

Leicester Climate Emergency Strategy

April 2020 – March 2023



**Towards a carbon-neutral and
climate-adapted city**



Foreword

We are proud to present Leicester City Council's strategy and action plan for tackling the Climate Emergency. This strategy builds upon a strong legacy of local action on climate change and confirms our commitment to taking the urgent action needed to create a low-carbon, fair and resilient city.

We are publishing this strategy at a time when the science on global heating and climate change has never been clearer and the need to take action has never been more vital. Failure to reduce worldwide carbon emissions and limit global heating to below 1.5°C risks catastrophic impacts from extreme weather and sea level rises, damage to habitats and biodiversity and threats to human populations across the globe.

The scale of this challenge has also been highlighted by the impact of COVID-19, which has shown how vulnerable society can be. Indeed, there is also evidence that the pandemic has been able to take hold at least in part because of the damage done to our environment.

Whilst Leicester has a strong track record on taking action to reduce our environmental impact, we now know that more needs to be done. This strategy sets out the many challenges we face as a council and a city, and our vision for the changes we can make together to overcome them.

The challenges we face include reducing carbon emissions from our homes and businesses, promoting healthy and sustainable transport, protecting and enhancing green spaces and making changes to what we buy and dispose of. These are challenges that the council cannot face alone, and will need support and involvement of people, communities and businesses across the city – as well as a step-change in action by central Government.

We are also determined to use the opportunities these changes give us to confront the other major issues Leicester faces. In particular we are committed to tackling poverty and developing the local economy, to make Leicester a place which provides all of its people with the opportunities they deserve.

We'd like to finish by encouraging you to read the strategy and the actions we are planning to take over the next three years and think about how you could play your part. This could be at work or at school, in your home or through your communities.

We believe that together we can make Leicester a low carbon, resilient and fair city, which can act as an example to others across the country and the world.

Leicester City Mayor, Sir Peter Soulsby

Deputy City Mayor Environment and Transportation, Cllr Adam Clarke

Our Thanks

The development of this strategy and the accompanying action plan have been supported and shaped through a huge number of conversations and discussions under the umbrella of Leicester's Climate Emergency Conversation. These have involved individual residents, community groups, businesses, academic experts, public sector partners and more. Their contributions have been invaluable, and we'd like to thank everyone who has helped.

We would like to acknowledge the following contributions:

Leicester's External Expert Commission – academic experts and sustainability professionals from De Montfort University, the University of Leicester and Leicestershire County Council who reviewed drafts of the strategy and action plan, and whose constructive critique helped us improve our plans and how we communicate them.

Leicester's Climate Assembly – the 53 residents from across the city who spent a day deliberating over the challenges and how to tackle them, as well as the Royal Society of Arts, which with facilitators from Talkshop –helped us to plan and run the event.

Young People's Climate Assembly – the 104 young people, representing the following schools, who spent a day discussing the Climate Emergency at City Hall:

- Al Aqsa School
- City of Leicester College
- Fullhurst Community College
- Judgemeanow Community College
- Madani Girls School
- Madani Boys School
- Millgate School
- Moat Community College
- New College
- Rushey Mead Academy
- Sir Jonathan North College
- Soar Valley College

Our thanks also to the speakers and facilitators from Ashden, Black Environment Network, Sustrans, De Montfort University and Leicester Young People's Council.

Citizen Space – the 374 respondents to our questionnaire survey, including 349 individuals as well as organisations and businesses.

Group Conversations – members of the following groups who fed into responses via our Group Conversation Packs:

- Belgrave Neighbours
- Community of Grace
- Countesthorpe Environment Group
- De Montfort University – staff and students
- GraceWorks

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- Leicester City of Sanctuary
- Near Neighbours
- St Denys Church
- South Highfields Neighbours
- University of Leicester – staff and students of the Physics and Astronomy Department
- Western Park community
- Westleigh Road Neighbourhood Group
- Wycliffe United Reformed Church
- Young Employees Network of Leicester City Council

Primary School Conversations – over 200 pupils from the following primary schools who gave us their ideas through the Primary School Conversation Packs:

- Buswells Lodge Primary School
- Christ the King Catholic Voluntary Academy
- Highfields Primary School
- Leicester High School for Girls
- Overdale Junior School
- Rowlatts Mead Primary Academy
- Shaftesbury Junior School
- Whitehall Primary School

Organisations – the following organisations who met individually with us, offering their expertise and support:

- Arriva
- De Montfort University
- ENGIE
- Haymarket Shopping Centre
- Highcross Leicester (Hammerson)
- Leicester and Leicestershire Enterprise Partnership (LEEP)
- Leicester College
- Leicester City Clinical Commissioning Group (CCG)
- Leicester Riders
- Mattioli Woods
- Pick Everard
- University of Leicester
- Leicester Young People's Council

Finally, not to forget the local campaigning groups who have helped raise awareness about the Climate Emergency and constructively laid out the challenge for a bold and ambitious response.

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Executive Summary

Playing our part in tackling the Climate Emergency

Climate change is a critical threat to people in Leicester and across the globe. Scientific evidence is now overwhelming that human activity is causing the world to heat up, and that urgent, far-reaching action is needed to prevent global heating reaching catastrophic levels. Climate change has been described as the “ultimate threat multiplier”, with the potential to make other geopolitical situations a lot worse; risking dangerous increases in social tensions and resultant upheaval¹. For these reasons, Leicester City Council declared a Climate Emergency in February 2019.

We support the commitment made by world leaders in the Paris Agreement, and signed up to by the UK Government, to keep global temperature rise within 2°C and seek to limit it to 1.5°C. The council is committed to playing a leading role in driving the city towards achieving this, as well as adapting to the changes in our climate which are already happening. This Climate Emergency strategy, and the accompanying action plan, provide the first steps towards this ambition.

In Leicester we can be proud of the progress that's been made up to now. City-wide emissions of carbon dioxide (CO₂) – the main greenhouse gas – from our transport, housing and other buildings, have nearly halved since 1990. The council's own emissions have been cut by a similar amount over the last 10 years. While this is not all down to local action, the city has played a leading role in facing up to the threat from climate change. The council set its first carbon reduction targets nearly 15 years ago and is one of only a handful of UK cities to join the international Carbon Disclosure Project – committing to monitoring and publicly reporting our emissions. Leicester City Council was also one of the first UK local authorities to develop a plan for adapting to changes in the climate.

However, the science is now telling us that we all need to go much, much further.

Based on scientific estimates of the reductions in CO₂ emissions needed to achieve the Paris Agreement goal, our ambition is for Leicester to become ‘carbon neutral’ by 2030 or sooner. This means reducing the city's and the council's CO₂ emissions to nearly zero – low enough to be able to ‘offset’ what's left. This is a huge challenge for the city and one which we as the local authority take seriously, although we know that we can't achieve it on our own. It will take a collective effort from individuals, businesses, groups and organisations across the city, backed by a massive ramping up of effort and support from the UK Government.

Building a collective approach

We are committed to providing leadership to galvanise the collective approach that's needed. It will involve working with partners to raise awareness about the Climate Emergency throughout the city, providing clear and straightforward information to people about steps they can take, and

¹ <https://www.unenvironment.org/explore-topics/disasters-conflicts/what-we-do/risk-reduction/climate-change-and-security-risks>

listening to the public and partner organisations to better understand the barriers to change – and their solutions.

We began this process in autumn 2019 by launching Leicester's Climate Emergency Conversation – an innovative series of engagement activities including climate assemblies for schools and for the public.

The Conversation used 'deliberative democracy' principles to engage with a representative cross-section of people about the changes needed to tackle the emergency and their implications. The process generated an overwhelming response and showed that there is strong public support for action – and for the council to lead by example.

We are now inviting all organisations in the city, including businesses, the public sector, educational institutions and community organisations to join us in producing and implementing their own action plans setting out what they will do to help tackle the Climate Emergency. We will establish a partnership forum to promote this collective approach. To encourage as many as possible to join us in making a commitment, we will provide a template and advice for creating an action plan, as well as an online space for all commitments to be publicised.

Working with partners including local universities, and drawing on a range of expertise, we will develop a 'roadmap' setting out the steps on the journey for Leicester to become carbon neutral. In addition to local actions, we will use this roadmap to identify the national-level action and the additional help and resources Leicester is going to need from central government. We will vigorously make the case to government for this essential support, working with partners including other local authorities.

Key areas for action

This Climate Emergency Strategy presents a vision for the changes we believe will be necessary for the city and the council to become carbon neutral and adapt to a changing climate. Leicester's Climate Emergency Conversation confirmed that there is strong public support for making these changes, provided that they are introduced fairly, and that people are helped to make them. The strategy identifies aims and objectives for achieving the vision, with an initial focus on areas where the council can have the most impact. The accompanying Climate Emergency Action Plan reflects these areas, with ambitious programmes set out across six themes. These programmes include:

At home – reducing carbon emissions and energy bills for council tenants by fitting insulation, energy-saving heating and lighting, and solar panels, and by building new A-rated, low-carbon council housing. Also helping people facing fuel poverty through support with insulation and new, more energy-efficient heating – creating 'green jobs' installing these measures in the process.

Travel and transport - delivering an ambitious series of programmes investing in infrastructure, services and promotion for walking and cycling, low-carbon public transport and electric 'ultra-low-emission' vehicles and charging. Also putting the Climate Emergency at the heart of our Transport Recovery Plan for the COVID-19 crisis, alongside safety and social equity, including creating 10 miles of new 'pop-up' cycle routes.

Consumer choices and waste – creating a new Waste Strategy to substantially increase recycling in Leicester and setting up a network of drinking water refill points in the city centre to reduce single-use plastic bottles.

At work – providing grants for small and medium-sized businesses to reduce their carbon emissions and cut their energy costs. Also creating new, low-carbon business units and managed workspaces for start-ups and small companies. Supporting 'green job' creation too, in areas such as housing retrofit and sustainable construction.

Land use, green space and development – adopting a new Local Plan for the city with policies to ensure that new development addresses the Climate Emergency. Also delivering further schemes to reduce flood risk and ensuring that new developments are designed to deal with rainfall runoff sustainably.

The council – creating a 'roadmap' for the council to become carbon neutral, with programmes to decarbonise our buildings and vehicle fleet. For schools, delivering a programme of investment in energy efficiency and renewable energy in the school buildings we are responsible for and offering support to all city schools through our Eco Schools programme, BESS (Built Environment in Schools Service) and other projects.

