

South Kesteven Climate Action Strategy

Our vision, aims and high level ambition to mitigate and adapt to climate change for our District

Updated October
2023



SOUTH
KESTEVEN
DISTRICT
COUNCIL

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Executive summary

The Climate Action Strategy lays out how we can respond as a Council to the global issue of climate change at a local level, and provides a clear place-based vision for South Kesteven's approach to climate change. The strategy covers climate change mitigation as well as considering adaptation to living in a warmer world.

The aspiration is to ensure opportunities to reduce carbon emissions are pursued at every stage, securing the wider benefits to society, economy and the environment.

Climate change is a challenging and cross-cutting issue, and the Climate Action Strategy does not propose an exhaustive list of all the actions required to respond. The document sets out our role as a Council in leading, shaping and enabling local responses to a global issue.

Purpose of the Strategy

The Climate Action Strategy sets out ambitions for the wider district regarding climate change. The purpose of this Strategy is to provide a framework for action for South Kesteven to reduce carbon emissions and safely adapt to the unavoidable impacts of climate change.

Building on current strategy, including South Kesteven District Council's Corporate Plan and ongoing work to reduce Council carbon emissions, the Climate Action Strategy will provide a significant step forward in helping to address a range of systemic challenges that are seen in South Kesteven.

Format of the Strategy

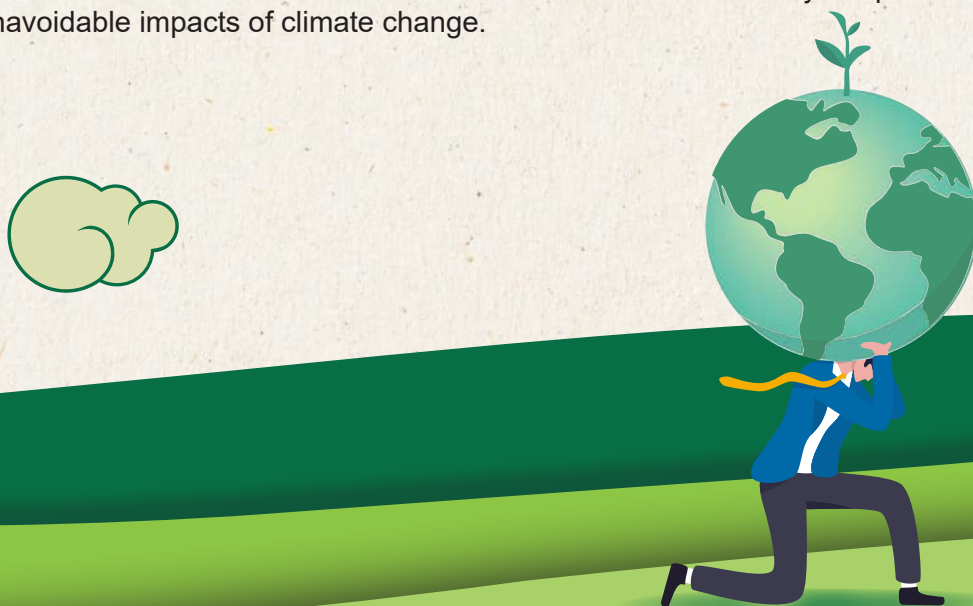
The Climate Action Strategy is broken down into two stages: firstly, this document establishes the context for climate action within South Kesteven, including local opportunities and barriers, and proposed a framework of eight areas to focus upon. With this framework in place, a subsequent detailed action plan will be taken forward and act as a live project list with ownership at all levels across South Kesteven District Council.

Timescales

The Climate Action Strategy proposes a three part framework for action: short term (2023-2025), medium term (2025-2030) and longer term (2030 and beyond). This timeframe reflects the Council's own aspiration to reduce carbon emissions from Council operations by at least 30% by 2030.

Scope

The Climate Action Strategy proposes a framework of eight key themes to target, each with a consideration of key aspects in terms of climate change, carbon reduction and adaptation to living in a warmer world. The implications for carbon removal and offsets are also considered.



South Kesteven at a glance



14,000
(22%)

households with no
connection to the
gas grid (2021)

44.14%

of dwellings with EPC
Band C rating
or above(2022)

11.6%

of households classified
as living in fuel poverty
(7569 households)
(2020)

40%

Household waste
sent for recycling,
composting
or reuse (20/21)

27

nationally
important Sites of
Special Scientific
Interest (SSSIs)

5.7%

Development

8.4%

Forest, open
land, and
water

81.9%

Agriculture

4%

other -gardens,
vacant or
undeveloped

2195

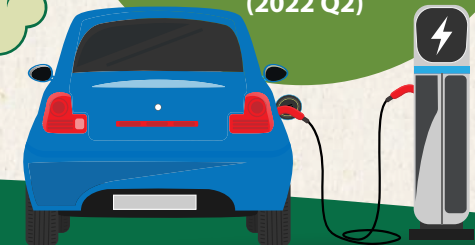
hectares of ancient
woodland

47

public charging devices (31
rapid charging) (2022)

1,177

plug-in vehicles
licensed in the district
(2022 Q2)



Climate change context

Climate change is driven by the impact of human activity on the earth's atmosphere. Global changes in the earth's average temperature have been rapidly increasing, linked to the accumulation of carbon dioxide (CO₂, also referred to interchangeably in this document as carbon) and other greenhouse gases. The world is now about 1 C warmer than it was in the 19th century, and the amount of CO₂ in the atmosphere has risen by 50% as of 2022¹.

The UK is set to experience a further 0.5°C increase in average annual temperature by 2050, even under ambitious global scenarios for cutting carbon emissions. Failure to significantly reduce carbon emissions would mean average temperatures increase even further. The general impact this will have on the UK is expected to be warmer and wetter winters, hotter and drier summers, and the increased likelihood of disruptive extreme weather-driven events.

The issue for South Kesteven

South Kesteven both contributes to the effects of climate change through carbon emissions and is impacted at a local level by a changing climate. At a local level, the main impacts projected for the East Midlands area include flooding, droughts and water shortages, and periods of prolonged overheating.

It is clear we are already feeling the effects of a changing climate, both at home and further afield. The UK record for the highest ever temperature recorded was broken on 19th July 2022 at Coningsby, Lincolnshire, with a temperature of 40.3°C.

Further impacts of climate change are likely to include:

- Heatwaves which become more frequent, more prolonged and more extreme
- Periods of drought from low seasonal rainfall
- Surface water flooding from more severe rainfall events and flooding from watercourses
- Disruptive weather including storms and hail
- Increased risk of cold snaps

Being able to adapt to these expected impacts of climate change is fundamental. The risks and opportunities presented by climate change in England are explored further detail at Appendix A.

Global, national and local agreements on climate change

The world faces a huge challenge to address climate change, but there are solutions to rapidly slow carbon emissions. The Paris Agreement, adopted at COP21 in Paris in 2015, represented the first successful global effort to curb greenhouse gas emissions. The main aim of the agreement is to pursue efforts to limit warming to 1.5 C and work to ensure the overall increase in global temperature does not exceed 2 C, recognising that the disruptive impacts resulting from a changing climate are expected to get progressively worse as temperature passes that threshold.



In 2019, the UK Government set out a target to achieve net zero greenhouse gas emissions across the whole UK by 2050. This commitment, legally enshrined by the Climate Change Act (2008)² means the UK now has less than 30 years to completely decarbonise its economy. Further detail on targets set by the UK government to meet net zero by 2050 are included at Appendix A.

While significant progress has been made since the agreement in 2015, alarmingly these efforts remain insufficient to limit global temperature rise by 1.5 C. UNFCCC published an analysis of global commitments to emission reduction in October 2022 and found combined climate pledges could put the world on track for 2.5 C of warming by the end of this century³.

To the end of 2022, over 75% of UK local authorities have declared a climate emergency. Across the country, councils are taking urgent action in their local areas to combat the negative impacts of climate change and to reduce carbon emissions towards the UK government's carbon targets.

What changes do we need to see?

The Committee on Climate Change produced a report ahead of the UK's formal adoption of the 2050 net zero target. Within this, they suggest scenarios which would unlock society wide carbon emissions reductions⁴.

These include:

- Resource and energy efficiency – comprehensively reducing waste and reducing demand for energy across the economy
- Electrification – particularly of transport and heating, supported by a major expansion of renewable and low carbon energy generation
- Hydrogen development – where there are energy intensive demands in industrial processes or long distance HGVs and shipping, hydrogen could service some of that demand
- Carbon capture and storage – for industry and for residual emissions
- Land use changes – altering the emphasis towards carbon storage and biomass production for fuel, accelerating the creation, restoration and enhancement of natural habitats, particularly through tree planting and peatland restoration
- Behaviour changes across society – especially those that lead to a lower demand for carbon-intensive activities, for example a greater shift towards healthier diets and a reduction in consumption of beef, lamb and dairy products

1 Carbon dioxide now more than 50% higher than pre-industrial levels | National Oceanic and Atmospheric Administration (noaa.gov)

2 The Climate Change Act 2008 (2050 Target Amendment) Order 2019 (legislation.gov.uk)

3 Climate Plans Remain Insufficient: More Ambitious Action Needed Now | UNFCCC

4 Net-Zero-The-UKs-contribution-to-stopping-global-warming (2).pdf



Climate Action Strategy outline

South Kesteven District Council climate emergency declaration

On 26 September 2019, South Kesteven District Council formally declared a climate emergency, recognising the urgent need to accelerate carbon emissions reductions, and the fundamental role that local authorities can have in leading, shaping and enabling local action.

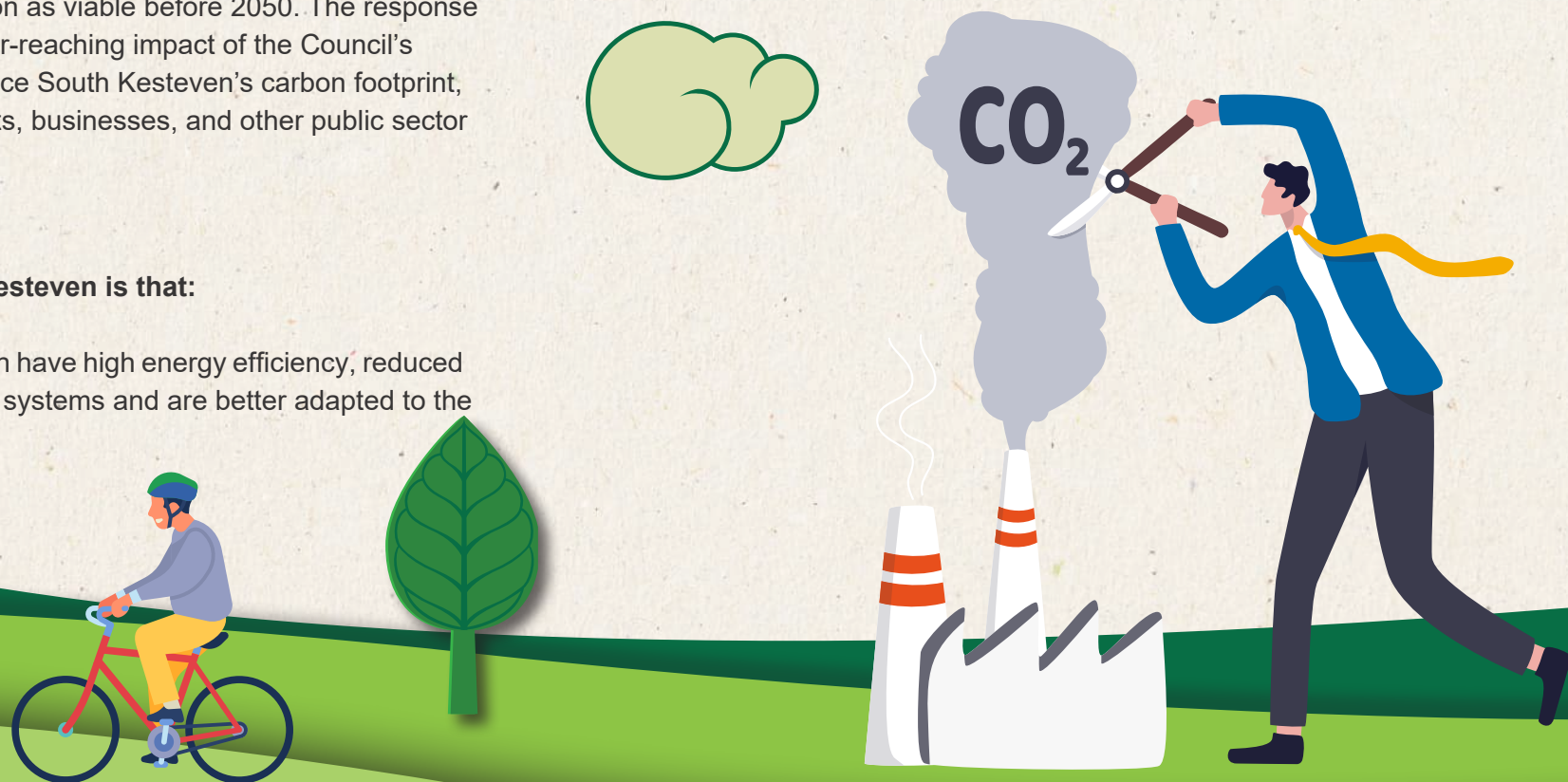
South Kesteven District Council also set the target to reduce the organisation's carbon footprint by at least 30% by 2030 and to endeavour to become net-zero carbon as soon as viable before 2050. The response also recognised the much more far-reaching impact of the Council's community leadership role to reduce South Kesteven's carbon footprint, through engagement with residents, businesses, and other public sector organisations.

