essential part of this.

The CESAP 2020 was a fantastic starting point for our dedicated climate action which enables subsequent reviews and updates, such as in 2022, to continue to move our ambitions forwards. Our approach to climate action highly values the input of those who will deliver the actions, and this approach is ingrained within our Action Plan review process. For clarity, each annual Action Plan is referenced with the relevant financial year, for example CEAP 2022/23.

In late 2021, following inspiration from the analysis of our original CESAP 2020 conducted by consultants Anthesis, and building upon the recommendations identified by our LGA Corporate Peer Challenge, we set about to review and refresh our Strategy and Action Plan. Given the substantial progress made since 2020, whilst also facing the Covid-19 pandemic, we felt 2022 was an opportune time to reflect upon the progress made so far and reaffirm our climate emergency response going forwards.

This refreshed Strategy and our Action Plan build upon the firm foundation of our CESAP 2020, and we have now set out to push further as we strive to meet our ambitious net zero targets for 2030. To do this, we reviewed the progress of each action established in 2020 using updates provided by the dedicated lead officer through our internal monitoring system. From this, we assessed which actions should continue into the refreshed Action Plan, and which needed to be reviewed or updated, especially in light of the pandemic. Completed actions were removed from the refreshed Action Plan, and a wide range of new actions were created. Many of the new actions build upon earlier activities and are helping to drive sustained climate action across all divisions of the Council. A wide range of colleagues were involved in this process, including through our Climate Emergency High Level Intervention Panels, and our Climate Emergency Action Plan Panel.

Monitoring and Reporting Progress on Our Climate Emergency Strategy and Climate Emergency Action Plan

Our ongoing approach to monitoring and reporting our climate emergency action progress as we work towards net zero.

This Strategy is set to run to 2030, with a mid-point review scheduled in 2025/26. At this point a detailed update of the Strategy will be undertaken, reflecting upon the progress made since 2020, to shape our pathway forwards over the remainder of the decade. This mid-point review will provide the opportunity to ensure our Strategy reflects the best available science and policy as we work towards our net zero 2030 targets.

Annual updates to our Action Plan are undertaken to enable us to check action progress, make any necessary updates or amendments, and to create new actions. Each Action Plan is therefore titled with the corresponding financial year. Annual progress reporting following the end of each financial year enables us to present updated figures and graphs, and further track our progress as we work toward net zero which is made available on our website.

Our CO₂ emissions reduction targets have long been captured within the Council's Key Performance Indicators. Our progress towards these targets continues to be monitored through the associated KPI process.

The timeline on the following page outlines our ongoing review and update process.

Action progress updates on live actions are provided by the dedicated lead officer and are used to produce quarterly and annual progress reports which are presented to our Resources Scrutiny Committee and to our Executive Board. Annual progress updates are also presented to Full Council.



For more information, please see our Climate Emergency Action Plan.

If you would like to find the most up to date versions of the graphs contained within this strategy and a summary of progress made on our actions, please refer to our annual Climate Emergency Action Plan progress reporting, available on our website. www.n-kesteven.gov.uk/residents/climate-action

Review Timelines for the Climate Emergency Documents

Our approach to reviewing and updating our Climate Emergency Strategy and our Climate Emergency Action Plan.

The timeline opposite identifies key milestones as we work towards our 2030 net zero targets and sets out our approach to reviewing and updating both our Strategy and our Action Plan. All our climate activities align with the financial years, running from April to March.

2022/23	<ul style="list-style-type: none"> Refresh of Climate Emergency Strategy and Climate Emergency Action Plan completed Quarterly reporting on action progress Annual progress review
2023/24	<ul style="list-style-type: none"> Climate Emergency Action Plan refresh Quarterly reporting on action progress Annual progress review
2024/25	<ul style="list-style-type: none"> Climate Emergency Action Plan refresh Quarterly reporting on action progress Annual progress review
2025/26	<ul style="list-style-type: none"> Mid-point review of Climate Emergency Strategy Climate Emergency Action Plan refresh Quarterly reporting on action progress Annual progress review
2026/27	<ul style="list-style-type: none"> Climate Emergency Action Plan refresh Quarterly reporting on action progress Annual progress review
2027/28	<ul style="list-style-type: none"> Climate Emergency Action Plan refresh Quarterly reporting on action progress Annual progress review
2028/29	<ul style="list-style-type: none"> Climate Emergency Action Plan refresh Quarterly reporting on action progress Annual progress review
2029/30	<ul style="list-style-type: none"> Climate Emergency Action Plan refresh Quarterly reporting on action progress Annual progress review
2030/31	<ul style="list-style-type: none"> Net Zero Target End-point reporting and review of the Climate Emergency Strategy and the Climate Emergency Action Plan Setting NKDC's net zero future

Methods and Data Sources

Notes on the methods and data sources used in our Climate Emergency Strategy and our Climate Emergency Action Plan.