Looking beyond these specific projects and programmes, we are taking steps to make sure that our response to the Climate Emergency sits at the heart of how we operate as a council, including the development of an Energy Strategy for the council. Staff and councillors are being trained in 'carbon literacy', a Climate Emergency Board of directors has been established to take responsibility for delivery and an External Expert Commission has been convened to provide impartial advice and comment on our approach. Low-carbon standards and guidelines are being developed for key areas of the council's work, including construction projects, and systems are being introduced to monitor the carbon impact of projects and decisions.

We commit to publishing details of our progress and to updating our action plan each year – allowing the public to be the judge of our efforts and achievements.

We are very aware of the enormity of the challenge we all face, and we know that this strategy, and the accompanying action plan, can only provide the first steps on the ambitious journey to a carbon-neutral, climate-adapted city. We also know that it's vital we start taking those first steps urgently, to make rapid and significant carbon savings early on, whilst planning for the next stages of the journey and building support to do even more.

Our Vision

We all need to respond to the Climate Emergency. In Leicester we believe that our city needs to become carbon neutral, and to adapt to protect its citizens and the natural world as the climate changes.

This is our vision for the city:

At home²

- Highly insulated housing with low-carbon heating systems. All homes affordable to heat.
- Efficient heating, lighting, appliances and fittings, plus smart controls – saving energy and water.
- Solar panels providing zero-carbon electricity.
- Homes protected from overheating during heatwaves – including summer shading.

Travel and transport

- Less traffic, and less need to own a car – great alternatives available.
- Good online services mean fewer journeys. Good local facilities mean shorter trips.
- More walking and cycling – safe and convenient with a great network of routes, plenty of bike parking and an e-bike hire service.
- Much more bus and train use – affordable, reliable and convenient, with bus routes throughout the city.
- Petrol and diesel replaced with cleaner, low carbon and carbon-neutral alternatives – electric, and perhaps hydrogen. Charge points where people need them.

Consumer choices and waste

- Young people leaving school with knowledge of climate change and what they can do to help.
- Everyone well-informed about climate-friendly options for food, consumer goods and travel.
- Climate-friendly foods affordable and widely available. Much bigger role for plant-based ingredients.
- More items repaired or passed on. Long-lasting, low-packaged products favoured over disposable ones.
- High levels of recycling and composting – excellent, well-promoted services for all the main materials.

² Under this theme we address existing homes. New housebuilding is covered under Land Use, Green Space and Development

At work

- New 'green jobs' created to help the transition to a carbon neutral city.
- Leicester's businesses 'ahead of the curve' – offering carbon-neutral services and producing durable, repairable, recyclable products made with sustainable materials.
- Energy efficient, carbon-neutral premises and production processes.
- Businesses generating their own renewable energy – and making use of any waste heat.
- Minimal waste created. Carefully segregated to sell on for recycling or reuse.
- Electric or hydrogen business fleets.
- Online meetings to cut travel.
- Employment sites well served for transport – many staff arrive by bus or train, by bike or on foot.

Land use, green space and development

- Leicester reaches a position where its development and new buildings no longer add to carbon emissions.
- Development is designed for walking, cycling and bus services. Electric charge points are provided too.
- New buildings are designed for a changing climate – to keep cool in heatwaves and use less water.
- Tree cover and biodiversity increases, with new trees and green spaces being part and parcel of development. Careful management keeps the tree stock healthy and addresses the threat of disease.
- Sustainable drainage to slow down and store rainwater, so development doesn't add to flood risk.

Introduction

Scientists agree that the climate is changing as a result of human activity. Global average temperatures have increased by 1°C from pre-industrial levels and sea levels are rising. If humanity doesn't act decisively now, climate change will threaten the lives of many millions of people as well as much of the world's wildlife. We are already seeing the beginnings of this today in the devastating impacts of floods, hurricanes, droughts and wildfires around the world, along with the many new reports of species on the brink of extinction. This is why Leicester City Council declared a Climate Emergency in February 2019.

Leicester will be affected by climate change, like everywhere else. Hotter summers are expected to become more common, with the Met Office predicting a 50 per cent chance of temperatures similar to the 2018 heatwave by mid-century. This presents a threat to the health of many in our society and risks widening the 'equality gap'.

Summers are expected to become drier and winters wetter on average, but with increasing variability. This means that Leicester will not only need to deal with more frequent intense rainfall, but also prolonged dry periods. More homes and employment sites could be put at risk of flooding, with added pressure on the city's drainage infrastructure and rivers. At the same time water will need to be conserved.

Global climate impacts will also affect the city. For example, changes in weather patterns will affect the productivity and even viability of farmland in some areas of the world, threatening food production. The exact impact of global changes like these on Leicester are not yet known, but what we can say is that the city's future is bound up with that of the rest of the world in almost every aspect of life. Through the imported food and goods we rely on, family links between continents, and in countless other ways, local interests and global interests are the same. We are all in this together.

Purpose and scope of this strategy

The purpose of this strategy is:

- To present a positive vision, based on what the public have told us, for Leicester to thrive as a carbon-neutral, climate-adapted city
- To identify how quickly the science suggests we need to make this change, and to set out our ambition for achieving it
- Taking account of the views of the public from our Climate Emergency Conversation, and advice received from the External Expert Commission, to review the key opportunities open to us, as well as the barriers and constraints facing us
- Based on the above, to present an ambitious and comprehensive set of aims and objectives on which we will base our action plan.

The strategy looks at how to reduce Leicester's city-wide carbon emissions and how to adapt to the expected impacts of climate change. It considers all the city's carbon emissions, not just the council's – those generated directly in the city and those created outside Leicester and which the

city is, in part, responsible for. This includes emissions from generating the electricity households and organisations use, from producing the goods and services everyone buys and from dealing with waste generated in the city.

The strategy focuses principally on what the council can do about city-wide emissions and its own emissions, based on its main areas of responsibility. However, this includes opportunities for us to promote action by others – both in central government and locally in Leicester – which we know will be necessary to achieve our ambitions. It covers the three years from April 2020 until March 2023 and is accompanied by an action plan that will be updated annually over the three-year period.

The strategy forms part of a wider approach by the council to work towards a sustainable Leicester, addressing the key social, environmental and economic challenges in an integrated way. References are made to other relevant council documents, and the roles of some of the key documents are outlined below.

Other Relevant Strategies and Plans
<p>Anti-Poverty Strategy and Action Plan</p> <p>Aims to address barriers caused by poverty, which prevent people from leading happy, healthy and purposefully engaged lives. Aligns and links with the council's Climate Emergency Strategy and its Climate Emergency Action Plan in areas including fuel poverty and transport, to ensure that Leicester achieves a socially just transition to a carbon-neutral city.</p> <p>To be published in 2020 on the council website.</p>
<p>Healthier Air for Leicester: Leicester's Air Quality Action Plan 2015-2026</p> <p>Sets out a programme of actions to reduce air pollution emissions – primarily from traffic. Contributes to reducing carbon emissions from traffic too, through measures to reduce traffic levels, encourage walking and cycling and promote the introduction and increase of ultra-low-emissions vehicles.</p> <p>Available on the council website at https://www.leicester.gov.uk/media/180653/air-quality-action-plan.pdf</p>
<p>Leicester's Biodiversity Action Plan 2011-2021</p> <p>Summarises what is known about the most important areas of green space for wildlife and how they provide habitats to help with their conservation in Leicester. Sets out how we will manage, promote and extend the city's natural habitats and ecological networks with our partners. Both the current and new BAP (currently being developed) contribute to sustaining and enhancing Leicester's biodiversity in the face of challenges, including the threat posed by climate change.</p> <p>Available on the council website at https://www.leicester.gov.uk/media/180024/biodiversity-action-plan-bap-2011-2021.pdf</p>
<p>Leicester Green Infrastructure Strategy 2015-2025</p> <p>Sets out the strategic vision for our green sites in Leicester and the ways in which they can be created, managed and maintained to provide maximum benefits to the people who live, work or visit Leicester. The strategy forms part of our approach to addressing climate change as green infrastructure can help make the city more resilient to climate change – for example by reducing flood risk and moderating the 'urban heat island effect'.</p>

Available on the council website at https://www.leicester.gov.uk/your-council/policies-plans-and-strategies/environment-and-sustainability/green-infrastructure-strategy/
Leicester's Food Plan <p>Aims to make Leicester a healthy and sustainable food city, where the production, distribution, purchase and use of food supports better health, stronger communities and a successful economy – while protecting the environment and conserving natural resources. Aligns with, and helps to implement, the Climate Emergency Strategy through actions to reduce food waste and the ecological footprint of the food system – including its carbon emissions.</p> <p>Updated plan for 2020-2025 to be published in 2020 on the council website.</p>
Leicester Tree Strategy 2018-2023 <p>Guides the council in sustaining and increasing our tree stock as well as helping us to improve the quality of the city's trees. The Climate Emergency Strategy identifies the important role of trees in making the city resilient to a changing climate and in retaining carbon stored in trees and soils. The Tree Strategy provides the approach to realising these benefits in our management of trees.</p> <p>Available on the council website at https://www.leicester.gov.uk/media/185470/trees-strategy-2018-23-v2.pdf</p>
Local Transport Plan <p>The Local Transport Plan sets out a vision and objectives for improving transport in Leicester to provide access and connectivity for people and businesses. It aligns with the Climate Emergency Strategy by seeking to do this in ways which reduce carbon emissions from transport.</p> <p>The third Local Transport Plan is available on the council website at https://www.leicester.gov.uk/your-council/policies-plans-and-strategies/transport-and-streets/</p> <p>The fourth LTP is currently being prepared. It will inform a consultation into the potential introduction of a Workplace Parking Levy to help us tackle traffic congestion and provide attractive sustainable transport choices which improve air quality and reduce carbon emissions.</p>
Current and emerging Local Plan <p>The Local Plan is a plan for the future land use and development of an area, produced by the local planning authority, in consultation with the community. It includes policies to address climate change and guides decisions on planning applications to help determine whether new development in the city is acceptable. The current Local Plan consists of the Core Strategy (2014) and saved policies from the saved Local Plan (2006). The Council is also preparing a new Local Plan for consultation which will replace these documents. The Local Plan is a means by which the council can begin to implement its Climate Emergency Strategy when it comes to managing new development and making decisions about land uses. Information about the existing and emerging Local Plan, alongside supporting documents, can be found on the council's website. Refer to the Planning and Development pages. The government has recently consulted on wholesale changes to the planning system in England through the 'Planning for the Future' White Paper (https://www.gov.uk/government/consultations/planning-for-the-future).</p> <p>This will have substantial implications for the council's local planning work, and the changing policy context will be monitored and kept under close review.</p>
Leicester Street Design Guide <p>This innovative document provides guidance for the council's urban designers, and for developers, on how any changes to city streets must prioritise people-friendly design which encourages walking, cycling and the use of public transport. The document introduces 'healthy</p>

streets' principles to the city, which include the benefits of shade and shelter to protect people from adverse weather conditions whilst traveling sustainably. The document applies to existing streets and those created or modified through new development.