The vision

By 2030, our vision for South Kesteven is that:

- Buildings across South Kesteven have high energy efficiency, reduced dependence on fossil fuel heating systems and are better adapted to the impacts of climate change

- South Kesteven has increased renewable energy generation and is more self-sufficient for energy
- South Kesteven has a strong low-carbon economy and there are more low carbon employment opportunities
- Wildlife habitats are valued, maintained, enhanced and created in South Kesteven and biodiversity is restored
- Emissions from transport are reduced throughout South Kesteven and there are more flexible and low carbon travel options
- Waste is valued as a resource and circular economy principles in practice, water efficiency and management is improved
- People are more aware of the value of a clean and healthy environment and we are better adapted to a changing climate and extremes of weather
- Climate and net zero considerations are fully embedded within South Kesteven District Council's decision making at every level



The ambition

In order to play our part in meeting national net zero targets, it is recommended to follow a science based target and aim for a net zero carbon position for the district by 2041. The target is based upon modelling produced by the Tyndall Centre for Climate Change, widely adopted by many local authorities. This is explored further in the Carbon budgets section.

Purpose of document

The Climate Action Strategy aims to formally set out ambitions for the wider district regarding climate change. The purpose of this Strategy is to provide a framework for action for South Kesteven to reduce carbon emissions and safely adapt to the unavoidable impacts of climate change.

Whilst taking account of South Kesteven District Council's Corporate Plan and existing work to reduce Council carbon emissions, the strategy will provide a significant step forward in helping to address a range of systemic challenges that are posed to South Kesteven.

The Climate Action Strategy supports South Kesteven District Council's declaration of climate emergency and reflects the authority's leadership role to reduce carbon emissions through work with residents, businesses, and other public sector organisations. The Climate Action Strategy will outline the main sources of carbon emissions within the district of South Kesteven, and outlines what role South Kesteven District Council can have to reduce them.

Achieving carbon reductions beyond our own operations will require close collaboration and action from residents, businesses, community groups and many other organisations. This Strategy will set out our approach for engaging with these groups to support, influence and facilitate change.

Focus of the Climate Action Strategy

1. Continue to reduce the carbon emissions from our own council activities
2. Support and facilitate partnership working of stakeholders throughout South Kesteven and Lincolnshire to achieve net zero carbon in the district
3. Adapt to the impacts of climate change at a local level



Framework for Action

South Kesteven District Council policy

The Climate Action Strategy is aligned with and supports the Council's existing policies and strategies.

Corporate Plan themes



Growth and our Economy



Housing that Meets the Needs of all Residents



Healthy and Strong Communities



Clean and Sustainable Environment



High Performing Council



District wide focus

Council operations focus



FIGURE 1: CURRENT AND DRAFT RELEVANT POLICY AND STRATEGY FOR SOUTH KESTEVEN

Corporate Plan 2020-2023

The Corporate Plan 2020 – 2023 provides the context for the Council's decision making. It sets out our vision for the district, as the 'best in which to live, work, and visit' and our priorities for achieving this. Delivering a Clean and Sustainable Environment is a key strategic priority of the Council. The plan commits the Council to reduce its carbon footprint by at least 30% by 2030 and endeavour to become net-zero carbon as soon as viable before 2050.

State of the District 2023

State of the District is an annual report on the society and economic performance of the district of South Kesteven, including an assessment of the district's carbon emissions by sector and intensity. The report provides part of the evidence base that informs the Corporate Plan and the other policies, strategies and initiatives actioned by the Council.

The Local Plan 2011-2036

The Local Plan provides the spatial framework for guiding development and change across district. The plan is underpinned by a commitment to the principles of sustainable development. All developments shall consider how they can proactively minimise the impacts of climate change in their design, construction and use.



Draft South Kesteven Economic Development Strategy 2023–2028

The draft Economic Development Strategy provides the framework for the promotion and delivery of investment, job creation and growth in the district. The strategy will explore the development of a low carbon circular economy and commit to promoting the green economy within South Kesteven and utilising economic development to increase the adaptive capacity of communities in preparation for climate change hazards.

Draft Housing Strategy for South Kesteven

The Housing Strategy is overarching for all of the Council's housing policies and works alongside the Council's Local Plan. It will provide the vision for how housing across the district will be developed and maintained and how households will be supported.

Draft Lincolnshire Health and Wellbeing Strategy

This county-wide strategy sets out five main areas where councils are able to influence in order to maximise positive health and wellbeing outcomes for residents, with clear links to a healthy environment.

Air Quality Management Area and Action Plan for Grantham

South Kesteven District Council declared an Air Quality Management Area in 2013, covering the main roads in the town centre of Grantham. The main source of air pollution derives from the volume of vehicle traffic travelling through the area. An Air Quality Action Plan sets out a number of areas to influence a reduction in air pollution in the area.

Corporate Asset Management Strategy 2022-2027

The Corporate Asset Management Strategy provides the framework for the management of the Council's estate and property portfolio (excluding the housing assets). The strategy contains a commitment to reduce the Council's carbon footprint by making investments in our assets that match commitment to meeting net zero, and identifying whether every investment can achieve net zero in its operation by 2030.

Carbon Footprint & Reduction Opportunities

This report was produced by the Carbon Trust on the carbon emissions of the Council. The document acts as the de-facto Carbon Management Plan for the decarbonisation of the Council's operations with the target of a 30% reduction in the organisations footprint by 2030 and achieving net zero as soon as viable before 2050.

Draft Housing Revenue Account Business Plan

The Housing Revenue Account (HRA) is a ring-fenced account separate from the Council's General Fund that contains the income and expenditure relating to the management and maintenance of its housing stock. The draft HRA Business Plan, currently under development, will make links to current work to retrofit and improve the energy performance of Council owned properties and set out priorities, plans and actions for council housing over the next 30 years.

Tree guidelines for the management of trees within South Kesteven District

Sets out the Council's approach around management of trees within the district. This includes consideration of how to manage trees on Council owned open spaces, and duties around privately owned trees including safety and Tree Protection Orders.



Timescales for action

In order to ensure sustained action, this plan proposes to cover the period to 2030, aligning with South Kesteven District Council's declared target for carbon reduction. Ambitions and projects which deliver on those (to be detailed in the subsequent Climate Action Plan) are split into immediate short term goals, medium term aims and longer term projects. It is expected the Climate Action Strategy will be periodically refreshed to match action set out in the Climate Action Plan.

Raising finance

In order to fund and sustain necessary action on climate change, a thorough consideration of the role of finance is critical.

Local government has a key role to play in resourcing the low carbon economy. Projects could be delivered through direct funding awarded by central government, as is the case for the current Home Energy Upgrade Scheme. Sources of funding are also available for activities such as decarbonisation of public buildings and social housing. It is essential that the Council continues to attract grant funding in order to deliver on key climate change schemes.

The role of raising wider funding also needs to be considered, yet councils are dependent on new powers being granted in order to raise money for key projects which deliver a community benefit. The current ability and capacity

of the council to raise finance for projects will be reviewed as part of the development of the Climate Action Plan.

Co-benefits of tackling climate change

Through our eight identified themes, we outline the multiple co-benefits of pursuing action in each area. We recognise that, beyond carbon emissions and adaptation to climate change, many of the actions needed will also provide wider benefits for people, growth and the environment. By tackling congestion in our urban areas we can improve air quality, and by delivering high quality retrofitted properties we can address fuel poverty and the poor health outcomes of living in cold and damp homes.

We have mapped out eight key co-benefits of action:



Reducing fuel poverty



Improving health and wellbeing



Boosting jobs and growth



Improving air quality



Reducing the impact of flooding



Boosting Biodiversity



Reducing traffic congestion



Ensuring a fair society

Themes

Eight key themes have been identified, reflecting the broad scope of work needed to effectively address climate change for South Kesteven.





Built Environment

Co-benefits



Reducing fuel poverty



Improving health and wellbeing

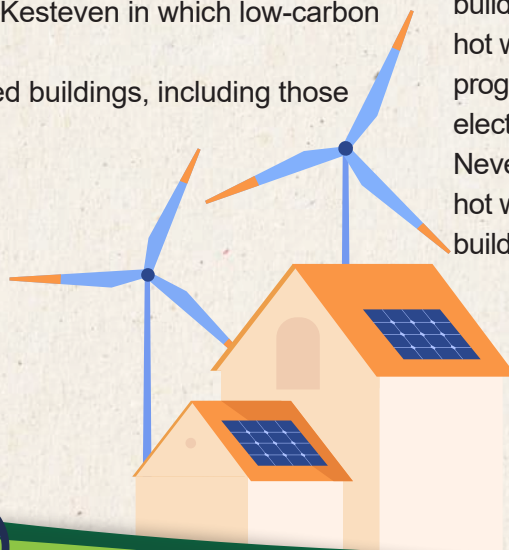


Boosting jobs and growth



Ambitions

- Lead local action to deliver high quality retrofit of domestic properties, across tenure types
- Help to deliver new developments in South Kesteven in which low-carbon principles are embedded
- Continue to decarbonise public sector owned buildings, including those owned by South Kesteven District Council



Our vision

Buildings across South Kesteven have high energy efficiency, reduced dependence on fossil fuel heating systems and are better adapted to the impacts of climate change

The Built Environment is a central tenet of climate action. Buildings are currently responsible for more than 40% of global energy use, and one third of global greenhouse gas emissions. South Kesteven is in line with this global pattern: in 2020, Domestic, Industrial, Commercial and Public Sector buildings accounted for 40.5% of overall reported greenhouse gas emissions.

As one of our defined themes, Built Environment interacts with other themes, principally under Power for considerations of energy supply and use to buildings, as well as Transport for links for existing and new developments and Resources regarding considerations of build materials and embedded carbon.

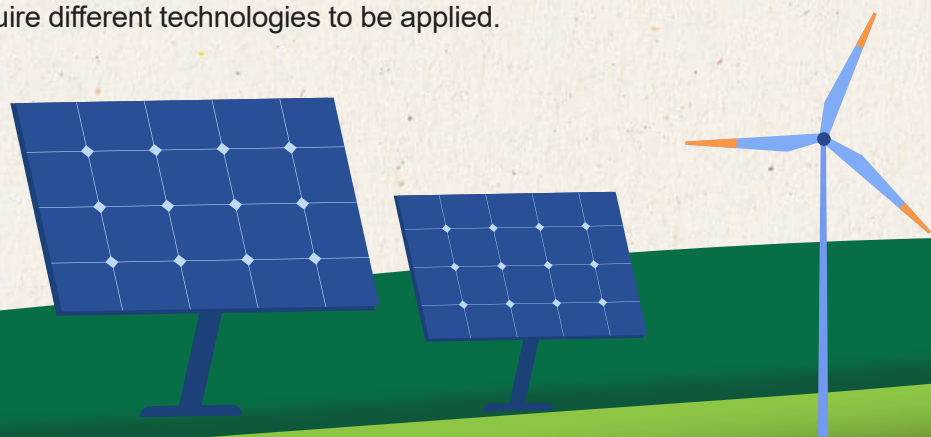
Decarbonising buildings is a fundamental challenge. In order to meet the national net zero goal, carbon emissions produced in heating and powering our homes urgently need to be addressed for our homes, workplaces and public buildings. Energy use in buildings is used for heating and cooling, cooking, hot water and other energy-using applications. The UK has made significant progress in increasing the proportion of renewable sources of energy to produce electricity, resulting in rapid decarbonisation of the national supply of electricity. Nevertheless, the majority of buildings still rely on fossil fuel energy for heating, hot water and cooking. As a result, the vast majority of carbon emissions from buildings result from heating: 79% of overall building emissions⁵.

The UK has a number of challenges to decarbonise the building stock of the country. Britain has the oldest housing stock in Europe, a fifth of dwellings were constructed prior to 1919 and still form the backbone of our urban areas today⁶. Despite the immense cultural and historic value of our building stock, this presents a serious challenge in reducing heat loss and more broadly making them healthy, safe and suitable for the future. Of the UK's 28 million households, there are approximately 17 million properties below EPC band C. In order to cost effectively decarbonise heating, most or all of these buildings will need to be addressed before 2050.

The UK's housing stock is also changing very slowly over time, and it is clear that the current challenges we face cannot be addressed alone by substantial replacement by newbuild. Retrofitting existing dwellings will be the backbone of decarbonisation and of climate adaptation actions in the next decades. It must also be recognised there is no one-fits-all solution for retrofitting buildings effectively. In order to deliver on decarbonisation and also address issues of damp in buildings, health of inhabitants and reducing overall energy demand, every property upgraded must be considered on a case-by-case basis. In order to meet the needs of our diverse housing stock, the path to net zero therefore will require different technologies to be applied.

New developments will also need to adapt to meet the challenge of decarbonisation. The UK government has affirmed commitment to building around 300,000 new homes a year by the mid 2020s in England⁷. It is expected that the government's Future Homes Standard⁸, to be affirmed into law in 2025, will require new build homes to be future proofed with low carbon heating and improved energy efficiency. Particularly, it is expected that there will be a ban or rapid phase out of gas boilers installed in new developments from 2025 onwards, and alternative technologies such as heat pumps and heat networks will need to play a key role in heating new buildings, which have a lower heating demand through design. Building low carbon heat into new builds from the outset will ensure these buildings do not need to be retrofitted later to meet national net zero targets.

Buildings off the gas grid are of particular consideration for decarbonisation. There are over 4 million homes in Great Britain⁹ and over 278,000 non-domestic buildings¹⁰ that are in areas off the gas grid. South Kesteven is a predominantly rural area which is reflected in building heating fuel source. The district is estimated to have in 2020 around 22% of properties with no connection to gas for heating, compared to a national average of 14%¹¹. These buildings employ other methods for primary heating: and can be homes with oil, LPG and coal or solid fuel boilers or electrically heated through storage heaters or direct electric heating. The former group have high carbon emissions from heating systems and often contribute to poor air quality in the form of



5 Final UK greenhouse gas emissions national statistics: 1990 to 2020 - GOV.UK (www.gov.uk)

6 The-Housing-Stock-of-the-United-Kingdom_Report_BRE-Trust.pdf (bregroup.com)

particulate matter from combustion. The latter group of electrically heated properties often have ageing, inefficient systems, leading to great expense for the inhabitant to heat satisfactorily and contribute to accelerated energy demand. The government's national Heat and Buildings Strategy outlines off-gas homes as a clear opportunity for decarbonisation in the form of heat pumps, and greater application of communal heating via a heat network¹².