The scope of our net zero targets

Our District net zero target specifically refers to reducing CO₂ emissions from energy to below 95%, with the remaining 5% to be offset through accredited sequestration techniques, following a science based target approach. Following the same methodology, our net zero target for the Council also includes our Scope 3 emissions to ensure we account for colleague business miles and emissions generated by the contractors who deliver services for us, as we have the ability to influence these emissions. Council emissions monitoring uses CO₂e values to account for other Greenhouse Gas emissions as well as CO₂.

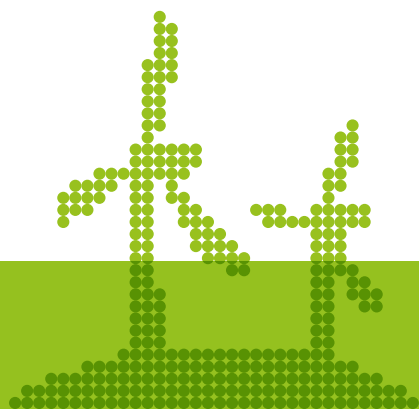
NKDC's Greenhouse Gas emission monitoring follows the International Greenhouse Gas Protocol, and we have always incorporated emissions from Scopes 1, 2, and 3 in our calculations. We apply the BEIS UK Government GHG Conversion Factors for Company Reporting to calculate our annual emissions from energy usage data collected across the Council.

BEIS UK Local and Regional CO₂ Emissions Data 2005-onwards

Link: <https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics>

This data set provides Local Authority territorial CO₂ emissions estimates from 2005 onwards, and Local Authority territorial CO₂ emissions estimates within the scope of influence of Local Authorities from 2005 onwards. The data from BEIS is broken down by sector covering industry emissions, commercial emissions, public sector emissions, domestic emissions, and transport emissions. There are further sub-sectors to provide more detailed emission estimates. Further detail on the methodology used by BEIS to calculate these figures is available as part of the dataset. Emissions data from BEIS always has a two-year lag to account for data processing, this means that the 2022 release will provide the emissions data for 2020.

This dataset is sufficient to monitor our CO₂ reduction efforts, but does not provide data on other Greenhouse Gases, and therefore when used alone provides a very narrow view of the Greenhouse Gas emissions released in the District. To provide a broader picture of Greenhouse Gas emissions across the District, we continue to use the Setting Areas Targets and Trajectories for Emissions Reduction tool (SCATTER), available to local authorities, which provides an inventory of District emissions covering carbon dioxide, methane, and nitrous oxide. The SCATTER tool additionally provides a series of indicative interventions which provide a basis for developing District-scale climate actions.



Glossary

Key terms used in this strategy.

Adaptation – the adjustments needed from individuals, communities, and countries in response to changes to our planet's climate.

Carbon budget – the maximum amount of carbon dioxide that can be emitted in order to keep temperatures well below 2°C and ensure a 1.5°C limit to temperature rise is achieved.

Carbon offsetting – the purchase of a tradeable unit which represents emissions rights or emissions reductions, to balance the climate impact of an organisation, individual, or activity.

CCUS – Carbon Capture, Usage, and Storage – using techniques and technology to capture carbon dioxide emissions before they enter the atmosphere.

CEAP – NKDC's Climate Emergency Action Plan.

CES – NKDC's Climate Emergency Strategy.

CESAP 2020 – NKDC's Climate Emergency Strategy and Action Plan produced in 2020.

Climate Emergency – a declaration that identifies the need for urgent action to be taken to reduce emissions to prevent further climate change, aiming to avoid potentially irreversible environmental damage.

CO₂ – Carbon dioxide

CO₂e – Carbon dioxide equivalent – the common unit used to equate the global warming potential of other Greenhouse Gas emissions to CO₂, reflecting the amount of CO₂ that would be released to have the equivalent global warming effects.

Decarbonisation – implementing measures which reduce CO₂ emissions from activities, for example by improving energy efficiency of a building or by using renewable energy sources.

Greenhouse Gas (GHG) – refers to any gases which contribute to the Earth's Greenhouse Effect and that influence the absorption of energy in the atmosphere.

Greenhouse Effect – the natural or human-influenced processes through which gases in the atmosphere trap energy from the sun which influences the Earth's climate.

Mitigation – efforts to reduce or remove emissions of greenhouse gases such as carbon dioxide (CO₂) and methane (CH₄) which are causing global temperature increases.

Net zero – Net zero means achieving a balance between the carbon emitted into the atmosphere, and the carbon removed from it. This balance – or net zero – will happen when the amount of carbon we add to the atmosphere is no more than the amount removed.

Non-CO₂ GHG – all Greenhouse Gases except for CO₂.

Sequestration – utilising carbon sinks to reduce CO₂ emissions in the atmosphere, these can be natural sinks such as tree planting or engineered solutions such as CCUS.

Sustainability – meeting the needs of today without compromising the ability to meet the needs of future generations.

CLIMATE EMERGENCY STRATEGY TO 2030

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