(<https://www.leicester.gov.uk/media/186708/leicester-street-design-guide-first-edition.pdf>).

Local Flood Risk Management Strategy

We are a lead local flood authority and are responsible for producing, maintaining, applying and monitoring a local flood risk management strategy. This forms the framework we use to engage local communities in developing local flood risk management decisions, and explains how we support them to become better informed about flood risk issues. As climate change leads to more frequent intense rainfall, addressing flood risk forms a key element of our work to make Leicester a climate-adapted city.

The local flood risk management strategy is available on the council website at:

<https://www.leicester.gov.uk/your-environment/flooding-and-severe-weather/local-flood-risk-management-strategy/>

Smart Leicester Strategy

The Smart Leicester Strategy will catalyse the city's capabilities and, empowered with smart digital connectivity and accessible data, describe how we will better tackle the climate crisis, deprivation and poverty and together improve the quality of life in Leicester. The Strategy will include a theme around smart buildings and city infrastructure, which promotes the transition to sustainable buildings and transport, powered by clean, low-carbon energy.

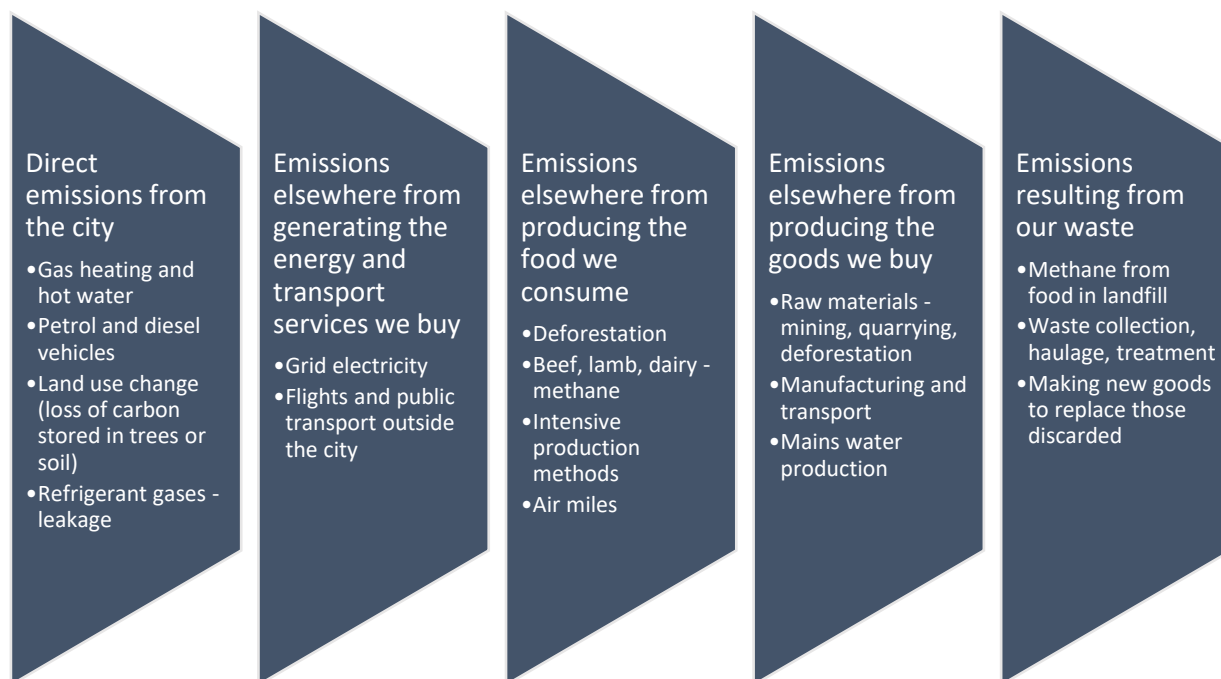
To be published summer 2020.

Leicester's impact on climate change

As growing centres of population, activity and resource consumption, cities are thought to be responsible for around 70 per cent of global carbon dioxide (CO₂) emissions from human activity³. This impact isn't just caused by activities inside the city, but also by the production of the goods and services outside it, which we buy in, and by the disposal of our waste, as outlined in Figure 1.

³ Estimate from C40 Cities.

Figure 1: How cities cause carbon emissions

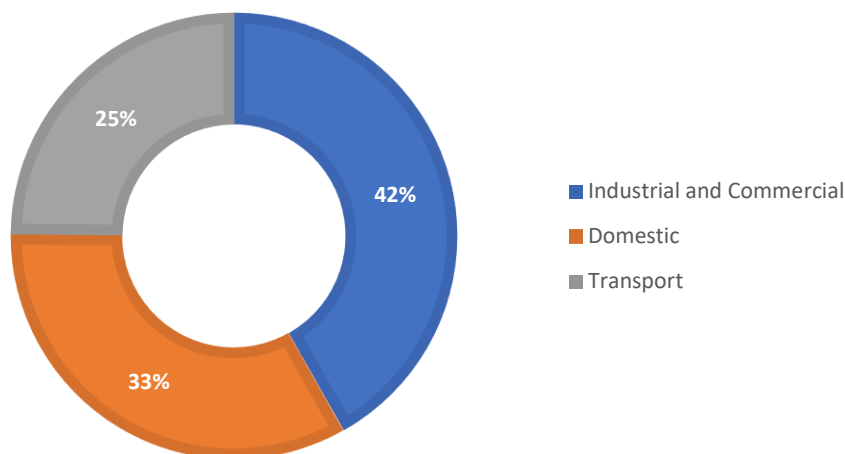


Looking at Leicester's emissions caused by our direct energy use in the city from gas, electricity, diesel, petrol and other fuels, the most recent government figures show that collectively we were responsible for 1.3 million tonnes of CO₂ emissions⁴ in 2017. This worked out at 3.7 tonnes per person, which is similar to levels in other comparable UK cities⁵. For Leicester to become carbon neutral this will need to reduce to almost zero. In the section on Playing Our Part later in this strategy we discuss how quickly this might need to happen. Figure 2 shows where Leicester's emissions in 2017 came from.

⁴ The government figures only cover CO₂, which is the main greenhouse gas. However, where we refer to "carbon emissions" in other parts of this document we are including other greenhouse gases too.

⁵ 2017 per capita emissions were 3.5t in Nottingham, 3.7t in Sheffield, 4.0t in Leeds and 3.2t in Bristol. Source: Department for Business, Environment and Industrial Strategy (BEIS).

Figure 2: Sources of Leicester's CO₂ emissions from energy use in the city in 2017



The council's and schools' carbon emissions totalled 42,569 tonnes in 2017/18, which represents just over 3 per cent of the city's emissions. While this is a small proportion of the city's total, it is an area we have more control over, and we believe it is important to lead by example. We look in more detail at the opportunities to reduce our own emissions and those of schools in the section on The Council.

Figures are not available for the emissions Leicester is responsible for through its consumption of goods, raw materials and services from outside the city, or the disposal of its waste. However, as discussed later, in the section on Consumer Choices and Waste, these sources might add another 60 per cent or more to the direct emissions.

Our achievements so far

The council has been working to reduce carbon emissions and to adapt the city to the changing climate for a number of years. Well before the Climate Emergency we had set long-term targets to:

- halve city-wide carbon dioxide (CO₂) emissions⁶ from their 1990 levels by 2025, and
- halve the council's own carbon emissions from their 2008/09 levels by the same year.

As the graphs below show, we are on track to meet both these targets. Emissions from the city as a whole fell by 45.7 per cent from the 1990 baseline level by 2017 and the council's own emissions had fallen by 45.5 per cent from their 2008/09 baseline level by 2018/19.

⁶ Our target for the city only covered carbon dioxide, because central government figures used for monitoring progress don't include other greenhouse gases.

Figure 3: Leicester's CO₂ emissions compared with our previous target trajectory

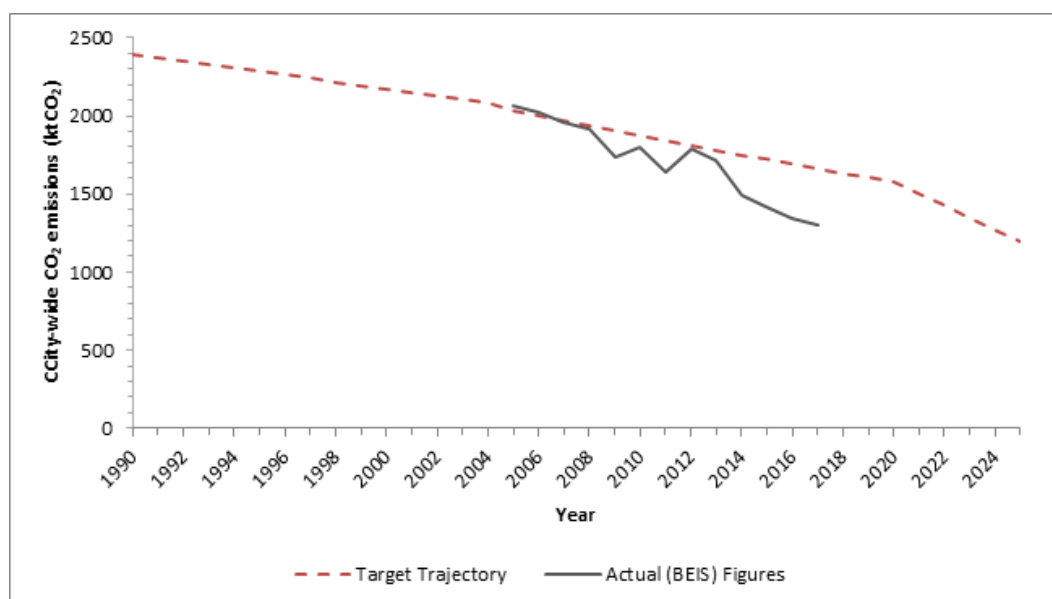
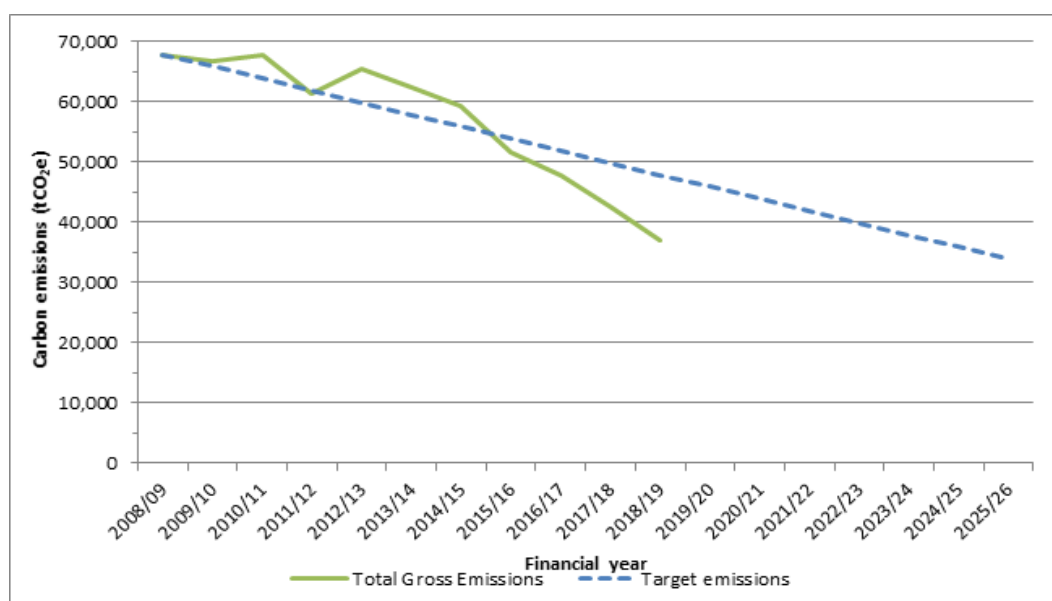