The potential for buildings to overheat in summer months also must be a more prominent consideration for the built environment. Energy efficiency measures, when installed incorrectly or without the appropriate adaptation measures, can exacerbate summer overheating. New developments need also to take account of the increased likelihood of extreme heat in summers. Overheating in new and refurbished homes can be addressed through passive cooling measures including better shading, reflective surfaces and green cover. Addressing building overheating through passive measures is of particular importance as it is anticipated in a warmer future for the demand for cooling to increase. Improving energy performance, both by sensitive retrofit of existing buildings and by integration of appropriate features into new developments, is key to future proofing the built environment and minimising carbon emissions.

There will be a greater role for energy planning and mapping for decarbonisation. The Heat and Buildings Strategy recognises the value of local authorities leading the process of energy planning at the local level, maximising existing knowledge of the built environment and partnerships with key local stakeholders including utilities, highways, other public sector bodies, the social housing sector, businesses, industry and developers.

In light of the current cost of living crisis and focus on the escalating cost of energy across all sectors, there is a renewed call for action to reduce energy used in buildings and simultaneously decarbonise. The UK Government recently confirmed its target to reduce buildings and industry energy demand by 15% by 2030 (relative to 2021)¹³. To make this ambition a reality, £6 billion of new government funding to back this target will be made available from 2025 to 2028. This is in addition to the £6.6 billion of existing funding through Help to Heat Schemes including the Social Housing Decarbonisation Fund, Home Upgrade Grant and Local Authority Delivery Scheme.

**South Kesteven District Council
secured £1.2m of funding to deliver
energy efficiency upgrades to
homes within the district.**



Current activities from South Kesteven

■ Home Energy Upgrade Scheme (LAD/HUG)

- o South Kesteven District Council secured £1.2m of funding to deliver energy efficiency upgrades to targeted homes within the district. The core aims of the scheme are to alleviate fuel poverty alongside reducing carbon emissions associated with energy used in domestic properties.

■ Energy efficiency upgrades completed to 152 Council owned properties

- o A programme funded via the Green Homes Grant allocation to local authorities has delivered upgrades to heating systems. To date, 152 properties have received upgrades to low-carbon heating systems, which will make homes warmer and reduce energy costs for tenants. These properties, with no connection to the gas supply grid, were heated with inefficient storage heaters or solid fuel systems, and as a result are typically more expensive to run and have a higher than average carbon footprint. Upgrades will see an improvement in the property's Energy Performance Certificate.

■ Embedding climate change and carbon reduction through the Local Plan review

- o The current Local Plan Review (2041) will enable necessary updates of evidence and relevant national Planning guidance, including local implications of climate change for South Kesteven. The outcomes of the work will enable SKDC to make evidence-based decisions on Local Plan policy.

To date, 152 properties have received upgrades to low-carbon heating systems, which will make homes warmer and reduce energy costs for tenants.



- 7 Building the homes the country needs.pdf (publishing.service.gov.uk)
- 8 Heat in Buildings - GOV.UK (www.gov.uk)
- 9 Sub-national estimates of properties not connected to the gas network - GOV.UK (www.gov.uk)
- 10 Non-domestic National Energy Efficiency Data-Framework (ND-NEED), 2020 - GOV.UK (www.gov.uk)
- 11 Sub-national estimates of properties not connected to the gas network - GOV.UK (www.gov.uk)
- 12 HM Government – Heat and Buildings Strategy (publishing.service.gov.uk)
- 13 Government joins with households to help millions reduce their energy bills - GOV.UK (www.gov.uk)

Power

Co-benefits



Reducing fuel poverty

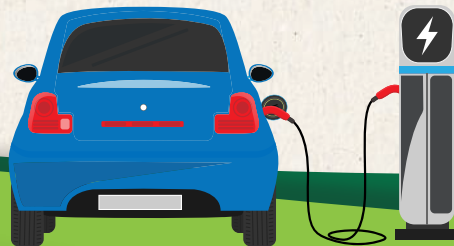


Boosting jobs and growth



Ambitions

- Identify and deploy renewable energy solutions where viable for SKDC properties
- Drive partnership opportunities to support and encourage renewable energy generation in the district and unlock green growth
- Support energy efficiency opportunities across the board to reduce overall energy demand



Our vision

South Kesteven has increased renewable energy generation and is more self-sufficient for energy

This policy area considers how we generate, store and consume power. Power interacts with many other areas, including Transport for considerations of provision of infrastructure for electric vehicles, and Built Environment for considerations of energy supply and use to buildings.

The carbon intensity of the national supply of electricity has reduced by over 40% in the last 5 years¹⁴, due to the large-scale integration of renewable energy, displacing generation from fossil fuels. Renewable energy generation capacity is now six times greater in 2020 than it was in 2010¹⁵, thanks to the contribution of off and onshore wind, solar, bioenergy and hydropower.

The global drive to reach net zero by 2050 will also mean we are likely to be using more electricity than ever before in the coming years, as energy use switches away from fossil fuels. Additional demand will come as more homes rely on electrically driven heat pumps, and as electric vehicles become more predominant. It will be important to pursue opportunities at every turn to combat energy wastage and ensure energy efficiency is embedded.

Transmission and distribution of electricity from where it is generated to where it is used is a fundamental consideration in supporting the move towards decarbonised energy. Our electricity grid will need to be capable of transmitting more energy in the future, which requires significant upgrades across the network.

SKDC has previously installed solar PV on leisure centres in Grantham, Bourne and Stamford which provide energy used on site, reduce carbon emissions and generate income.

Reducing the amount of energy consumed to the lowest possible amount and addressing energy wastage is an obvious means of reducing carbon emissions. Across the Council's operations, the current Carbon Footprint and reduction opportunities report outlines several actions to reduce energy use from Council buildings¹⁶. The Council has delivered or is currently delivering projects to domestic properties to improve energy efficiency and switch heat to electric sources (as detailed in the Built Environment section). It is recognised that, alongside furthering these existing projects, the Council can have an important role in encouraging wider energy efficiency action, including through development that incorporates energy efficiency at the design stage and through co-ordinated engagement and communication with residents.

The development of renewable energy at every level will be important to drive local energy generation and provide a tangible contribution to national net

zero targets. SKDC has previously installed solar PV on leisure centres in Grantham, Bourne and Stamford which provide energy used on site, reduce carbon emissions and generate income. When future capital developments are considered by the Council, incorporating renewable energy and low carbon heating will be fundamental to meet our carbon reductions target. Maximising the potential for renewable opportunities for all other SKDC properties is an important next step towards our net zero targets.

In order to expand renewable energy potential at scale, unlocking small and large scale renewable projects throughout the district is necessary. The Council is currently undertaking an early review of its Local Plan, with the Local Plan review setting out the planning framework for the district over the next 20 years up to 2041. As part of this broader work, development of a policy for renewable energy is due to take place to set out expectations for new renewable developments.

Current activities from South Kesteven

- **Renewable energy generation for South Kesteven leisure centres**
 - o Solar PV panels have been installed on leisure centres in Grantham, Stamford and Bourne since 2012. In total 600 panels across the centres generate an average of 150,000kWh of electricity which are used directly in the centres. The on-site generation helps to lower the overall electricity used by each centre.

14 Final UK greenhouse gas emissions national statistics: 1990 to 2020 - GOV.UK (www.gov.uk)

15 Energy Trends: UK renewables - GOV.UK (www.gov.uk)

16 Carbon Reduction Action Plan Design v0.1 (southkesteven.gov.uk)



Growing our green economy

Our vision

South Kesteven has a strong low-carbon economy and there are more low-carbon employment opportunities

Co-benefits



Reducing fuel poverty



Boosting jobs and growth



Ensuring a fair society

Ambitions

- Provide a supportive structure for skills and training for low carbon and net zero businesses
- Boost the number of low carbon businesses operating within South Kesteven and work towards becoming a regional hub for low carbon business
- Ensure Council procurement activity delivers local benefits for net zero

This theme considers the interactions between the economy and reaching net zero for South Kesteven. Growing our green economy interacts with many other areas, including Built Environment, Power and Transport for considerations around infrastructure, as well as Resources and Communities.

The net zero economy is the economic opportunity of the twenty-first century. Analysis by McKinsey has found that the supply of goods and services to enable the global net zero transition could be worth £1 trillion to UK businesses by 2030¹⁷. In the UK alone, in order to reach net zero carbon across the country by 2050, nearly 28 million homes and the premises of 6 million businesses will need to improve their energy performance including changes to lighting, heating systems, cooking and microgeneration. This needs to be underpinned by wider changes to our power system, development of alternative fuels, rollout of low-emission vehicles within the next 30 years.

Whilst taking steps towards the UK's target to reach net zero by 2050, the ongoing transition towards a zero carbon economy can bring benefits to the economy as a whole. Companies leading the way on net zero are now contributing more than £70 billion to the UK economy, which represents more than twice that of the energy sector¹⁸.

Boosting the net zero economy also represents a clear path to levelling up regions across the country. Research conducted by CBI Economics to measure the scale of the UK's net zero economy and geographic patterns found that economic activity associated with net zero is clustered outside of London, with hotspots found from Derbyshire to Leicestershire to Yorkshire and the Humber¹⁹.



Sub-sector	Definition
AgriTech	Companies developing technologies and services transforming traditional agricultural practices.
Building and building technologies	Companies providing technology and services for increased energy efficiency in buildings.
Carbon capture	Companies dedicated to carbon capture, storage and utilisation.
Low emission vehicles	Companies focusing on the development of technology and infrastructure for electric vehicles.
Energy co-operatives	Energy producers where citizens have ownership over the energy source.
Energy storage	Companies providing services and technology to capture energy for use at a later time.
Grid, demand side response and efficiency	Organisations dedicated to energy management and energy infrastructure development.
Heating	Companies supporting low carbon heating.
Diversion of biodegradable waste from landfill	Companies focusing on landfill management.
Low carbon	Companies providing energy from low carbon sources.
Pollution control and mitigation	Companies providing services and technology for the mitigation of pollution.
Renewables	Companies providing energy from renewable sources.
Waste management and recycling	Companies dedicated to solid waste removal, management and processing.
Low carbon consultancy, advisory and offsetting services	Companies providing environmental consultancy for the low carbon economy.
Green finance	Structured financial activity aimed to create a better environmental outcome.
Renewable Energy Planning Database	A list of companies generated by the Renewable Energy Planning Database – a database of renewable energy projects over 150KW to capture additional renewable energy businesses.

TABLE 1: NET ZERO ECONOMY TAXONOMY OF BUSINESS ACTIVITY, DEVELOPED BY CBI ECONOMICS FOR ENERGY AND CLIMATE CHANGE INTELLIGENCE UNIT.

17 Opportunities for UK businesses in the net-zero transition | McKinsey

18 Mapping-net-zero-economy-ECIU-CBI-DataCity-Jan2023.pdf (edcdn.com)

19 ibid

For our region, the East Midlands demonstrates a strong net zero economy. Over 4% of Gross Value Added or GVA (an indicator of the value generated from production of goods and services) derives from businesses engaged in the net zero economy and is associated with 3.3% of jobs in the region. This is driven by a strong contribution from the energy sector as well as manufacturing and water and waste management.

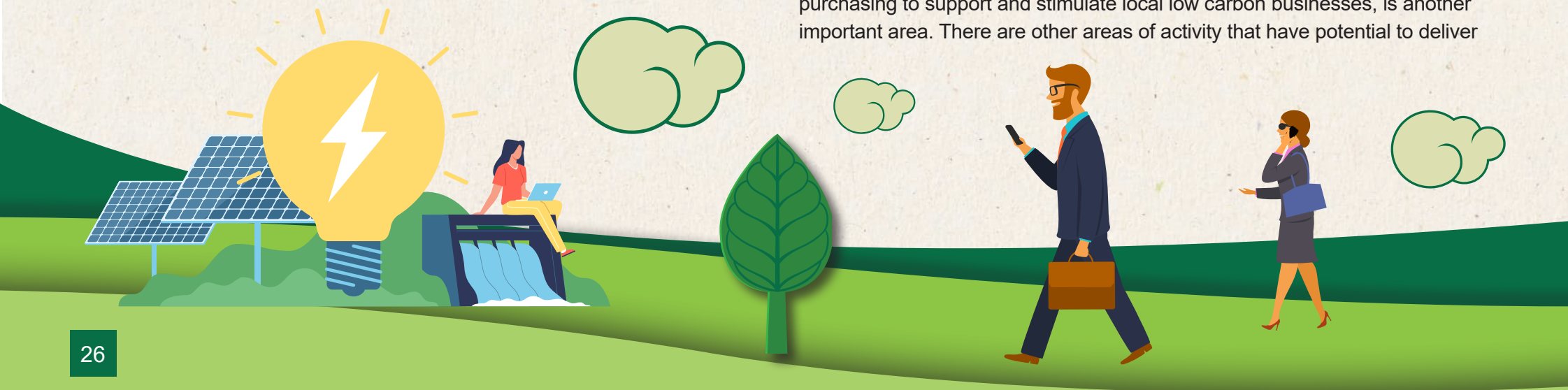
Net zero business is also addressing the challenge of struggling productivity rates. Labour productivity is lagging: South Kesteven's productivity was 22.9%, lower than the UK average in 2020. The net zero economy generates an average £135,100 per employee, and 2.5 times higher than the East Midlands average. A large proportion of this is driven by the strong presence of the energy sector, which is highly capital intensive.