Figure 4: The council's carbon emissions compared with our previous target trajectory



For both the city and the council, the majority of the reduction so far has been the result of lower emissions from electricity use. Some of this has been achieved by local action to increase energy efficiency – for example installing LED lighting – while the rest has come from the decarbonisation of the national grid. The opportunities for further carbon emissions reduction over the coming years are discussed in the themed sections in Our Strategy for the City.

The council has carried out a wide range of actions and projects, dating back to the 1990s and even earlier, to play our part at the local level in reducing emissions. Some more recent examples, and their impacts, are highlighted below.

- **CUTTING ENERGY USE AND HEATING BILLS IN HOMES.** In the three years up to March 2019 we installed efficient new boilers in 3,870 council houses and fitted external wall insulation to another 141. The Health Through Warmth programme also secured almost £327,000 of funding from charities, energy companies and the NHS to reduce fuel poverty for 1,400 people in vulnerable households.
- **CONNECTING LEICESTER** has invested millions of pounds to provide safer, better-connected and more attractive walking, cycling and public transport infrastructure. The programme has created new cycle lanes throughout the city, redeveloped the Haymarket Bus Station to create extra capacity for buses and provided new public space in Jubilee Square, Cathedral Gardens, Market Square and New Walk Place.
- **LEICESTER'S FOOD PLAN** has delivered a programme of action to support better access to healthy and sustainable food, and to address food poverty. This includes supporting over 60 groups through the Community Food Growing Support Programme and 83 schools through the Food for Life Programme. Our school meals service has also achieved the Food for Life Silver Award.
- **SAVED FROM LANDFILL.** A Reuse Shop was opened at the Gypsum Close Recycling Centre in partnership with local charity LOROS. Over the last three years, almost 700 tonnes of items have been diverted from landfill.
- **WORKING WITH CHILDREN AND YOUNG PEOPLE.** Our Eco Schools programme works with local schools to provide environmental education to thousands of students, along with assistance to reduce schools' energy use and carbon emissions. 48 schools have now achieved a Green Flag award under the scheme – one of the highest rates in the country.
- **SUPPORTING SMALL BUSINESSES.** Our ERDF⁷ funded Green BELLE project has provided over £270,000 in match-funded grants towards insulation, LED lighting and efficient heating and equipment in 42 small and medium-sized businesses in the city, reducing carbon emissions and energy costs.
- **RESPONDING TO THE CHANGING CLIMATE.** The River Soar Strategic Flood Risk Management Programme has carried out £7.5 million of work to reduce flood risk to over 2,000 local homes and businesses. This includes creating the award-winning Ellis Meadows flood storage site, which doubles as a vital new wetland habitat for wildlife, as well as a recreational space.
- **THE WHITE LIGHTS PROJECT** has replaced street lighting across the city with low energy LEDs, reducing electricity consumption by 58 per cent and annual carbon emissions by 8,450 tonnes while saving over £1.7 million in energy bills each year.
- **COUNCIL BUILDINGS.** We've reduced energy use in our buildings, led by our flagship redevelopment of City Hall in 2014. The building is connected to district heating and had 90 solar PV panels installed, as well as insulation, double glazing and low energy lighting. We've also saved energy by reducing the size of our corporate estate by over 7,000m² since 2015, and now operate from fewer, more efficient buildings.

⁷ European Regional Development Fund

- SOLAR PV PANELS have been installed on council buildings across the city, with 965kWp of capacity installed or in progress. These are currently generating over half a million kWh of electricity and saving more than 500 tonnes of carbon emissions each year.
- SUSTAINABLE PROCUREMENT GUIDANCE has been updated and a Social Value Charter published to help staff achieve reductions in energy use, carbon emissions, waste and impact on natural resources when buying goods and commissioning outsourced services for the council. Our environmental standards include a requirement for all timber to be sourced from certified sustainably managed forests. We also look for electric or other low-emissions models as the preferred choice for our fleet, where they are available, affordable and can do the job.

Playing our part

Ambition for a carbon-neutral city

We believe that the city of Leicester must play its part in national and global efforts to implement the Paris Agreement on climate change. Scientific estimates for the speed and scale of global carbon reduction needed suggest that the City of Leicester needs to become carbon neutral by 2030 or sooner.

The council will lead by example, working towards the city and the council becoming carbon neutral, while at the same time tackling poverty and inequality, and enabling the city to continue developing to meet the needs of its growing population for housing, jobs, access to services and other essentials.

A carbon-neutral Leicester cannot be achieved by the council on its own. We will continue to work in partnership with other like-minded organisations, businesses, groups and individuals to make our own actions more effective, and to support progress throughout the city.

Becoming carbon neutral will require unprecedented levels of central government support including legislative and regulatory changes, huge national investment programmes and greatly increased funding to local government. The council commits to engaging with the government to seek the changes we think are needed.

Background

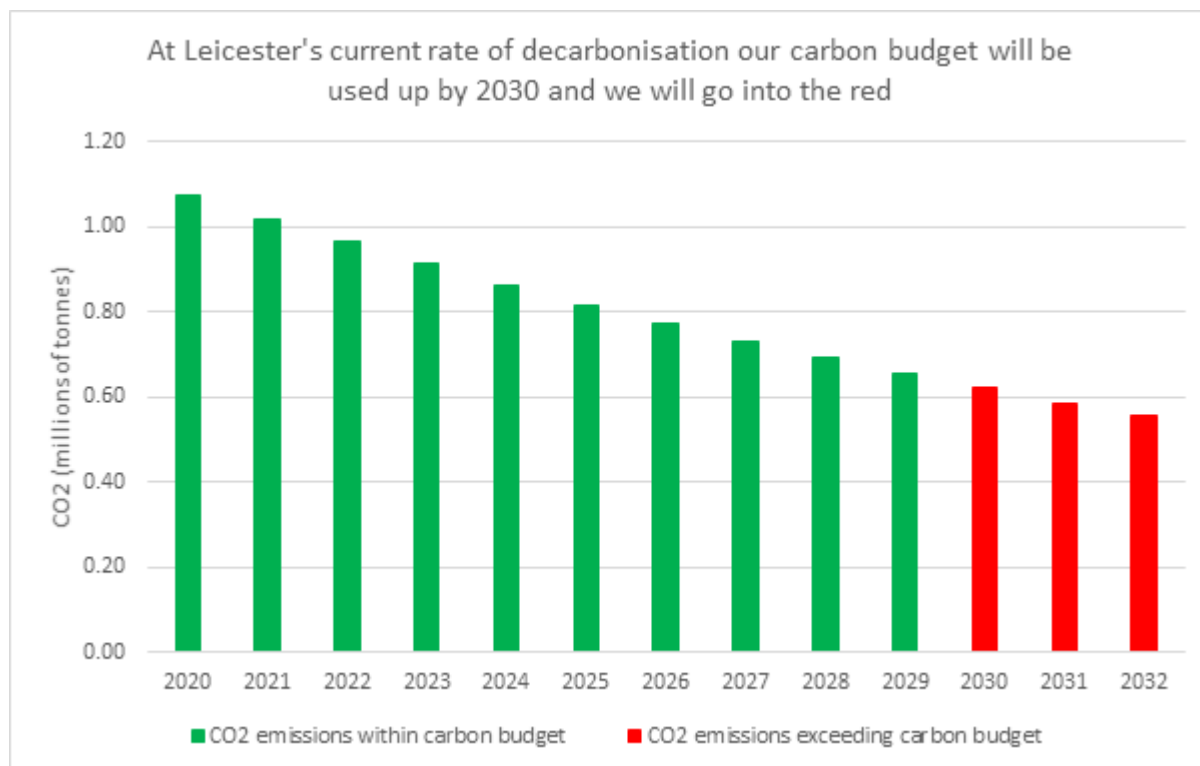
In 2016 world leaders from 195 countries, including the UK, signed the Paris Agreement on climate change. They committed to take steps to limit global temperature rise to well below 2°C and pursue efforts to keep it to 1.5°C. This is what scientists think is necessary to prevent the worst impacts of climate change on humanity and the natural world.

To have a chance of achieving this, it is estimated that we must limit human-made emissions of carbon dioxide (CO₂) – the main greenhouse gas – to no more than 900 gigatonnes in total⁸. This is the global 'carbon budget'.

⁸ Up until the year 2100.

Scientists have calculated Leicester's share of this budget to be 8.5 million tonnes of CO₂ in total⁹ from our energy use in the city¹⁰. On this basis, if the city's emissions continue to reduce at the current rate, this budget will be exceeded from 2030. This is illustrated in the chart below.

Figure 5: Leicester's projected CO₂ emissions if the most recent rate of reduction continues



The city therefore needs to speed up its rate of decarbonisation in the coming years to improve the chances of its emissions being limited to within this figure.

To help us consider the best options for taking action, we will work with partners to develop an ambitious indicative pathway for reducing the city's carbon emissions. By this we mean a series of practical steps, with quantifiable carbon savings, to transform our energy use in homes, workplaces and transport in ways which are fair and sustainable – reducing poverty and inequality and supporting a thriving economy while protecting the environment and working towards becoming carbon neutral. We will regularly review the pathway and our carbon-neutral ambition to take account of changes in scientific understanding, technology options, regulation, resourcing and other factors.

Based on this pathway, we will identify the funding, enabling measures and other support we think is needed from central government. We will make our case to them – looking to strengthen our voice by joining forces with partners in the city and with other local authorities.

⁹ Up until the year 2100.

¹⁰ [Setting Climate Commitments for Leicester – Quantifying the implications of the United Nations Paris Agreement for Leicester](#). Tyndall Centre for Climate Change Research.

Responses to Leicester's Climate Emergency Conversation

To help develop this strategy, we wanted to make sure that local people, groups and organisations had a chance to have their say. We also wanted to engage with people from a wide variety of backgrounds, who could bring their own views and experiences into the conversation.

During 'Leicester's Climate Emergency Conversation' between November 2019 and February 2020 we used different methods to involve a wide range of people and organisations. We developed proposals for how Leicester might need to change to become carbon neutral and adapt to climate change. We also suggested possible actions that could be taken. We used these proposals as a starting point for people to respond, while also encouraging them to suggest their own ideas.

Leicester's Climate Emergency Conversation	
Activity	Details
Leicester's Climate Assembly	A whole-day event with a group of attendees selected to provide a representative sample of Leicester's population.
Young People's Climate Assembly	A whole-day event with pupils from secondary schools across the city.
Online Questionnaire	A website open to all respondents including residents and non-residents with an interest in Leicester.
Dialogue	An online discussion forum open to all respondents.
Conversation Pack	A pack for local groups and communities to allow them to hold their own consultation events in their preferred format.
Key Organisation Meetings	One-to-one meetings with selected public and private local organisations, to look at the potential for future partnerships.

Hundreds of individuals and organisations took part in the process, including:

- Leicester's Climate Assembly – 53 attendees from diverse backgrounds
- Young People's Assembly – 104 pupils from 12 schools
- Online Questionnaire – 374 responses, including 4,307 individual comments
- Conversation Pack – 8 groups responded, involving over 100 people
- 13 meetings held with key organisations

Summary of Responses

The following is a summary. More detail is available in the consultation reports on our website.

Support for the proposals

There was a high level of support for all the proposed actions across the conversation, as well as support for them to be more ambitious and urgent. Many of the proposals were also seen to offer further benefits, for example to health and wellbeing, reducing costs and improving the wider environment in Leicester. Some of the specific areas that were the highest priorities were:

- Investing in infrastructure for public transport, walking and cycling
- Making sure that the new Local Plan addresses the Climate Emergency
- The government leading on changes and providing support and funding
- The council increasing the efficiency of its buildings and homes and making sure that new buildings on its land are low carbon
- Planting more trees and providing quality green spaces locally
- Education on the Climate Emergency, especially in schools

Concerns

One of the main concerns was that proposals could have unintended negative impacts, particularly on the less well-off and small businesses. Ensuring that sustainable living and choices are affordable and available to all, and that no-one is unfairly disadvantaged were seen as vital to the overall programme. There were also a number of comments that many of the actions would be hard to measure or monitor, and that clearer targets would be needed. More joined-up working between the council and other groups, organisations and local and national government was also viewed as important in maximising the impact of the proposals.

Barriers to action, and suggestions for overcoming them

The most widely discussed barrier was the cost of many of the actions, and the lack of funding for them. This applied to individuals, organisations and the council. Some proposals were also seen as difficult to enact, especially where the council has limited influence. Similarly, the difficulty of engaging people, and the reluctance of many people and organisations to make significant changes was a concern.

One of the key messages was that national government funding, support and legislation will be needed to encourage and enforce actions where necessary. There were also calls for the council and other organisations to take a leading role, and lead by example in various areas. Education and engagement were also viewed as vital to tackling many of these issues.

New ideas suggested

Hundreds of new ideas were shared, and we are continuing to investigate how more of these could be taken forwards in the future. One of the most popular areas for new ideas was ways of educating city residents and organisations through different technologies, services and

communities. There were also lots of ideas on raising and using funds, supporting new and existing groups and schemes within communities and making it easier, simpler and cheaper for people and organisations to act.

We will continue to use the links we've developed with people, groups and organisations throughout the city, to drive future engagement, seek ideas and opinions and look for opportunities for partnership working.

Our Strategy for the City

Preface to the strategy: lessons from the COVID-19 pandemic and opportunities for a 'green recovery'

COVID-19 hit the UK and the 'lockdown' was imposed just as the work on this strategy and the accompanying action plan was nearing completion. Rather than delay the publication and implementation until the pandemic had passed, we decided to go ahead as planned so that our programme can – as far as the circumstances allow – progress with the urgency needed in a climate emergency.

At the time of writing, there is a lot of comment and debate about the environmental implications of the pandemic itself and the steps being taken to respond to it. Many positive environmental consequences from the lockdown have been evident – in terms of traffic levels and air quality, for example. There have been downsides too though, such as the dramatically reduced role for public transport. For many, society's ability, when it's necessary, to make and adapt to big and rapid changes in the way we live our lives illustrates that we are also capable of responding to the Climate Emergency with the urgency and ambition needed.

As work gets underway at a government level and in local authorities to plan for the recovery phase of the pandemic response, we have a critical opportunity to make the recovery a 'green recovery' rather than simply trying to restore things to their pre-pandemic position – but what does that mean in practice? Drawing upon the advice of the Committee on Climate Change to the Prime Minister in terms of the government's recovery planning, we will seek to support a recovery in Leicester that takes us towards our ambition of becoming a carbon-neutral and climate-adapted city. This includes:

- Looking at how we can make it convenient and attractive for people to maintain the low-carbon lifestyle changes they've adopted out of necessity during the crisis – making them permanent.
- Supporting a business and economic recovery that takes us towards a low-carbon economy in the city. This includes supporting job creation and skills development in key sectors needed for the transition to carbon neutrality such as low-carbon construction and heating. Also looking at how we can enhance support for businesses to introduce carbon reduction and climate adaptation measures, which will reduce running costs and business continuity risks.
- Targeting the investment that the council is able to make in low-carbon and climate-adaptation infrastructure, such as in improving insulation of homes and other buildings through 'retrofit' programmes, in ways which create jobs in the local economy to replace jobs that may be lost during the COVID-19 crisis, and to reduce poverty and inequality.
- Lobbying the government to embed carbon reduction and climate adaptation in its own recovery planning, including providing the necessary funding to local councils to play their part.

As an example of how we're following the above approach, our Transport Recovery Plan responding to the COVID-19 crisis puts sustainability at its heart alongside safety and social equity, with measures including the creation of 10 miles of new pop-up cycle lanes.

Aims

In order for Leicester to progress from where it is today, to become carbon neutral and to sustainably adapt to the changing climate, we believe it needs to:

1. Improve existing housing, workplaces and community buildings in the city to enable them to become carbon neutral, and energy and water-efficient.
2. Progressively improve the environmental standards achieved by new development, including construction materials, until developments ultimately achieve a carbon-neutral standard and are energy and water-efficient.
3. Rapidly increase renewable energy generation in the city and encourage storage of surplus to help meet demand at peak times.
4. Reduce carbon emissions from travel and transport towards the goal of becoming carbon neutral, based on walking, cycling, public transport and ultra-low emissions vehicles, as well as reducing the need to travel.
5. Work towards the prevention of carbon emissions outside and inside the city resulting from its use of goods and raw materials – including dietary choices – and its waste.
6. Protect the city from the increased risk of heatwaves and flooding as the climate changes, focusing on nature-based solutions involving trees, green spaces and sustainable drainage where possible.
7. Protect biodiversity, green spaces and trees as far as we can from the negative impacts of a changing climate.
8. Increase the net amount of carbon locked up in soil, trees and vegetation, and in timber used in buildings, within the limits of a compact, densely populated urban area.
9. Respond to climate change in ways that create jobs, reduce poverty and inequality, improve health, stimulate innovation in the economy and bring communities together.
10. Engage with people, groups, organisations and businesses in the city to encourage everyone to play their part in tackling the Climate Emergency, and form partnerships to increase the effectiveness of our response.

At home

In this theme we look at existing homes in the city. Building of new housing is discussed in the Land use, green space and development theme.

Climate impacts

Housing accounts for about a third of carbon dioxide (CO₂) emissions from energy use in the city. 70 per cent of this is from gas used for heating and hot water, while the rest is from the generation and transmission of electricity – used mainly for lighting, appliances and electronics, as well as heating and hot water in some homes.

Emissions from housing in Leicester reduced by 35 per cent between 2005 and 2017, despite the number of households increasing by 12 per cent over a similar period. This is partly the result of electricity becoming 'greener', so that there are less emissions from each kilowatt-hour used. The introduction of more efficient boilers and appliances, and fitting of more insulation, also helped, but cuts in government support led to a decline in the rate of fitting new efficiency measures after 2012¹¹.

Electricity is expected to continue to become greener, but with more housing needed¹² to meet the needs of a growing city population, and the majority of existing homes still heated by gas boilers, housing cannot become fully carbon neutral until heating and hot water systems change. This could create a risk of more fuel poverty if electric systems are needed, because electricity costs more than gas per kilowatt-hour of energy. This was a concern highlighted by the public during our Climate Emergency Conversation. So, our vision for carbon-neutral housing in Leicester includes:

- High levels of insulation to keep bills as low as possible
- Smart controls to help people use their heating, lighting and appliances efficiently, as well as energy efficient lighting and appliances, to keep bills down
- Low-carbon heating – probably mainly using heat pumps¹³
- Renewable solar energy generated from homes wherever possible – with some of it stored for times of peak demand.

As well as causing carbon emissions, housing can also be vulnerable to the impacts of climate change too. Experts are warning that more homes may be at risk of overheating¹⁴ as heatwaves become more frequent. Some areas of the city are also at risk from flooding, and housing can add

¹¹ The number of major energy efficiency measures installed in homes each year fell by 80 per cent between 2012 and 2015. Source: [Carbon Brief](#).

¹² An estimated 29,104 homes will need to be built by 2036.

¹³ Unless government policy supports mass production of low carbon hydrogen to replace natural gas, as an alternative.

¹⁴ Nationally, 20 per cent of homes are already prone to overheating (Committee on Climate Change), and maximum summer temperatures could rise by 6-9°C by the end of this century (Met Office forecast under a 'high emissions' scenario).

to flood risk by preventing rainfall from soaking away. This is covered in the section on Land Use, Green Space and Development.