Despite these green shoots, the pace of change of the UK economy will need to accelerate in order to meet net zero by 2050. Research conducted for the Local Government Association (LGA) in 2021 found that over 96,000 direct jobs employed in the low carbon economy will be required in England by 2050, including a projected 2,268 employment opportunities within South Kesteven.

Almost half of these are expected to be delivering low carbon electricity or low carbon heating, a further quarter in energy efficiency and the remainder in low emission vehicles, alternative fuels and low carbon services.

Supporting the skills base for this transition towards a low carbon economy in South Kesteven is vital. The average skills requirement for a job in a carbon-intensive industry is 46% lower than the average net zero related job. The district is well placed to capitalise on developing and attracting net zero employment opportunities. The skills profile for South Kesteven residents is superior to local, regional and national trends: in 2021, 81.8% of the district's population aged 16-64 possessed at least a level 2 qualification (equivalent to 5 good GCSEs). Mapping out how best the Council can support upskilling for the low carbon economy in South Kesteven and implementing a programme of support for business will be crucial.

There is also a role for South Kesteven District Council to play in the local economy. The council procures a significant value of supporting services and products from within the district as well as further afield. Better understanding the carbon implications of the Council's supply chain, as well as how to improve purchasing to support and stimulate local low carbon businesses, is another important area. There are other areas of activity that have potential to deliver



on several ambitions outlined within this Strategy: for example, driving forward a significant programme of domestic retrofit within South Kesteven will not only deliver carbon reduction through improved efficiency, it also offers significant potential to grow South Kesteven businesses operating in the low carbon heat and energy efficiency sectors.

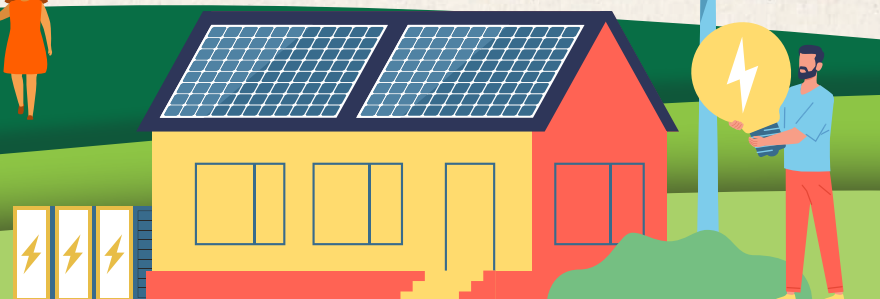
For businesses, there are opportunities to capitalise on the move to net zero with investment in low carbon goods and services that cater to consumers rapidly shifting spending patterns. Local authorities clearly have an important role to play in driving climate action and enabling business to take advantage of these opportunities.

Current activities from South Kesteven

■ South Kesteven Economic Development Strategy 2023–2028

- o The draft Economic Development strategy to 2038 includes the vision for the district to develop a low carbon circular economy, supporting businesses already operating in the low carbon sector and helping existing businesses lower their carbon emissions.

Driving forward a significant programme of domestic retrofit within South Kesteven will not only deliver carbon reduction through improved efficiency, it also offers significant potential to grow South Kesteven businesses operating in the low carbon heat and energy efficiency sectors.



20 Subregional productivity: labour productivity indices by local authority district
- Office for National Statistics (ons.gov.uk)

21 Mapping-net-zero-economy-ECIU-CBI-DataCity-Jan2023.pdf (edcdn.com)

22 Local green jobs - accelerating a sustainable economic recovery in South Kesteven | LG Inform

23 Microsoft Word - SKILLS DRAFT.docx (ukonward.com)

Natural Environment

Co-benefits



Boosting
Biodiversity



Reducing the
impact of
flooding



Improving health
and wellbeing



Ambitions

- Engage with partners to support projects boosting biodiversity and tree planting in South Kesteven
- Manage Council owned green spaces to boost biodiversity
- Embed Biodiversity Net Gain principles into new developments



Our vision

Wildlife habitats are valued, maintained, enhanced and created in South Kesteven and biodiversity is restored

This area considers the interaction of the natural environment with carbon reduction efforts and impacts of a changing climate on the natural world. Natural Environment overlaps in some way with all other themes explored in this document.

The natural environment is the fundamental underpinning of life on earth, and a healthy natural environment affects all those who live in it. Nevertheless, the natural environment is facing a triple planetary crisis of climate change, pollution and biodiversity loss that have led to the ongoing degradation of our environment.

Key to the effective functions of our natural environment is biodiversity, a healthy network of interconnected species. However, the UK has seen prolonged damage to habitats and ecosystems, resulting in the loss of nearly half of the UK's biodiversity since the Industrial Revolution and the lowest 10% of nations globally for biodiversity loss.

Land is a critical natural asset, but the UK's net-zero target will not be met without changes in how we use land. In 2020, the agricultural sector was attributed to 15.97% of reported greenhouse gas emissions: higher than the UK national average, reflecting South Kesteven's rural geography. Yet, it is possible



to reduce land-based emissions of greenhouse gases while delivering on other strategic priorities including biodiversity, food production, climate change adaptation, and renewable energy generation.

The wider benefits of a healthy, functioning set of ecosystems are also becoming better understood. Integrating and improving blue and green infrastructure into urban environment brings a host of benefits beyond contributions to biodiversity, and the links between health and wellbeing and access to well managed green spaces are increasingly recognised.

Biodiversity loss is also a critical issue to be tackled at the local level. One way this is being approached is via new duties for planning authorities to ensure new developments or significant changes to land management see an improvement of measured biodiversity. This approach, known as Biodiversity Net Gain, aims to deliver measurable improvements for biodiversity by creating or enhancing habitats in association with development. These improvements can be achieved directly on-site, off-site or a combination of the two to ensure measurable progress. The expectation for sites, under the Environment Act 2021, is that all planning permissions granted in England (with a few exemptions) will have to deliver at least 10% biodiversity net gain, and will need

to be secured for at least 30 years. Biodiversity Net Gain will apply from November 2023, and South Kesteven District Council will continue to review the necessary preparations for the planned start date of biodiversity net gain requirements, including understanding where these duties overlap with other areas of the Council beyond planning.

Afforestation, including tree and hedge planting, is one way to deliver on biodiversity improvements whilst providing opportunities to store carbon from the atmosphere in the longer term. Opportunities to take forward projects to boost biodiversity on Council owned spaces will be further explored. Tree planting alone is not suitable for all habitats, and the priorities of carbon reduction and improvements in biodiversity need to be carefully managed.

Whilst recognising the wider benefits of well-managed tree planting schemes for South Kesteven, it is important to also consider carbon offsetting practices. Given the number of opportunities outlined in this document for direct carbon emissions reductions, carbon offsetting via tree planting schemes or other methodologies will not be actively promoted above direct emissions reductions to achieve the Council's carbon reductions target. Nevertheless, there is an important role for appropriately designed and sited schemes, in order to see local benefits for biodiversity.



24 What is the Triple Planetary Crisis? | UNFCCC
25 V2 BNG Brochure final edits to make (blog.gov.uk)
26 Environment Act 2021 (legislation.gov.uk)



Consideration also needs to be given to existing areas of peat bog and peat soils within South Kesteven. Tracts of fenland peat soil are found within the district, predominantly bordering South Holland. As an agricultural resource, fenland soils are highly valued due to their high fertility and easily draining nature. Nevertheless, these landscapes are particular sources of carbon emissions if not well managed. Dry peat soils release their carbon to the atmosphere and are exposed to the elements, leading to soil erosion. This effect is exacerbated by the impact of droughts and heatwaves, which Lincolnshire is set to see more of as a consequence of climate change. The government's 25 year Environment Plan has set a target for all peat soils to be sustainably managed by 2030, helping to meet district level carbon emissions reduction.

It is expected in coming years there will be a more formal set of expectations around carbon offsetting. Currently, these schemes can offer an interested buyer a set amount of carbon offset credits, which are typically through tree planting schemes or peatland restoration. Nevertheless, the Committee on Climate Change has recommended to government that stronger guidance, regulation and standards should be developed and put in place to ensure purchase of carbon credits is not used as a substitute for direct emissions reduction, following the carbon management hierarchy, in order to improve the integrity and transparency of carbon credits.

With stronger guidance in place, credit based systems for carbon offsetting and biodiversity net gain offer the double benefit of also supporting adaptation to a warmer climate. Sensitive siting of new trees can deliver benefits including cooling street temperatures, or stabilising river banks during periods of heavy rainfall.

In order to maximise opportunities to boost local biodiversity, support ecosystems into the future and seek to naturally store carbon, it will be necessary to work closely with partners, including public sector organisations, to develop jointly led projects and provide a supportive role to wider opportunities for the district.

The government's 25 year Environment Plan has set a target for all peat soils to be sustainably managed by 2030, helping to meet district level carbon emissions reduction.



Current activities from South Kesteven

■ Witham/Slea blue-green corridor project

- o Major ecological improvements are being implemented for 14 areas of North and South Kesteven in a major partnership project including the Environment Agency. As well as delivering and improving habitats in or near the river, the aim is to help connect communities and provide health benefits for residents.

■ Tree planting in Council open spaces

- o South Kesteven District Council has completed several tree planting projects throughout the winter of 2021/2022. 50 trees were planted on council managed open spaces throughout the district, with a focus on improving amenity of green spaces and boosting biodiversity. A further 70 trees were planted with the assistance of a successful bid to the Treescapes fund, co-ordinated by Lincolnshire County Council in selected open areas.



27 25 Year Environment Plan - GOV.UK (www.gov.uk)

28 Voluntary Carbon Markets and Offsetting - Climate Change Committee (theccc.org.uk)

Transport

Co-benefits



Improving
air quality



Improving health
and wellbeing



Boosting jobs
and growth



Reducing traffic
congestion

Ambitions

- Support opportunities to reduce need to travel and unlock near term carbon reductions
- Ensure South Kesteven has a high-quality network of electric vehicle charging points that meets the needs of residents, businesses and visitors
- Work to embed public transport and active travel options for urban journeys

Our vision

Emissions from transport are reduced throughout South Kesteven and there are more flexible and low carbon travel options

As one of our themes, Transport interacts with other areas, including Power for considerations of provision of infrastructure for electric vehicles, and Built Environment for transport links to existing and new developments.

Transport fundamentally shapes our towns, cities, countryside as well as our living standards and health. Transport is also the largest single contributor to domestic GHG emissions: responsible for 24% in 2020, and 27% in 2019 pre-pandemic²⁹. 90% of these emissions derived from travel on minor or major roads or motorways. Government data for local authorities does not include international aviation or shipping, but a commitment has been made to include these aspects in national carbon reporting in future.

South Kesteven is a district of 364 square miles, spanned by the A1 and traversed by the A52 in the north of the district. This geography and predominantly rural aspect of the district by its nature causes many to be reliant on cars. In 2020, current transport networks contributed 30.4% to South Kesteven's overall greenhouse gas emissions, principally through the road transport network.

Aside from carbon emissions, transport also remains one of the largest sources of air pollution in the UK, with significant implications for health and wellbeing. It is estimated that if poor air quality is not addressed, it could cost health and social care services in England £5.3 billion by 2035³⁰. Noise from the road network also has a significantly detrimental effect on health: it is estimated the annual social cost of urban road noise in England is £7 billion to £10 billion³¹.



Within South Kesteven, there is one declared Air Quality Management Area covering a section of Grantham town centre, deflecting the poor air quality principally deriving from vehicle emissions from the established road networks of the A1, A52 and A1175³².

There is strong public support for action to remove transport's emissions. Decarbonisation of transport has the potential to shape better places for us to live and work and represents a prime opportunity to increase economic growth and future prosperity through uptake of electrification and sustainable low-carbon fuels³³. In 2020 the UK government has made the headline commitment to phase out the sale of new petrol and diesel cars from 2030, with all new cars and vans being fully zero emission from 2035 .

In order to facilitate this transition, the provision of an effective network of electric vehicle charging options will be fundamental. As of 1 October 2022, there were almost 35,000 public electric vehicle chargers in the UK, of which 6395 were rapid chargers, defined as a device where the fastest connector is rated at 25kW or above. To date South Kesteven possesses forty-seven public charging devices. Of those thirty-one are rapid chargers. This equates to 32 chargers per 100,000 residents and places South Kesteven in the top twenty percentile of districts UK wide for public charging devices installed . We believe the Council has a part to play in ensuring that the transition to electric vehicles is not inhibited by a lack of appropriate infrastructure in our area. South Kesteven District Council have installed 12 charge points within our managed car parks in the four towns of the district and continue to monitor uptake and future opportunities to expand on this, alongside work with Lincolnshire County Council for on-street charging opportunities and incorporation of charge points into new development plans.

Nevertheless, a decarbonised transport network cannot rely on the switch of private vehicles to electric alone. The provision of more mobility options is fundamental to decarbonisation efforts, reflecting that the majority of trips are



short distance. The UK government's Transport Decarbonisation Plan of 2021 sets out the ambition for urban areas to see a reduction in motor traffic, and trips to be replaced with greater uptake of public transport, cycling and walking. Simultaneously, providing options beyond private motor transport in rural areas can be transformative for allowing the elderly, less mobile and younger people to travel further afield.

Changes in commuting, business travel and shopping habits embedded during the pandemic in 2020 and 2021 have the potential to lead to a reduction in traffic more widely. Reducing the need to travel through hybrid working and remote meetings is also an opportunity for the Council to reduce our operational carbon footprint and those of the district, whilst enhancing work-life balance for many staff and improving productivity. Reviewing travel related policies to maximise these benefits will be important. A significant increase was also recorded in people walking and cycling for leisure and for everyday journeys, and the government confirmed the target that active travel (including walking, cycling and scooting) should make up at least half of all journeys in towns and cities by 2030. Achieving this will require a commitment at all levels of decision making to ensure active travel becomes the natural choice for short, urban journeys.

The vast majority of all transport journeys are local and thus the role of local governance is fundamental. South Kesteven District Council has a number of roles regarding shaping transport decisions, in our role as planning authority and in our oversight of the declared Air Quality Management Area in Grantham town centre. In order to develop on the ambition set out in this document, we must continue to work closely with Lincolnshire County Council in their role as highways authority for the county and in shaping key decisions for our district. Greater consideration of providing public transport and active travel infrastructure for new developments will also be critical. Embedding transport decarbonisation principles and a clear hierarchy of travel for developments is essential for effective spatial planning.

South Kesteven District Council can also have a role regarding our own fleet of vehicles. Currently over 150 vehicles are operated by the Council, to fulfil functions including repairs to Council properties, service dependent travel throughout the district and for waste collection. A review of the Council's vehicle fleet was completed in 2022, with assistance from the Energy Saving Trust, with recommendations for short and longer term savings to be made in order to reduce carbon emissions arising from the Council's fleet of vehicles.



Current activities from South Kesteven

■ Electric vehicle charge points in Council car parks

- o SKDC have installed 12 electric vehicle charge points in Council managed car parks across the district, part funded through the On-Street Residential Charging Point Scheme. The uptake of each installed charger is monitored to understand demand and inform future installations.

■ Provision of electric vehicle charge points for new developments

- o Local Plan policy SB1: Sustainable Building states that All new developments should demonstrate how they can support low carbon travel. In order to achieve this, residential development will be expected to provide electric car charging points and new commercial development should make provision for electric car charging points.

It is estimated that if poor air quality is not addressed, it could cost health and social care services in England £5.3 billion by 2035.

29 Final UK greenhouse gas emissions national statistics: 1990 to 2020 - GOV.UK (www.gov.uk)

30 Nitrogen dioxide: effects on mortality - GOV.UK (www.gov.uk)

31 Noise pollution: economic analysis - GOV.UK (www.gov.uk)

32 Air quality (southkesteven.gov.uk)

33 Decarbonising Transport – A Better, Greener Britain (publishing.service.gov.uk)

34 The ten point plan for a green industrial revolution - GOV.UK (www.gov.uk)

35 Electric vehicle charging device statistics: October 2022 - GOV.UK (www.gov.uk)

36 SKDC Electric Vehicle Charging Points (southkesteven.gov.uk)

37 Decarbonising Transport – A Better, Greener Britain (publishing.service.gov.uk)

38 Gear change: a bold vision for cycling and walking (publishing.service.gov.uk)



Resources

Co-benefits



Boosting jobs
and growth



Boosting
Biodiversity

Ambitions

- Reduce the quantity of waste produced in the district
- Increase proportion of waste reused, recycled or composted to support the regional circular economy
- Ensure water is used in the most efficient way

Our vision

Waste is valued as a resource and circular economy principles are in practice, water efficiency and management is improved

Resources relate to waste, water, as well as the wider use of materials throughout the economy. It relates all themes outlined in this document.

The way that we use materials and resources is a fundamental consideration for climate change. The Consumption emissions section sets out the breakdown of an average UK household's carbon emissions in 2019. On average, each person in the UK emits 5 tonnes of carbon each year from consumption of every items, principally food but also including clothing and footwear, household goods and appliances, use of restaurants and hotels and consumption of wider services.

Moving towards a circular economy in the way we all use resources is vital. It is estimated that the whole global economy is only 7.2% circular today: of the 100 billion tonnes of virgin materials extracted from the earth, only 7.2% make it back into the economy in the form of recycled or reused materials . Better management of waste is one way to support the transition to greater circularity of materials. Within South Kesteven to 2020, 40% of waste collected from households was recycled, composted or reused, compared to a UK rate



of 44.4%. This missed the government target to recycle 50% of waste from households by 2050.

Building on the value of certain waste materials will not only boost recycling efforts but support in the move towards a more circular economy. Improved segregation of materials improves their ability to be reused or recycled into new products, as opposed to becoming contaminated and being diverted to incineration.

South Kesteven District Council is one of the member authorities of the cross-county Lincolnshire Waste Partnership, which focuses partnership efforts to improve waste management. Introduction of new schemes in Lincolnshire to separate mixed recycling further will provide a direct boost to the value of materials and ability to reuse. The volume of waste produced from households is also a key area of action, and waste minimisation efforts including sustained communication to residents about opportunities to reduce waste will also deliver a carbon reduction.

Commercial waste represents another opportunity. There are distinct opportunities for businesses to make use of waste streams and make the most of reuse opportunities. Upcoming changes from government including Extended Producer Responsibility will provide an incentive for use of packaging materials that are easier to recycle. The recent announcement of a Deposit

Return Scheme (DRS) has also set an initial target for collecting over 85% of returnable drinks containers once the scheme is up and running.

New restrictions banning the sale of certain damaging single-use plastics, including plastic plates, trays, bowls and cutlery from October 2023 aim to dent the massive volume of throwaway items used in the UK every year. It is important that opportunities to phase out the need for single use items, rather than replacing plastic with another material, are fully exploited in order to maximise carbon reduction.

Each of these schemes will also go on to have an impact on consumer behaviour around product choice and recycling, and the Council can have an important role in boosting understanding through our communications on waste and recycling.

Management of natural resources within our district is also vital, particularly



for management of water. Water provides valuable services which underpin our natural environment, economy, and agricultural productivity. As one of the driest regions of the country, the judicious management of water becomes even more important. One of the expected impacts of climate change in coming years is extended periods of drought from low seasonal rainfall, further exacerbating the need to preserve the use of water. The existing Local Plan sets expectations that new development should seek to achieve a 'water neutral' position, and

include features to minimise water use. Across Council operations, there is the opportunity to review hotspot areas of use and ensure new developments meet best practice standards for water use.

Finally, the Council procures a range of products in order to deliver some of our key services. Reviewing opportunities to phase out some products in favour of more reusable alternatives will help to reduce production carbon emissions and boost the local circular economy.

Current activities from South Kesteven

■ Lincolnshire Waste Partnership

- o The Lincolnshire Waste Partnership (LWP) is a co-ordination of efforts of the seven district councils within Lincolnshire, Lincolnshire County Council and the Environment Agency. Around 350,000 tonnes of waste is dealt with by LWP annually, the majority of which is household waste. The Joint Municipal Waste Strategy has set 10 objectives for partners, including improving the quality of the recycling stream, contributing to the UK wide recycling targets and reducing the carbon emissions associated with waste collection and disposal.



One of the expected impacts of climate change in coming years is extended periods of drought from low seasonal rainfall, further exacerbating the need to preserve the use of water.

39 1. Report: CGR Global 2022.pdf - Google Drive

40 Packaging waste: prepare for extended producer responsibility - GOV.UK (www.gov.uk)

41 Deposit Return Scheme for drinks containers moves a step closer - GOV.UK (www.gov.uk)

42 Far-reaching ban on single-use plastics in England - GOV.UK (www.gov.uk)

43 Worries about climate change, Great Britain - Office for National Statistics (ons.gov.uk)

Communities

Co-benefits



Ensuring a fair society



Boosting jobs and growth



Ambitions

- Lead on communications and engagement within the district on climate change, adaptation and carbon reduction
- Engage with the South Kesteven community on the Climate Action Strategy and carbon reduction aspirations
- Ensure that projects and policy from the Council addressing net zero provides a fair transition, ensuring that no resident is left behind



Our vision

People are more aware of the value of a clean and healthy environment and we are better adapted to a changing climate and extremes of weather

This area considers the twin considerations of ensuring the communities of South Kesteven are enabled to take action against climate change, and that vulnerable communities can adapt to the impacts of a changing climate at a local level. As one of our themes, Communities underpins all other identified areas of this Strategy.

Climate change is already affecting people in South Kesteven. The impacts of a changing climate are being observed within Lincolnshire: record breaking heat, prolonged droughts, and more damaging flooding. The impacts of disruptive weather affect our ability to travel, the crops we are able to grow, and crucially the health and wellbeing of South Kesteven residents.

The general pattern of climate change in the UK is towards warmer and wetter winters, hotter and drier summers, and an increased likelihood of extreme weather events. This presents a risk to our communities, particularly those who are more vulnerable and at risk of the adverse impacts of climate change. Within South Kesteven, some of those vulnerabilities are likely to include: homes, businesses and other infrastructure that are susceptible to flooding, transport disruption, residents experiencing fuel poverty, and overheating in homes during summer months.

By understanding the impacts on residents, businesses, and other partners within South Kesteven of extreme weather events will allow for an improved response and better preparation. Four types of severe weather can be

considered most disruptive in the UK: storms and gales; sub-zero temperatures with the risk of snow; heatwaves with high temperatures lasting several weeks; and drought through a lack of rainfall for a prolonged period.

These impacts brought about by extreme and disruptive weather will also have an impact on the ability of the Council to deliver services. Spells of very hot weather may mean that conducting work outdoors becomes difficult or even dangerous. Disruption to the road network from extreme weather could affect services including waste collection. By conducting a thorough analysis of these impacts across Council services, we will be both more aware of specific risks and better prepared for the impacts of different kinds of disruptive weather.

The Council can have an important role in shaping and communicating what action on climate change looks like within South Kesteven in order to play our part in reaching net zero. Communicating the specific risks brought about by a changing climate, as well as a local vision of what changes are needed to bring about reductions in carbon emissions will form the basis of our messaging with residents, businesses and wider partners. There is a distinct potential to amplify the range of breadth of our engagement and communication by working at a cross Lincolnshire level, reflecting the joint ambitions of all councils in the county.

Ensuring that all individuals and groups have the opportunity to input and to be involved is critical for success. Concern about climate change among the public is at a historic high; in late 2020, 90% of respondents reported awareness of the UK government's targets to reach net zero by 2050. It is also crucial that climate action does not exacerbate existing socio-economic issues or worsen inequalities. Maximising the co-benefits of tackling climate change is fundamental to this, and actions and workstreams proposed through the Climate Action Plan will embed this approach. In order to ensure that our work on climate action is effective, appropriate and fair, we will engage with the community of South Kesteven following publication of this Climate Action Strategy.

Current activities from South Kesteven

■ Cost of living support for residents

- o South Kesteven District Council has established a Cost of Living task force to co-ordinate efforts to support those most affected by increases in energy and household prices. An online hub has been developed, signposting to resources and sources of support, and up to date information has been included in the Council's SKToday resident magazine.



Decision Making

Co-benefits



Ensuring a
fair society

Ambitions

- Embed response to climate change and carbon reduction across all areas of the Council
- Review capacity to raise finance to deliver key projects for the Council and district
- Provide comprehensive training to Council staff and Councillors on climate change, carbon reduction and sustainability



Our vision

Climate and net zero considerations are fully embedded within South Kesteven District Council's decision making at every level

The ability of South Kesteven District Council to make informed and effective decisions regarding the wide impacts brought about by climate change is fundamental. Decision making cuts across all themes outlined in this document.

The Council's Corporate Plan 2020-23 provides the context for the Council's wider decision making. One of the five key themes is Clean and Sustainable Environment which sets out the Council's commitment to tackle climate change by reducing the Council's carbon footprint. The next iteration of the Corporate Plan will ensure the commitment to tackle climate change is taken a step further by going beyond carbon reduction from Council operations to wider action within the district of South Kesteven.

From 2020, reports to each of the Council's committees have included a section stating any climate or carbon impact the proposal would have, in order to aid effective decision making. The author of each report must state if the proposal is expected to have a positive, neutral or negative impact on carbon emissions and note any other sustainability issues that should be considered. This has allowed for greater transparency when considering major projects with a carbon implication.

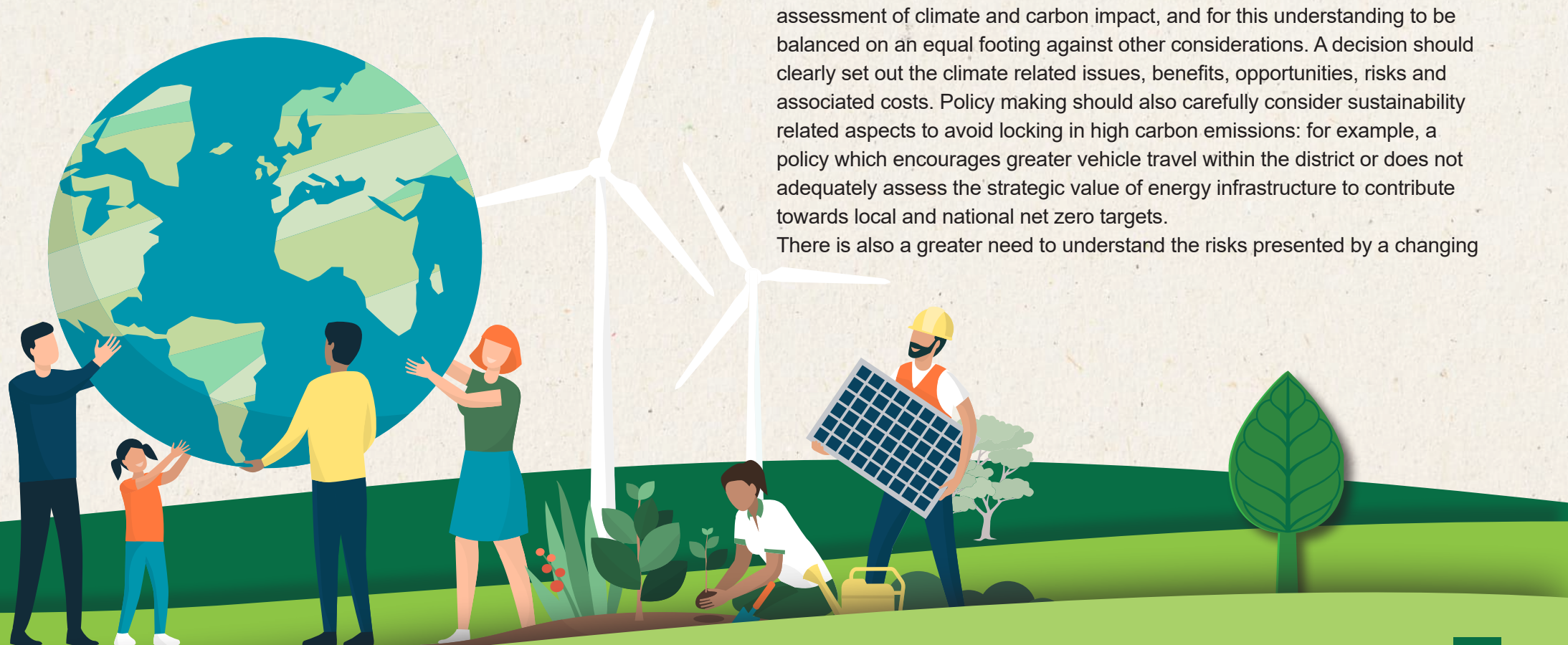
The Monitoring Progress section sets out how and using what data progress on

reducing carbon emissions can be effectively monitored. Since South Kesteven District Council's declaration of climate emergency in September 2019, regular reporting into the Council's Environment Overview and Scrutiny Committee has taken place on the Council's climate change work. This includes an annual report on carbon emissions arising from Council operations, a high level overview of district-wide carbon emissions, and the Climate Matters report detailing key climate projects.