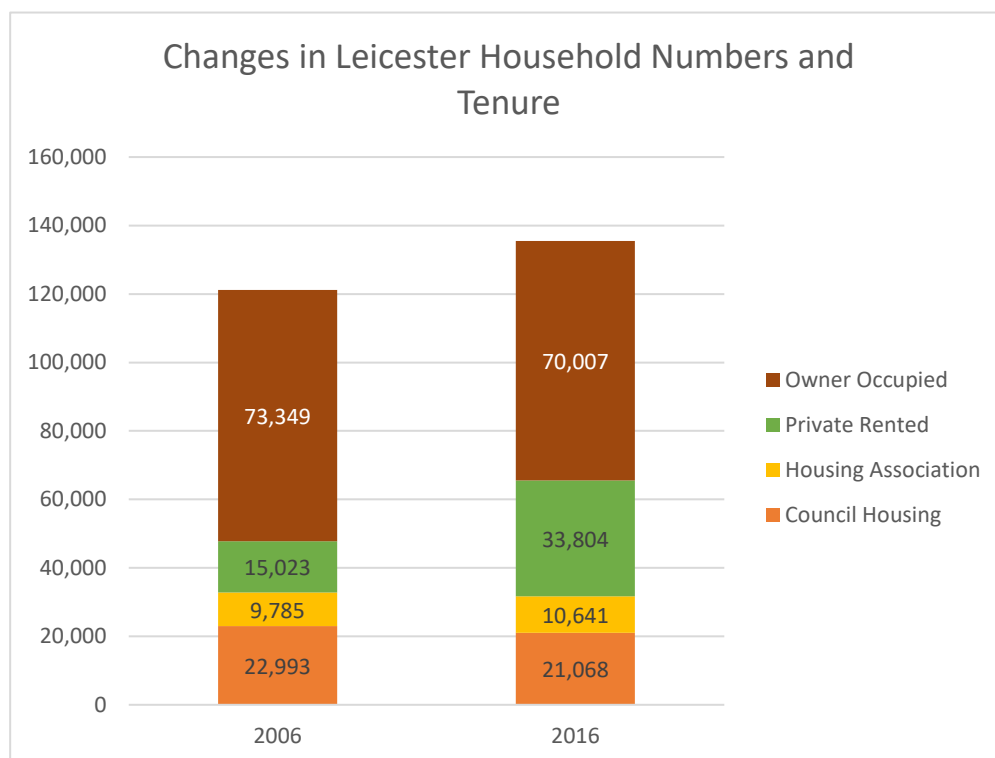
Opportunities to take action

The council's main area of influence over the energy efficiency of housing and its CO₂ emissions is through our role as landlord for around 21,000 council houses in the city. We have been investing over many years to improve insulation and upgrade boilers in our stock and, as a result, we are starting from a good position. The average council house in Leicester has an energy efficiency rating of 'C', whilst the most common rating in the city as a whole is 'D' ¹⁵.

However, in a climate emergency we must go much further: retrofitting more insulation, efficient heating and lighting and renewable energy systems wherever possible; encouraging tenants to make use of smart meters and other energy saving controls; and starting to plan for the introduction of low or zero carbon heating, when we are clear about the government's preferred approach. Any increase in retrofit will bring the added benefit of supporting 'green job' creation.

Council housing in Leicester, however, makes up only 16 per cent of the housing stock and has been declining as a percentage while private rented housing has increased, as shown in Figure 6. The council has very limited influence over carbon emissions from the private rented sector, or from owner-occupied homes. We do have a role in ensuring private sector landlords meet at least the legal minimum of an 'E' energy efficiency rating (if it is cost-effective to do so) when they re-let their properties, but this is well below what will be needed if Leicester is to become carbon neutral.

Figure 6: Household numbers and tenure in Leicester 2006 and 2016



¹⁵ The ratings go from A to F, with A being the most efficient.

One of the concerns raised by the public during our Climate Emergency Conversation was that if private landlords were forced to make energy efficiency improvements to their properties, or to install renewables or new heating, they might pass the costs on to tenants in the form of increased rents – pushing people into poverty. People also strongly supported the idea of a major government programme to fund improvements to housing. These are both issues that the council can raise in any meetings with government officials and MPs. If a new government programme is launched in the future, the council will look at how it can support its implementation in Leicester.

The risk of fuel poverty increasing as a result of the changes needed to housing was another public concern. The council is already doing what it can to help owner-occupiers in fuel poverty to access any available funding from energy company, health or charitable schemes to keep their homes warm more affordably. This includes energy efficiency measures, which will reduce carbon emissions. We will also make sure that we co-ordinate our work on climate change with the implementation of our Anti-Poverty Strategy.

Lastly, many people suggested during the Climate Emergency Conversation that more could be done to raise awareness about what we can all do as individuals to reduce carbon emissions. This will require engaging with people and organisations across the city, including tenants, homeowners, landlords, housing associations and developers of new housing, and making sure they have access to the necessary information on how to reduce carbon emissions from homes.

Objectives

Taking account of the opportunities and constraints outlined above, our objectives up to 2023 for housing are:

1. Improve our understanding of how housing in the city can become carbon neutral and remain safe and comfortable in a changing climate. Use this knowledge to inform our future plans.
2. Reduce carbon emissions from council housing and communal areas by continuing to invest in energy efficiency 'retrofit' improvements, and plan for further improvements beyond 2023.
3. Engage with tenants, owner-occupiers, landlords, housing associations and others involved in housing to raise awareness and share knowledge about what can be done to save energy, keep bills down and reduce carbon emissions.
4. Increase renewable energy generation and consider opportunities for installing energy storage and low carbon heating for council houses.
5. Continue to enforce national minimum standards for energy efficiency and affordable heating of private rented housing and investigate opportunities to improve enforcement services.
6. Continue to support owner-occupiers in fuel poverty to access funding and installers, to improve the energy efficiency of their home and to replace inefficient or broken heating.
7. Lobby central government to improve regulation and increase funding to create a step-change in levels of investment in energy efficiency, carbon reduction and affordable warmth across all housing tenures, while protecting tenants.

Travel and transport

Climate impacts

According to figures from the government¹⁶, transport is responsible for about a quarter of Leicester's carbon dioxide (CO₂) emissions from energy and fuel use within the city, and transport emissions have fallen by 11 per cent since 2005. This is a positive trend although, in common with other cities, it is a slower rate of reduction than seen with emissions from housing and business sites, which have benefitted from the 'greening' of electricity from the national grid.

It should be noted that the government figures are only an estimate, based on automated vehicle count figures from locations around the city. They may not reflect the full impact of congestion, which can add to carbon emissions by increasing journey times.

The reduction seen in transport emissions figures is largely the result of improvements in the fuel efficiency of vehicles rather than less vehicle usage or a major shift towards lower-carbon modes of travel. The introduction of ultra-low-emissions vehicles (ULEVs) such as plug-in hybrids and electric vehicles has not contributed significantly to the CO₂ reduction seen so far. By the end of 2018, Leicester had 710 ULEVs registered here – only 0.4 per cent of vehicles registered in the city at the time.

Looking ahead, Leicester's population is expected to grow by just over 4 per cent between 2020 and 2030 and Leicestershire's to grow by over 10 per cent in this time,¹⁷ which could add significantly to transport demand. At the same time, ULEVs are expected to increase their market share more rapidly as technology improves, prices come down and we approach the government's proposed date of 2035 when new petrol, diesel and hybrid cars will no longer be available. Nonetheless, there are likely to remain a number of petrol and diesel vehicles on the roads by 2030.

Opportunities to take action

The transport opportunities outlined below primarily address issues confronting the city, but it is important to stress that transport does not respect local authority boundaries. The issues extend into neighbouring districts and counties, across regions and can often only be addressed at a national level. For that reason, our projects and initiatives are developed and delivered against a backdrop of numerous transport-related partnerships and agreements at a local, county, regional and wider level. This is particularly important when addressing issues affecting rail and road networks, which can often only be considered at a regional or national level. When appropriate, these groups provide an effective vehicle for lobbying government to secure funding and support to address transport issues affecting our city and region. When necessary, however, the city will continue to express a local view on national issues by lobbying local MPs or national government or through relevant national groups – for example on air quality and sustainability matters.

The council has delivered major programmes to improve transport infrastructure and services in the city so that a good choice of travel options is available for everyone. For example, since 2011

¹⁶ Figures published by the Department for Business, Energy and Industrial Strategy.

¹⁷ Source: Office for National Statistics, 25 year population projections.

more than £100 million has been invested through Connecting Leicester in extensive new high-quality cycling and walking infrastructure, focused in and around the city centre, and a dramatic improvement in the public realm through revitalised streets and award-winning public squares and spaces. We have also invested substantially in new bus infrastructure, including a new bus station at Haymarket and a bus corridor scheme on the A426, which has seen bus use grow by 13 per cent – bucking the national and local trend.

We have implemented programmes focused on promotion and support for behaviour change through the Local Sustainable Transport Fund and Access Fund to introduce many new people to walking and cycling. In addition, over the three years of our previous Sustainability Action Plan our promotional work led to 2,500 new members of our car-share scheme: LeicesterShare. We're also delivering the Choose How You Move service to provide travel information and a journey planner to highlight the options for active travel for local journeys.

The council's responsibilities for city-wide transport strategy, for managing and maintaining the highways network and for implementing local planning policies for new development give it significant influence over emissions from transport. However, these roles relate primarily to transport infrastructure and its ability to make low and zero-emissions forms of travel accessible and practical. Ultimately, Leicester's transport emissions are the result of travel decisions by individuals and organisations, and these are influenced by a much wider range of factors including cost, convenience and cultural perceptions of different travel options. This therefore limits what the council can achieve without wider support.

While the expected national shift towards ULEVs might appear to offer a 'magic bullet' for reducing transport emissions, in reality it is not a solution on its own. There are several reasons for this:

- 37 per cent of households in Leicester do not have access to a car¹⁸, so convenient, affordable, high-quality alternatives need to be widely available if we are to tackle climate change in a way that doesn't disadvantage those people.
- Leicester already experiences significant congestion, and this could get worse as the city grows unless vehicle numbers on the roads are kept under control. This means more trips will need to be made, and local services accessed, in other ways.
- Demands on the electricity grid are expected to increase a lot as more heating of buildings changes to electric systems and more renewable electricity is fed in from local generation. If transport relies too heavily on electricity as well, the costs of strengthening the grid could become a major burden on the local economy.
- ULEVs themselves have significant environmental impacts – particularly from the manufacture of the batteries. They will add to Leicester's carbon and environmental 'footprint' from goods purchased by city residents and organisations¹⁹.

For these reasons, the council's approach to tackling transport emissions needs to take account of the 'travel hierarchy' below.

¹⁸Source: Office for National Statistics, 2011 census.

¹⁹ The section about Consumer Choices and Waste includes more about emissions from consumption.