This Climate Action Strategy aims to formally set out ambitions for the wider district regarding climate change. Clearly, detailed on-going monitoring of all available datasets of carbon emissions for South Kesteven will be imperative. This duty will continue to sit at a formal level within the remit of the Environment Overview and Scrutiny Committee.

Nevertheless, given the extensive nature of climate action, different aspects of the Council's approach will be discussed across the committees of the Council. Where major decisions are being discussed, there is a need for a detailed assessment of climate and carbon impact, and for this understanding to be balanced on an equal footing against other considerations. A decision should clearly set out the climate related issues, benefits, opportunities, risks and associated costs. Policy making should also carefully consider sustainability related aspects to avoid locking in high carbon emissions: for example, a policy which encourages greater vehicle travel within the district or does not adequately assess the strategic value of energy infrastructure to contribute towards local and national net zero targets.

There is also a greater need to understand the risks presented by a changing



climate across the Council. The impact of heatwaves and drought, as well as the increased likelihood of extreme and destructive weather can and will affect the ability to effectively deliver key services. By reviewing and mapping out each of these expected impacts brought about by weather, it will be possible to put in place mitigations and plan for worst case scenarios effectively.

Climate change and carbon reduction issues can be complex and technical. In order to ensure decision makers and representatives of the Council are adequately equipped, additional training for Councillors and officers will be required to ensure the principles of the Climate Action Strategy are embedded across all spheres of action. Linking to the Triple Planetary Crisis, it is necessary to understand the links between the enormous challenges of pollution, biodiversity loss and climate change.

It is also fundamental to consider how the Council will be able to raise capital to fund a number of projects identified through the next stage Climate Action Plan. Over recent years, the Council has been affected by a reduction in

government grants and a loss of specialist staff. The policy landscape and expectations for local authorities to deliver place-based climate action have been turbulent, which has led to intermittent delivery of projects.

Sources of external funding, including grants and loans, for decarbonisation and adaptation projects have become available, and it is essential that the Council continues to secure these. The ability to work across administrative boundaries and collaborate with both district and county councils will unlock greater efficiencies and share knowledge and resources.

The ability of the Council to raise finance for projects outside of grant funding streams will be carefully reviewed through the process of developing the Climate Action Plan for South Kesteven.

Current activities from South Kesteven

- **Climate change and carbon assessment included in committee reports**
 - o From 2020, reports considered at South Kesteven District Council committees have included a section stating any climate or carbon impact the proposal would have, in order to aid effective decision making. This allows for evidence based decision making when considering major projects or policies with a climate or carbon implication.





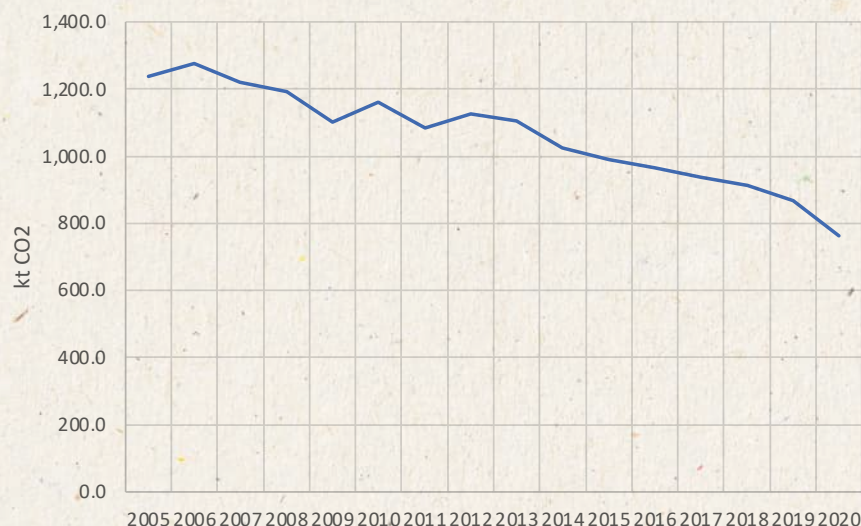
Monitoring progress

This section considers an overview of greenhouse gas emissions arising from the district of South Kesteven. A fuller context of carbon emissions data is given at Appendix B.

South Kesteven local authority area emissions

Overall, carbon emissions arising from the district of South Kesteven are on a downward trend, principally through the contribution of renewables to the national supply of electricity.

FIGURE 2: CHANGES IN TOTAL CARBON EMISSIONS WITHIN SOUTH KESTEVEN FROM 2005 TO 2020



Carbon emissions from South Kesteven reduced 38% between 2005 and 2020.

The key categories of GHG emissions are included in Figure 3 below. As of 2020, the single largest single category contributing towards the district's carbon emissions is Transport, responsible for 30% of total emissions, principally from the contribution of road transport. Domestic energy use represents the second largest sector at 22%, followed by Agriculture at 16%. Industrial and Commercial energy use account for 17% together.

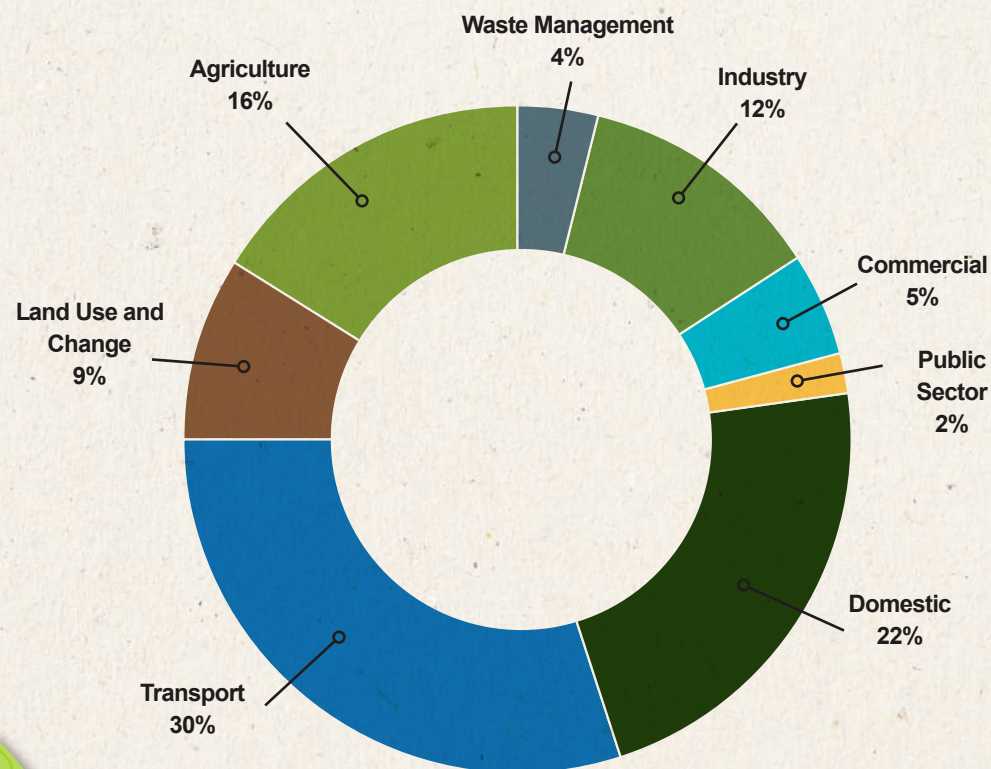


FIGURE 3: KEY CATEGORIES OF GHG EMISSIONS FOR SOUTH KESTEVEN (2020 DATASET)

Per capita carbon emissions

Insight is also available for carbon emissions within a district on a per capita basis. As of 2020, carbon emitted in South Kesteven was 739.4.1 kt CO₂e. This equates to 5.3 tonnes per capita, above the average for Lincolnshire (all districts) at 5.2 tonnes, equal to the East Midlands at 5.3 tonnes and above the average for England, which produced 4.3 tonnes per capita.

9.7

Per capita carbon emissions
from South Kesteven
2005

5.3

Per capita carbon emissions
from South Kesteven
2020

Carbon budgets

While carbon emissions continue to reduce in South Kesteven, in order to achieve the UK's target emissions reductions further and faster action is needed. Figure 4 below uses data from SCATTER, a local authority focused carbon emissions tool, to model both a Business as Usual pathway to decarbonisation, as well as a High Ambition pathway which assumes the district goes significantly beyond current national policy⁴⁴. The graph also includes a pathway based on recommendations for the district from the Tyndall Centre for Climate Change.

⁴⁴ SCATTER (scattercities.com)

⁴⁵ Local and Regional Implications of the United Nations Paris Agreement on Climate Change (manchester.ac.uk)

The Tyndall Centre recommendations are based on territorial carbon budgets on an international, national, regional and local scale and their projections are used by local authorities across the UK. Their research found that for South Kesteven to abide by the carbon budget periods of the Climate Change Act and to make our fair contribution towards the Paris Climate Change Agreement, the district must stay within a carbon dioxide emissions budget of 5.3 million tonnes (MtCO₂) for the period of 2020 to 2100. Without action the budget would be used up by 2026. To stay within budget South Kesteven should aim for cuts in emissions of at least 13.7% per year⁴⁵.

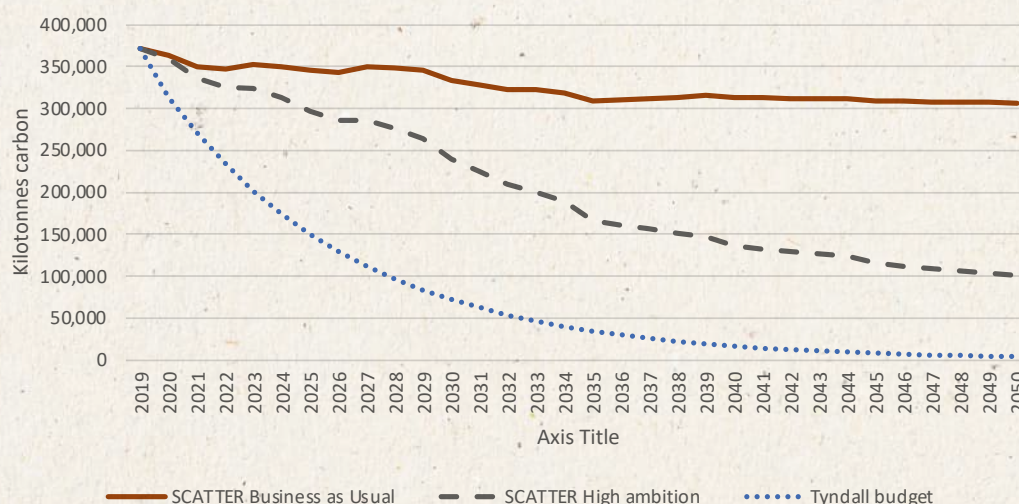


FIGURE 4: CARBON BUDGET PROJECTIONS FOR SOUTH KESTEVEN, BASED ON SCATTER AND TYNDALL BUDGET RECOMMENDATIONS.



Consumption emissions

While the dataset explored above in Monitoring Progress sets out greenhouse gas emissions associated with production of a good or service within the district, it is also important to consider the role of consumption based emissions. Unlike territorial carbon emissions, which emanate exclusively from within the UK, consumption emissions reflect the UK's consumption of all manufactured goods such as food, clothing and household appliances, and services provided from outside the country. The key categories of consumption emissions are included in the diagram on page 53⁴⁶.

The consumption emissions dataset refers to emissions that are associated with the consumption spending of UK residents on goods and services, wherever in the world these emissions arise along the supply chain, and include the territorial emissions discussed above including energy use and transportation. In 2019, the consumption emissions reported for the UK were 41% higher than territorial emissions alone. Additionally, the consumption emissions dataset has a different reporting cycle to the annual data release of territorial emissions and is not available by local authority area. For our purposes, the data here is used for reference and is not intended to become part of regular reporting.

On average, these consumption emissions mean that each person in the UK emits around 5 tonnes of greenhouse gas emissions each year. It is important to consider ways in which consumption can be influenced, as so to reduce the emissions of production, alongside work to reduce greenhouse gas emissions arising from within the district, in order to reach a state of carbon neutrality.