Figure 7: The travel hierarchy



The travel hierarchy starts with looking at opportunities to reduce the number and length of journeys – for example by people accessing services from home or making sure that they have the facilities they need nearby. The council already has planning policies to promote the availability of key facilities at a neighbourhood level, and the new Local Plan provides an opportunity to continue to do this. We will also continue to improve online access to council services. We are aware that, for those on a low income, online access may be problematic due to the cost of data, so we are addressing this issue through our Anti-Poverty Strategy. This includes a commitment to providing free Wi-Fi on council estates.

In terms of encouraging more walking, cycling and public transport use, the council will be able to continue improving infrastructure, promoting these modes of transport and supporting improvements to public transport services in partnership with the providers. This includes improving the integration of different transport services to make it easy for people to make multi-modal journeys, such as cycling to the train station or catching a shuttle bus between the train and coach stations. In the past, investment in these areas has been constrained by levels of government funding, and by changing government policies and targets. We are therefore intending to consult on the introduction of a Workplace Parking Levy. This could provide an ongoing secure level of funding for sustainable transport improvements to benefit employers, commuters and the wider city. It would allow us to plan further ahead, and to attract matching investment from central government and other sources.

We will also need to ensure that development in the city is consistent with the goal of becoming carbon neutral. New housing, employment sites, schools and accompanying infrastructure will all need to be designed for a city in which a much bigger proportion of travel takes place on foot, by bike and by public transport, and in which all vehicles run on carbon-neutral energy sources. This means ensuring that new strategic housing and employment developments are well connected to public transport services, with good access on foot and by bike too. Secure bike parking will be needed, and development will need enough electric vehicle charge points. Travel Plans produced for new developments will need to be ambitious, reflecting the need for transport to become carbon neutral.

As electric vehicles begin to replace petrol and diesel in more significant numbers, the council will need to plan for a substantial and ongoing further expansion of the network of public EV charge points across the city. This will need to include provision for areas of terraced and other housing without off-street parking, where on-street chargers will be essential. We also need to lead by example in introducing ULEVs into our own fleet (refer to the section covering the council) and work with the bus companies to make the same transition with their vehicles.

Transport demand generated by business and public service activity in the city clearly makes a big contribution to traffic and carbon emissions. This includes freight distribution and logistics, business travel and commuter journeys. While we can influence some of these activities through the infrastructure improvements and other measures described above, much of the

decarbonisation of employment-related travel and transport will rely on decisions by employers and individual employees. We can, however, look to support other employers with this through targeted programmes of advice, promotion and, where possible, financial support. We have delivered a number of programmes of this kind already and will continue to take every opportunity to do so, such as our ongoing work to provide local businesses with travel planning support.

The other way in which we can influence emissions from transport is through our management of the highways network and parking. We recognise that for travel patterns to shift towards a much greater role for walking, cycling and public transport, the highways network is going to need to adapt to encourage and accommodate these changes. This is something that has already been happening over recent decades, with road space being reallocated where necessary to improve provision for buses, bikes and pedestrians. Similarly, parking has been changing, with new provision on the edge of the city at Park and Ride sites to encourage commuters and shoppers to take public transport into the centre rather than drive. Further changes of these kinds will be necessary to enable the shift in travel behaviour we will need.

We will also need to look for ways to address the cost imbalance between driving and using the bus. This was one of the biggest barriers to changing travel choices raised by the public during Leicester's Climate Emergency Conversation. Many people highlighted what they felt was the high cost of taking the bus compared to the cost of driving and paying for parking. They argued that this is discouraging car drivers from changing to the bus. It could also present a financial barrier to travel for those without access to a car – and who may be on a low income.

Objectives

Our objectives for travel and transport up to 2023 are:

1. Increase the percentage of journeys made by walking and cycling through improvements to infrastructure and services, and through promotion.
2. Work with the bus companies to increase the percentage of journeys made by public transport through improvements to services and infrastructure, and through promotion.
3. Work with the bus companies to start introducing ultra-low emissions buses and to plan for this to continue beyond 2023.
4. Expand the network of electric vehicle charging points and plan for further expansion beyond 2023. Also regularly review the need for hydrogen refuelling infrastructure.
5. Develop or support car and bike sharing schemes, including car clubs, where they can reduce carbon and air pollution emissions from travel.
6. Work with taxi and private hire operators* to further reduce carbon and air pollution emissions from their services.
7. Enforce planning policies to support provision of essential services near to where people live and work, along with good access to walking, cycling and public transport routes from new development.
8. Address our Climate Emergency aims in our policies for, and management of, car parking and the highway network.

9. Continue to improve online access to council services, while also continuing to offer facilities in neighbourhoods – allowing people to access services without the need for car travel.

* Refer to the At Work section for objectives relating to business travel and commercial haulage and distribution. Refer to the section about The Council for objectives relating to the council's business travel and fleet.

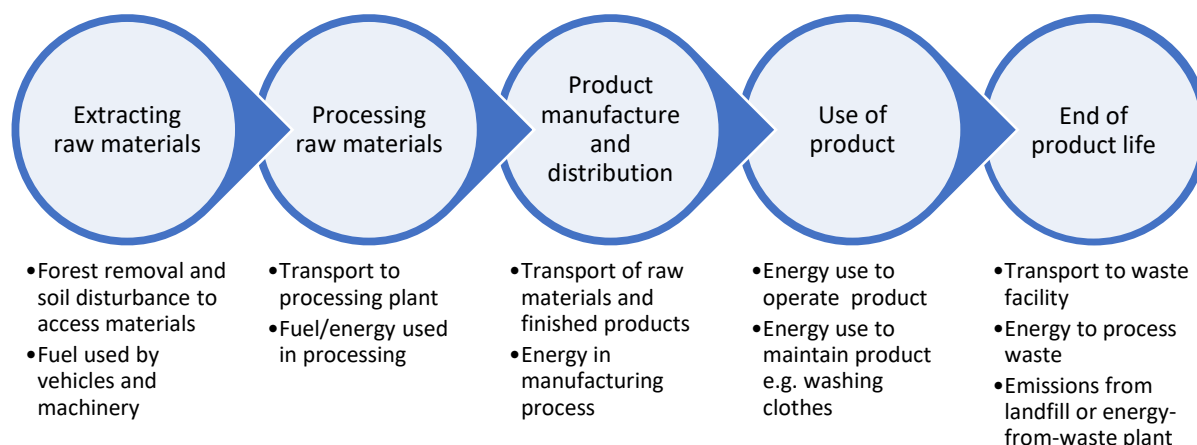
Consumer choices and waste

The choices we all make about what to buy clearly have a big influence on what we later need to throw away. Both our purchase and disposal of things results in carbon emissions, so this section of the strategy looks at both these areas.

Climate impacts

Accurate figures are not available for the carbon emissions caused by what we buy in Leicester or what we throw away. This is because emissions can be caused at every stage in the life of a product or raw material from cradle-to-grave. Many emissions are generated outside the city – in extracting and processing raw materials, manufacturing and transporting products, and collecting and processing the waste that's generated.

Figure 8: Causes of carbon emissions during the life of a product



There isn't a straightforward way of measuring what comes into and leaves the city or adding up the emissions it creates. However, it has been estimated that emissions caused in large cities by consumption of raw materials, goods and services from outside could add another 60 per cent to those from activities inside them²⁰. If this figure was applied to Leicester, it would add another 778,000 tonnes per year to the carbon footprint.

There are similar difficulties estimating the emissions caused by Leicester's waste, as there are no overall figures for what is generated and how it is disposed of. The government's figures show that waste treatment and disposal accounts for about 5 per cent of UK carbon emissions²¹.

Methods of estimating emissions from municipal waste that's landfilled usually assume that it includes food waste, which breaks down in landfill to emit methane – a potent greenhouse gas. Leicester's municipal waste, however, is processed in a ball mill to take out most of the food

²⁰ Source: [Consumption-Based GHG Emissions of C40 Cities](#)

²¹ 2018 UK Greenhouse Gas Emissions, Final Figures, Department for Business, Energy and Industrial Strategy

waste²² before any gets to landfill. As a result, our emissions from this waste stream are expected to be lower.

Whatever the actual figures are, it remains the case that collection, sorting, treatment and disposal of Leicester's waste will be causing a significant amount of carbon emissions. And for every tonne thrown away, new raw materials and goods will need to be made and transported to the city to replace things – causing further emissions. So, the more that waste can be reduced, reused, recycled or composted, the better.

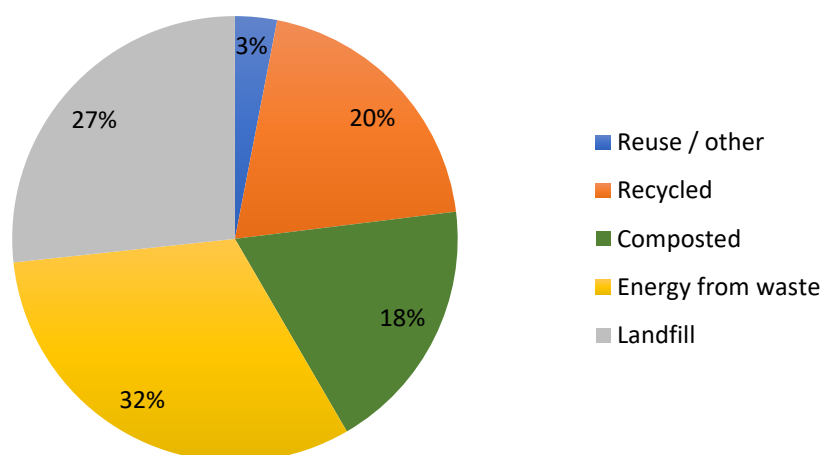
Ultimately, what's known as a 'circular economy' will be necessary. In a circular economy natural resources are not thrown away at all when products are no longer needed. Instead, they become raw materials for new products, made using advanced methods for recycling and reprocessing.

Opportunities to take action

The council doesn't have much influence over waste generated by commerce and industry in the city. Our biggest opportunities for action are around household waste, and also the council's own waste, which is covered in the section on The Council.

We provide the household waste collection and recycling services for the city through our partner, Biffa Leicester. In 2018-19, we diverted 73.3 per cent of household waste from landfill, with most being recycled, composted or sent to energy-from-waste plants:

Figure 9: Disposal of Leicester's household waste in 2018/19 by percentage



The Committee on Climate Change has estimated that the UK will need to increase its recycling rate to 70 per cent or more to reach net-zero carbon emissions²³. This means that Leicester and

²² It is broken down by bacteria in an anaerobic digester to produce biogas. The biogas is then burned to generate electricity. What's left afterwards is used in land reclamation projects. The ball mill also takes out recyclable metals and combustible materials suitable for energy generation, so that a minimal amount of waste overall needs to be landfilled.