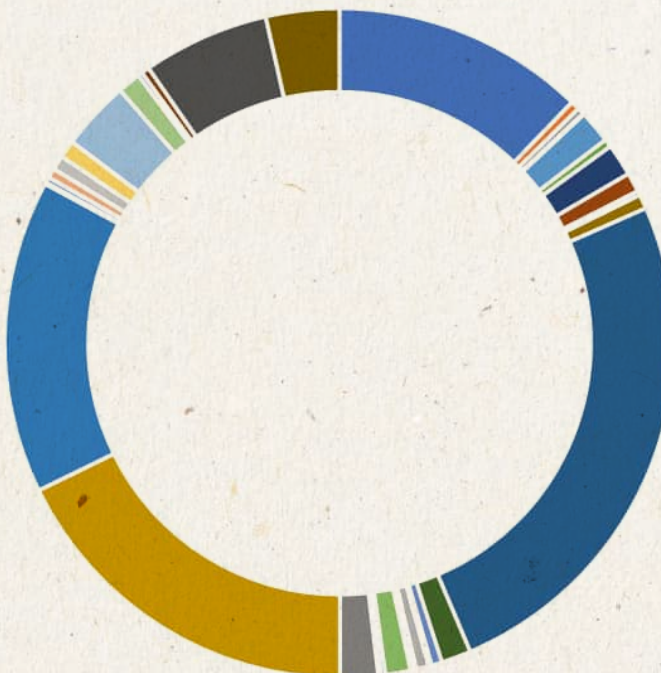
Electricity, gas
and other fuels
25.23%

Clothing
1.59%



Personal
Transport
17.79%

Food
12.2%



Restaurants
and hotels
6.11%



- Food
- Clothing
- Maintenance and repair of the dwelling
- Household textiles
- Goods and services for household maintenance
- Purchase of vehicles
- Telephone and telefax equipment
- Other recreational equipment etc
- Restaurants and hotels
- Non-alcoholic beverages
- Footwear
- Water supply and miscellaneous dwelling services
- Household appliances
- Medical products, appliances and equipment
- Operation of personal transport equipment
- Telephone and telefax services
- Recreational and cultural services
- Miscellaneous goods and services
- Alcoholic beverages
- Actual rentals for households
- Electricity, gas and other fuels
- Glassware, tableware and household utensils
- Out patient services
- Transport services
- Audio-visual, photo and info processing equipment
- Newspapers, books and stationery
- Tobacco
- Imputed rentals for households
- Furniture, furnishings, carpets etc
- Tools and equipment for house and garden
- Hospital services
- Postal services
- Other major durables for recreation and culture
- Education

FIGURE 5: CONSUMPTION BASED CARBON FOOTPRINT FOR THE UK (2019)

46 UK and England's carbon footprint to 2019 - GOV.UK (www.gov.uk)

47 Carbon footprint for the UK and England to 2019 - GOV.UK (www.gov.uk)

Carbon management plan for the council

Following the Council's declaration of climate emergency in 2019, work was undertaken with the Carbon Trust to re-establish the Council's operational carbon emissions. The Carbon Footprint and Reduction Opportunities report was published in 2020, establishing the new baseline for monitoring future years' emissions against of the 2018/19 financial year⁴⁸. The boundary of these operational elements can be seen in Figure 2.

This found that the total annual GHG emissions from the Council were 7,600 tonnes of carbon equivalent.

The four main sources of carbon emissions derive from:

- Energy used in South Kesteven leisure centres
- Fuel used in the Council's fleet of 155 vehicles
- Gas used for heating and hot water in Council buildings
- Electricity used to power Council buildings

The report also plots a path of recommended carbon reduction actions, principally addressing these four main areas, in order to meet or exceed the Council's interim carbon emissions target of at least 30% by 2030. Our definition of net zero is set out at Appendix B for clarity.

South Kesteven District Council is making good progress towards that goal. In the last reporting year of 2021/22, an overall emissions of 6,518 were reported, equivalent to a 14.23% reduction on the baseline year. Further projects will need to be developed, for buildings and for the Council's vehicles, up to 2030 in order to meet the reduction target.

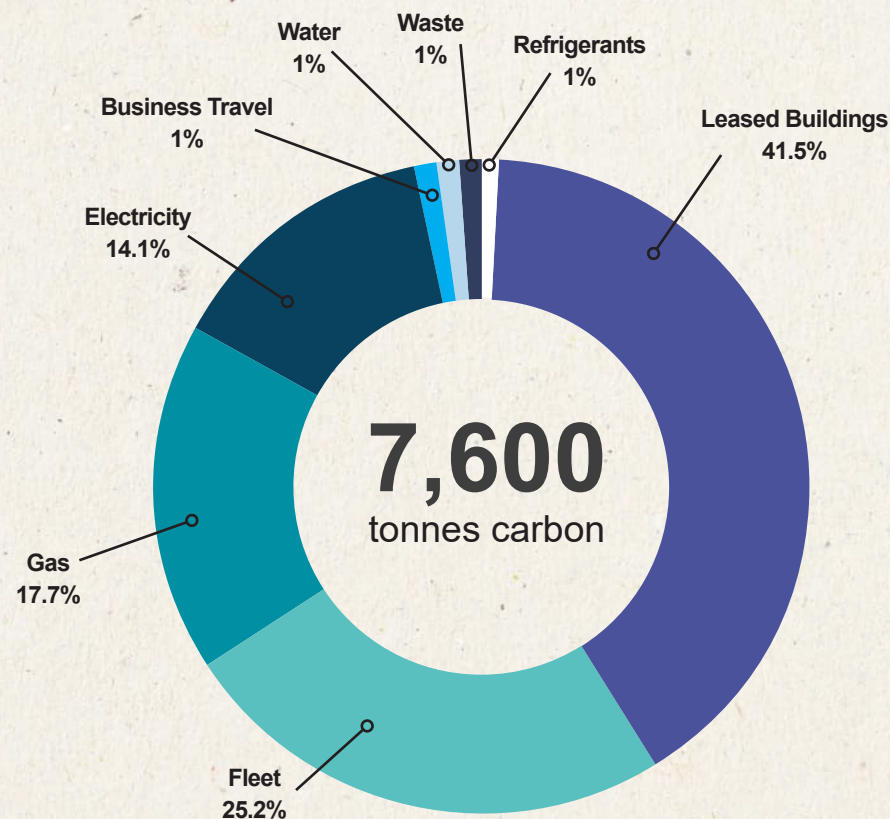


FIGURE 6: MAIN SOURCES OF CARBON EMISSIONS FROM SOUTH KESTEVEN DISTRICT COUNCIL

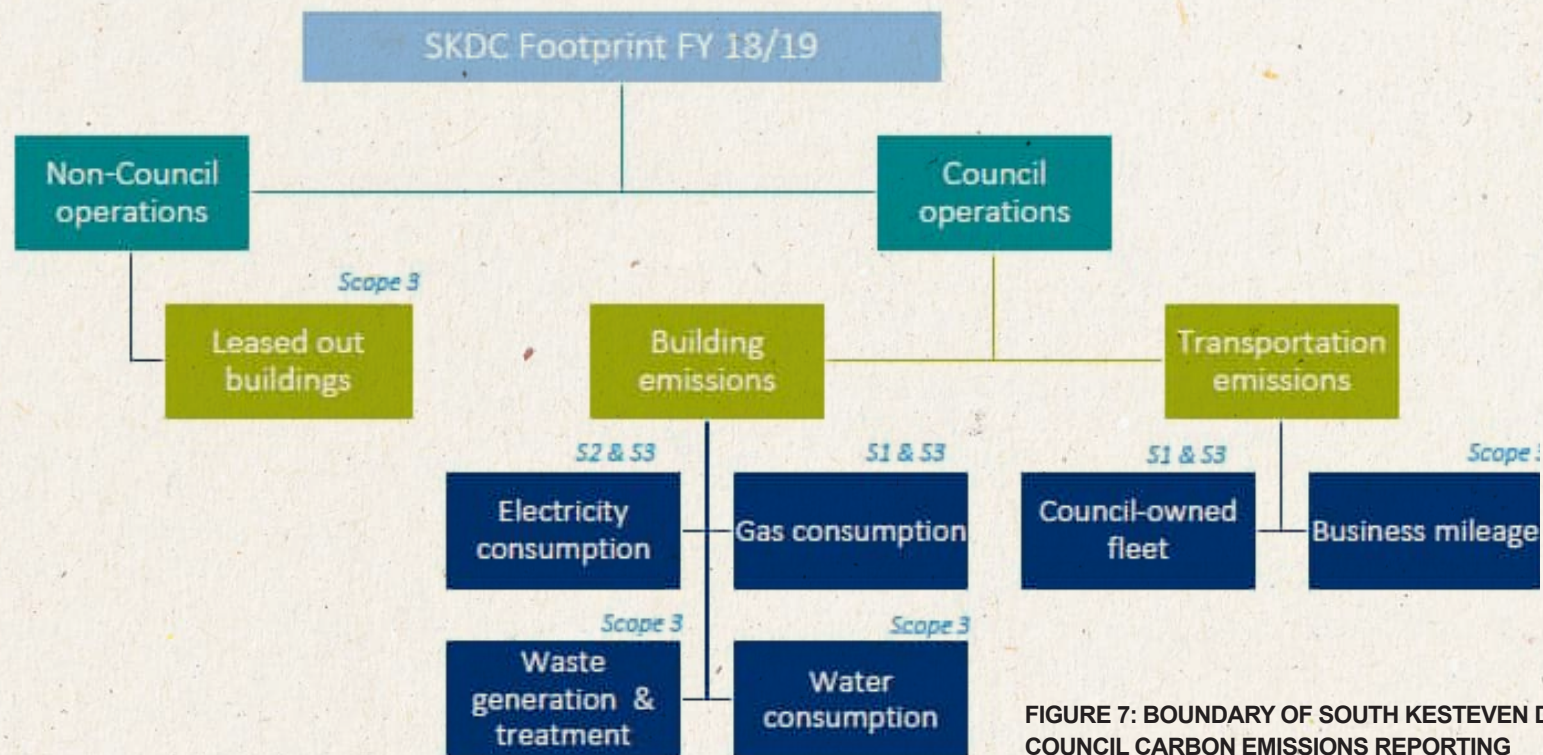


FIGURE 7: BOUNDARY OF SOUTH KESTIVEN DISTRICT COUNCIL CARBON EMISSIONS REPORTING



Carbon management hierarchy

In order to effectively reduce carbon emissions, there should be a well understood hierarchical approach to their management which looks to eliminate them as far as possible, followed by a decrease through reduction. Substituting through implementing low carbon alternatives, including renewable energy, is the next recommended step. Compensation measures including carbon offsetting are the final step once other measures have been exhausted. These principles are best outlined in the IEMA Greenhouse Gas Management Hierarchy⁴⁹.

Eliminate

- Influence business decisions / use to prevent GHG emissions across the lifecycle
- Potential exists when organisations change, expand, rationalise or move business
- Transition to new business model, alternative operation or new product/service

Reduce

- Real and relative (per unit) reductions in carbon and energy
- Efficiency in operations, processes, fleet and energy management
- Optimise approaches (e.g. technology and digital as enablers)

Substitute

- Adopt renewables/low carbon technologies (on site, transport etc.)
- Reduce carbon intensity of energy use and of energy purchased
- Purchase inputs and services with lower embodied/embedded emissions

Compensate

- Compensate 'unavoidable' residual emissions (removals, offsets etc.)
- Investigate land management, value chain, asset sharing, carbon credits
- Support climate action and developing carbon markets

49 GHG Management Hierarchy updated for net-zero - IEMA



Our influence

The Climate Action Strategy formally sets out ambitions for the wider district regarding climate change. It is therefore essential to consider the role that South Kesteven District Council can and will have to unlock that ambition.

Our carbon management plan covers all assets where we as a Council have direct control of assets or services and are able to swiftly implement changes to deliver a reduction in carbon emissions. This includes energy used in buildings owned and occupied by the Council, vehicles operated to conduct Council services such as waste collection, and other aspects such as staff and councillor business travel. Our carbon footprint also includes leisure centres operating within South Kesteven, reflecting our influence and ownership.

There are assets which are owned by South Kesteven District Council but not included within our carbon management plan. These principally include tenanted council properties. We are able to unlock significant carbon reductions for these properties through delivering upgrades to reduce energy use and move towards cleaner energy sources.

There are services provided by the Council within the district which are also able to deliver on our ambitions to reduce carbon emissions and help to adapt to a changing climate. Some of these services are considered statutory obligations that a Council is duty bound to deliver (for example, waste collection), and there are also areas where services are provided on

a discretionary basis (for example, delivery of energy efficiency upgrades). Our role as Local Planning Authority has a clear role to determine that developments which come forward seek to reduce carbon emissions as well as being prepared for the impacts of climate change.

The Council also has the ability to indirectly influence activity within the district. This can be through ongoing communications with residents, businesses and other partners, convening key stakeholders or lobbying for further support, funding or powers to act.

The vast majority of carbon emissions arising from South Kesteven are found outside of the Council's direct control: less than 1% of the district's total emissions can be attributed to Council operations. Nevertheless, the Council has a distinct leadership role to shape and drive change in order to collectively work towards the goal of net zero. It is important to maximise our indirect influence to support the transition towards a low carbon economy and to identify further areas, streams of work and sources of funding in order to provide a direct influence for carbon reduction.



Working together

To maximise our ability to shape and deliver net zero for South Kesteven, we must work closely with partner organisations across a breadth of different areas. Our eight themes set out the extent of this challenge.

Our framework for delivery is in three key strands: Low carbon Council, Low carbon Communities and Low carbon Business. This reflects our ability to control and to influence change, as well as our need to work with others to deliver that change.

There is a clear consensus across Lincolnshire that authorities must act to address climate change. Development of our following Climate Action Plan will outline our current and expected partners across areas of activity. Work with Lincolnshire County Council and Lincolnshire district councils will allow us to combine efforts and accelerate the pace of change. A Lincolnshire Sustainability Officers Group has already been established to facilitate partnership working on net zero and will provide a forum for joint projects and greater collaboration.



FIGURE 9: LOCAL AUTHORITIES POTENTIAL TO CONTROL AND INFLUENCE EMISSIONS, ADAPTED FROM CENTRE FOR SUSTAINABLE ENERGY⁵⁰.



	Focus	Example
Low carbon council	Own activity and emissions	■ Carbon reduction project delivery
Low carbon communities	Council delivered services within the district Duties as Planning Authority	■ Statutory and discretionary services delivered in the district
Low carbon district	Leadership and lobbying	■ Partnership working across Lincolnshire



The case for action

Public concern about the disruptive impacts of climate change is at a high. Around three in four adults polled in October 2022 reported feeling somewhat or very worried about climate change⁵¹.

Concern about climate change has remained largely stable over the last few years, ranking among public concerns around covid-19 and the cost of living crisis.

Rising temperatures within the UK was the biggest impact of climate change that people expect to experience, with 75% of adults polled by ONS expecting to experience the impact of higher temperatures before 2030⁵².

Awareness of climate change and the concept of net zero is also widespread. In late 2020, 90% of respondents reported awareness of the UK government's targets to reach net zero by 2050.

Public awareness of the linkages between established issues of climate change, economic growth and health and wellbeing has also been

⁵⁰ Climate Emergency Action Planning Tool for local government | Centre for Sustainable Energy (cse.org.uk)

⁵¹ Worries about climate change, Great Britain - Office for National Statistics (ons.gov.uk)

⁵² Worries about climate change, Great Britain - Office for National Statistics (ons.gov.uk)



established. People recognise that responses to climate change issues do not necessarily require trade-offs, for example that improved green space helps to adapt towns and cities to increased summer temperatures, while providing improvements to air quality and wellbeing. These Co-benefits to tackling climate change are fundamental to successful action and embedded in our approach.

There is a clear role for local government to shape, drive, and deliver local action on climate change. Polling commissioned on behalf of UK100 found that the public believe local authorities are well placed to act on climate and sustainability: 40% agreed local authorities were best placed to take action, compared to 30% believing central government was best placed, and 19% stating a belief that individuals are preferred⁵³.

In terms of translating concern about climate change into action, many people recognise the need to take personal action on climate change. Polling by the Department for Energy Security and Net Zero on public behaviours to tackle climate change found almost all people (98%) regularly engaged in at least one behaviour to reduce carbon emissions, such as minimising waste, saving energy or changing behaviours around transport⁵⁴. Nevertheless, there is a need to ensure that the impacts of public action are directed towards those activities that are most impactful and relate to the carbon hierarchy of avoid, decrease, replace, offset.

Individual action can also help reduce the cost of delivering net zero. By making more sustainable choices around travel, consumption and energy use, the impact of individual actions across the economy will help to lower the costs of moving to a net zero carbon economy⁵⁵ – as long as these behaviours are supported by the necessary systemic changes.

The opportunities and challenges set out within our eight themes will form the basis of a consultation with the community of South Kesteven to shape and develop our following Climate Action Plan. This next stage of work will embed the priorities identified by residents, businesses and other partners within South Kesteven to shape the speed and range of projects proposed and the role the public can and will have to determine action.



53 The powers local authorities need to deliver on climate | UK100

54 BEIS PAT Autumn 2022 Net Zero and Climate Change (publishing.service.gov.uk)

55 MISSION ZERO - Independent Review of Net Zero (publishing.service.gov.uk)



Conclusion and next steps

The Climate Action Strategy maps out the main concerns and areas of focus relating to climate change mitigation and adaptation within the district.

The time to act is now. A step-change is needed to accelerate action on climate change, from council operations to work in the wider district. In order to play our part to meet the UK's national net zero target of 2050, rapid carbon reductions need to be locked-in this decade.

South Kesteven cannot act alone. It is important to understand that changes in the climate, felt locally and further afield, need to be tackled in a systemic way and the value of partnership is absolutely vital in order to work towards a net zero economy. There are several existing strong partnerships with and beyond Lincolnshire, but these relationships will need to be taken further in order to accelerate and embed our response to climate change.

We need to act across the board. Carbon emissions do not arise from one source and reducing them has no one solution. We must consider all opportunities for energy reduction, low carbon energy use and generation and valuing our resources better as part of our core approach.

Climate Action Plan

Our Climate Action Plan will be developed throughout 2023, through work with internal colleagues as well as town and parish councils, neighbouring authorities, and wider partners.

Using our structure of eight themes, projects, activity and focus for the future will be mapped out on a short, medium or longer term time frame aligning with South Kesteven District Council's declared target for carbon reduction.



Appendix A: context of climate change

National legislation and policies

In 2019, the UK Government set out a target to achieve net zero greenhouse gas emissions across the whole UK by 2050, amending a previous target to reduce carbon emissions from within the UK to 80% to 2050. This commitment is legally enshrined by the Climate Change Act 2008 (2050 Target Amendment) Order 2019⁵⁶.

To ensure sustained progress towards net zero, the government set a series of targets to reduce near and medium-term emissions through legally binding carbon budgets. The fourth, fifth and sixth carbon budgets cover the periods 2023-2027, 2028-2032 and 2033-2037 respectively. In December 2020, the UK committed to an interim target to reduce economy-wide greenhouse gas emissions by at least 68% (compared to 1990 levels) by 2030 as part of the UK's Nationally Determined Contribution towards delivering the goals of the Paris Agreement.

The UK's Net Zero Strategy recognises the essential role that local government must play if national ambitions are to be achieved⁵⁷. The sector's legal powers, assets, access to targeted funding, local knowledge and relationships with stakeholders, enables local authorities to drive action directly and to inspire action by local businesses, communities and civic

society in a way that central government cannot. Government analysis has found that 30% of the emissions reductions required across all sectors to deliver the Carbon Budget 6 target rely on local authority involvement to some degree, while 82% of emissions are within local authorities' scope of influence.

Climate risks and opportunities

As well as the direct impacts of disruptive weather, it is important to thoroughly consider the holistic impacts of climate change and the risks and any opportunities they present. The UK government is required to undertake an assessment every five years to set out these risks and published the latest UK Climate Change Risk Assessment report in 2022.

In total, 61 risks and opportunities were identified for England, including to business, infrastructure, housing, the natural environment, our health, and risks from the impacts of climate change internationally⁵⁸.

Adaptation action has failed to keep pace with the worsening reality of climate risk⁵⁹. Of the identified 61 risks, the report found over half require further action to address them and the gap between the level of risk we face and the level of adaptation underway has already widened.



Some of these main risks for England include:

- The impacts of climate change on the natural environment
- An increase in the range and voracity of pests, pathogens and invasive species
- The risk of damage to vital infrastructure, including energy, transport, water, and ICT
- A reduction in public water supplies and periods of water scarcity
- The impact of extreme weather on the transport network
- The impacts of high temperatures on people's health and wellbeing
- Increased frequency and severity of flooding of homes, communities and businesses
- International impacts that may affect the UK, including supply chain disruption and risks to food availability

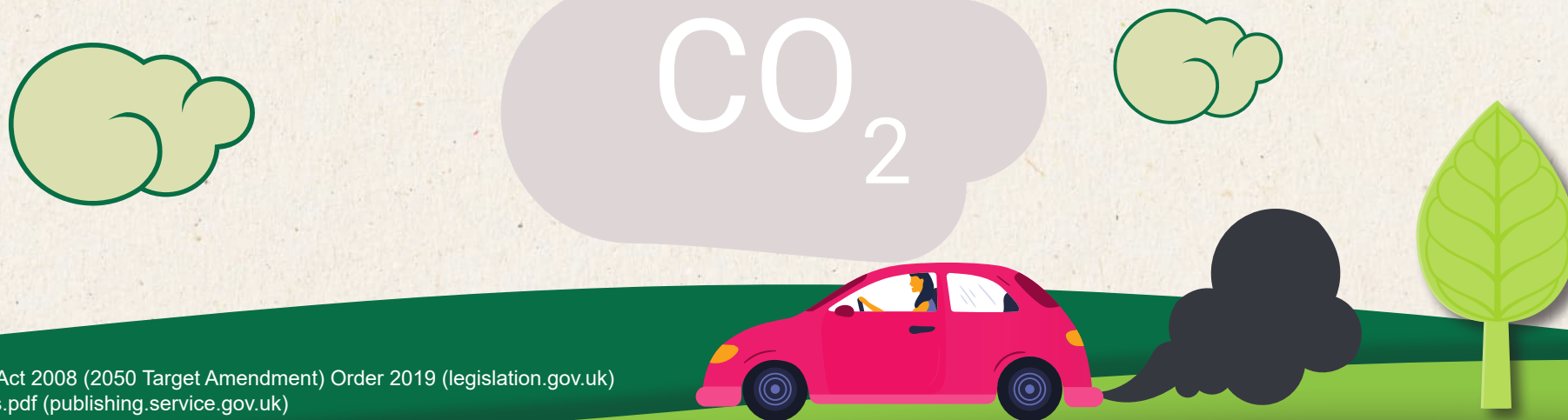
Local government has a clear role to play in both mitigating the effects of and adapting to the impacts of a changing climate. Councils have an interest in each of the 61 risks highlighted in the Climate Change Risk Assessment and are directly impacted by a number of these.

The triple planetary crisis

Climate change is one of the three aspects of the Triple Planetary Crisis. Defined by the United Nations as three main interlinked issues facing humanity of pollution, biodiversity loss and climate change⁶⁰, each of these grand challenges has its own causes, effects, and methods of resolution.

Pollution of the air is now the largest cause of disease and premature death in the world. The World Health Organisation have found that 99% of the world's population breathes air that exceeds WHO guideline limits for level of pollutants⁶¹. The sources of this pollution are widespread, including traffic, industrial emissions, indoor cooking and the presence of mould in homes.

Biodiversity loss refers to the dramatic reduction in the variety and volume of natural life on our planet, including plants, animals and whole ecosystems. Causes of biodiversity loss are structural and include destruction of habitat for land use change, overfishing, and changes to a habitat driven by climate change. A healthy, functioning natural environment underpins all life on earth and impacts our ability to breathe clean air, access fresh water and produce adequate food supplies.



56 The Climate Change Act 2008 (2050 Target Amendment) Order 2019 (legislation.gov.uk)

57 [net-zero-strategy-beis.pdf](https://publishing.service.gov.uk) (publishing.service.gov.uk)

58 [CCRA-Evidence-Report-England-Summary-Final.pdf](https://ukclimaterisk.org) (ukclimaterisk.org)

59 [UK Climate Change Risk Assessment 2022](https://publishing.service.gov.uk) (publishing.service.gov.uk)

Appendix B: data on greenhouse gas emissions and monitoring

Detail on Greenhouse gas emissions data by local authority

Global climate change is being driven largely by emissions of carbon dioxide (CO₂), however emissions of other gases, such as methane (CH₄) and nitrous oxide (N₂O) from agriculture, also make significant contributions to warming.

The key indicator of concern is the amount of greenhouse gas (GHG) emissions. The Department for Energy Security and Net Zero (ESNZ) produces annual data showing each local authority area's territorial GHG emissions, expressed in kilotons (kt) of carbon. This dataset is available at a local authority level, allowing for an understanding of CO₂ emissions which arise from within the administrative boundary of the area. These can be considered territorial carbon emissions, as opposed to consumption carbon emissions which are explored in further detail in the section below.

Historically this dataset would only detail CO₂ emissions. From the 2022 release onwards, the dataset now presents the combined emissions of all the GHGs under the Kyoto Protocol: carbon dioxide, methane, nitrous oxide, hydro-fluorocarbons, perfluorocarbons, nitrogen trifluoride and sulphur

hexafluoride⁶². This dataset is produced two years in arrears, meaning that any CO₂ reduction achieved in 2018 will be published in the dataset in 2020.

The integration of these GHGs into the dataset is welcome and does give a more informed picture of emissions at a local level, including aspects such as agriculture and land use. Nevertheless, the change in methodology makes direct comparison of local authority area's GHG emissions with previous years more problematic. Data for total GHGs emissions is only available from 2018 onwards, whilst CO₂ only emissions date back to 2005.

Net zero defined

A number of different terms are used in reference to efforts to reduce carbon emissions sufficiently to avoid the worst impacts of a changing climate. However, it is fundamental to distinguish between the number of terms used to define decarbonisation efforts, in order to understand the differences between them.

South Kesteven District Council has set a target to reduce carbon emissions from our own operations by at least 30% by 2030 and to net zero as soon as viable before 2050, against our baseline year of 2018/19. Achieving net-zero emissions means to pursue an ambitious science-based target, aligned to keep global heating below 1.5°C, across the whole value chain. Where residual carbon emissions remain which cannot be further reduced by operational changes, certified Greenhouse Gas (GHG) removal mechanisms can be employed such as tree planting through a registered scheme or carbon capture technology.

60 What is the Triple Planetary Crisis? | UNFCCC

61 Air pollution (who.int)

Scope of carbon emissions	Emission type	Definition	Examples
Scope 1	Direct emissions	Emissions of carbon directly into the atmosphere, arising from sources directly owned, managed, or controlled by the reporting body	Natural gas, vehicle fleet operation, refrigerants
Scope 2	Indirect emissions	Indirect emissions of carbon associated with the generation of purchased energy, used by the reporting body	Electricity, purchased heat
Scope 3	All other emissions	Upstream and downstream emissions of carbon arising from the value chain of the reporting body	Business travel, waste, water, procured goods and services, operation of leased assets



Contact Details

Alternative formats are available on request:
audio, large print and Braille

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