²³ Source: Committee on Climate Change, Net Zero - The UK's contribution to stopping global warming: <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

other cities will need to go well beyond current recycling levels. The government's new Resources and Waste Strategy for England is expected to push for an increase to a 65 per cent recycling rate. It will require local councils to develop their own Waste Strategies setting out plans to achieve this increase. This represents a key opportunity to reduce Leicester's carbon emissions from waste. It will rely on strong government support to deliver the strategy.

Where waste can be prevented, or unwanted items can be reused, this is another way of reducing emissions. It is generally even better than recycling because it avoids the need for transporting waste to recycling plants and for energy to carry out the recycling process and make new products. Reuse is often best run at a community level, by charities, small businesses and community organisations. The council can, and already does, support community-scale reuse activities. This could be another opportunity to reduce emissions if we can encourage new schemes to get started or help existing ones to expand.

We can also continue to promote the benefits of reducing, reusing, recycling and composting, and to publicise the services and schemes available across the city. Planned work includes a communications campaign on correct recycling, metal recycling and promoting home composting through advice and discounted compost bins. We can link this to the growing concerns about plastic waste too, by supporting projects to reduce single use plastics, including the promotion of free water bottle refill locations.

While we don't have a lot of influence over waste from businesses and other employers, we do already provide waste collection and recycling services to retail businesses in the city centre and local shopping centres. We also offer a trade waste recycling and disposal service from Gypsum Close. The expansion of this service to increase recycling by local small businesses is another opportunity. We can also look to help promote schemes and programmes by partner organisations, including the universities and Leicester and Leicestershire Enterprise Partnership (LLEP) to support waste reduction, reuse and recycling by businesses. This includes work with food and drink manufacturing businesses through the Food Plan and the LLEP's Sector Growth Strategy for the food and drink sector.

During the Climate Emergency Conversation members of the public supported the idea that individuals and organisations need to think more about what they buy. They felt that more information is needed to help people make more informed choices. They were also against the idea of the council appearing to tell people what to do. Bearing this in mind, we need to look at how we can get information and advice out to the public and businesses. We also need to look at how we can help improve the choices open to them, while avoiding imposing changes.

Looking at the consumption of raw materials and products in Leicester, and opportunities to promote more sustainable, climate-friendly choices, the science tells us that one of the most important areas is food. Estimates suggest that food accounts for 20-30 per cent of carbon emissions worldwide. Most experts believe that current western diets, with their emphasis on meat and dairy produce, are not sustainable because of the energy and resources used for intensive production, the land needed for growing animal feed and the methane generated by cattle and sheep²⁴. Transport of food also adds to emissions – particularly where airfreighting is involved. Leicester's Food Plan looks at these issues. It contains actions to raise awareness and

²⁴ Methane is another greenhouse gas that adds to climate change, alongside carbon dioxide.

support a shift to healthier and more sustainable diets, and less waste and single-use plastics from food products. It includes work on engaging at all levels including community growing projects, work with business that produce and serve food and educating and informing consumers about healthy and sustainable choices. The plan also promotes action to reduce 'food miles' through local food growing, including on allotments, and local sourcing by food businesses.

Other types of products with a big climate impact include construction products such as cement and steel, as well as electrical goods and clothes. The council has an opportunity to lead by example in its own construction projects, and this is covered in the section on The Council. For electrical goods and clothes, these are areas where the climate impact could be reduced by encouraging a shift away from a culture of disposable products and towards products which are longer lasting or repairable. This links back to the council's support for community-led reuse and repair projects.

Leicester's important role in the textiles manufacturing industry provides a particular opportunity to work with businesses in that sector to encourage a shift away from disposable 'fast fashion' products and towards longer-lasting clothes. This is discussed further in the section: At Work.

Objectives

Our objectives for consumer choices and waste* up to 2023 are:

1. Raise public awareness of the climate impact of different choices when buying or disposing of things, and ways to reduce the impact. Include areas with big climate impacts such as: food, electrical products and clothes.
2. Continue to introduce more locally sourced ingredients into school meals** to reduce carbon emissions from 'food miles'. Introduce more menu choices which are free of meat, egg and dairy produce, in consultation with pupils and parents.***
3. Reduce carbon emissions from 'food miles' by increasing local growing and raising awareness of the impact of air-freighted food.***
4. Support an increase in the number and impact of reuse and repair schemes for household items.
5. Work with Biffa Leicester to increase participation in current recycling services, including the orange bag scheme and garden waste service, and to improve segregation of recyclable items by households.
6. Work with BIFFA Leicester to explore opportunities to reduce carbon and air pollution emissions from the collection, processing and onward transport of Leicester's household waste under the current contract.
7. Carry out research and begin planning for improvements to household waste services, in line with the aims of the new Resources and Waste Strategy for England including a major increase in recycling. Identify options for reducing the climate impact of household waste, including its collection and processing, as part of this.

8. Ensure that future land use policies and allocations align with any need for facilities to enable a substantial increase in reuse, recycling, composting and the treatment of food waste to produce biogas for low carbon energy.
9. Lobby for national measures to provide stronger incentives for reuse and repair, and to strengthen the market for recyclable materials – particularly plastics.

* Refer to the sections At Work and The Council for objectives covering businesses' and the council's procurement and waste management.

** Refer to the section on The Council for objective covering catering for council events.

*** Refer also to the Food Plan.

At work

This section covers the impact of employers in the city, including businesses, public services such as the NHS, Police and Fire Services, further and higher education, and voluntary and community organisations. The impacts of the council and schools are covered separately in the section on The Council.

Climate impacts

Employment activities in the city are responsible for carbon emissions from a number of sources, including:

- heating, cooling and power used to run offices and other buildings
- energy used in manufacturing processes and to operate equipment
- fuel used by fleet vehicles, and in business travel and commuting
- procurement impacts through the supply chain, caused by the extraction and processing of raw materials, manufacturing of components and other goods needed, and delivery of those goods to the employer
- the generation of waste, leading to emissions from its collection and disposal or treatment.

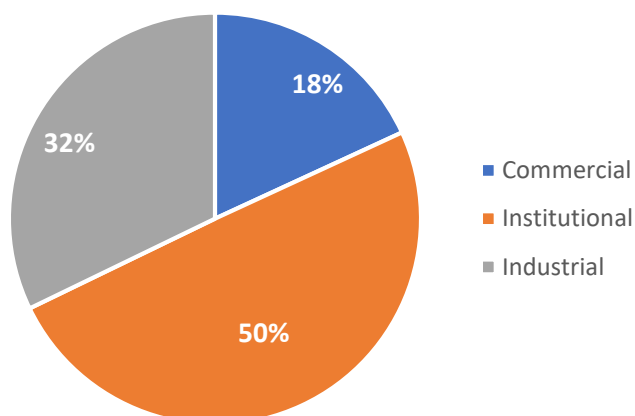
Looking at the first two sources on this list, emissions of carbon dioxide (CO₂) from employment sites in the city make up 42 per cent of Leicester's CO₂ emissions from energy use²⁵. This represents the single biggest source. The total emissions from employment sites have fallen by 48 per cent since 2005 – with most of this reduction being the result of 'greener' electricity from the grid.

Government figures don't give a breakdown of which types of employment site are generating the most emissions, but those available from a project called SCATTER²⁶ show that institutions such as health services, schools, further and higher education and local government account for about half, as shown below in Figure 10.

²⁵ From figures published by the Department for Business, Energy and Industrial Strategy (BEIS) for 2017 – the most recent available at the time of writing.

²⁶ SCATTER is a reporting tool developed by Anthesis in collaboration with the Department for Business, Energy and Industrial Strategy (BEIS) and other partners. It uses a wider range of data sources to provide more comprehensive carbon emissions data for each local authority than is otherwise available: <https://scattercities.com/>

Figure 10: Breakdown of Leicester's carbon emissions from non-domestic buildings



This highlights the importance of large public institutions such as the council leading by example, but also underlines the need for carbon reductions from businesses too.

Carbon emissions from travel and transport by employers, and from commuting, are included in the Travel and Transport section, while emissions caused by disposal of waste from organisations are discussed in the Consumer Choices and Waste section.

Figures are not available for the supply chain climate impacts of employers overall in the city. However, work done by the council to look at its own supply chain impacts²⁷ suggest that they are likely to be at least as important as those from buildings, production processes and transport.

Opportunities to take action

The council's ability to effect change in the business sector is perhaps more limited than in some other areas. However, we do have influence through our economic development and business support activities, as a regulator, as a landlord to many local companies and by prioritising climate protection when procuring goods and services ourselves.

An important area where we are already making a difference is in support for climate action by small and medium-sized enterprises (SMEs)²⁸. Over 99 per cent of businesses in the city are SMEs and, unlike many big companies, they don't generally have the resources to employ their own environmental expertise. Many SMEs are part of the supply chain for bigger companies, who will increasingly be expecting their suppliers to offer low carbon, 'sustainable' goods and services. Companies that can't respond to these changing customer expectations could lose business. The council has a successful track record in securing EU funding to provide advice and grants to SMEs to help them cut their energy bills and carbon emissions. This is something we can look to continue doing post-Brexit if UK Government funding is made available to replace EU funding.

²⁷ Estimates of emissions caused by goods and services we procured in 2011-12 suggested that they could be more than double our emissions from our direct energy and fuel use.

²⁸ SMEs are businesses employing less than 250 people.

A particular group of SMEs we could look to work with is those who are tenants of our business centres, shop units and managed workspaces. We have over 350 tenants across the different units in our Corporate Estate.

We also have a lot of contact with local businesses through various council departments and the Leicester and Leicestershire Enterprise Partnership (LLEP), and we've used Leicester's Climate Conversation to build links with major local organisations. These links provide us with the opportunity to engage with organisations and to work in partnership with them. As part of our strategy for widening the response to the Climate Emergency we will also be encouraging organisations of all types and sizes, including businesses, to create their own action plans to address the Climate Emergency, providing guidance for smaller organisations on how to do so and setting up an online space to share these plans.

Although we don't have a breakdown of which types of business are generating the most emissions, we know that food and drink, textiles and other manufacturing, as well as logistics/distribution are all important sectors. These all have a significant climate impact, through energy used in manufacturing processes, the impact of raw materials used²⁹ and/or through fuel used by fleets, for example. These are sectors we will look to work with to reduce emissions from businesses.

There is a particular opportunity in the textiles manufacturing sector. Leicester and Leicestershire have a rich textiles heritage and the second largest concentration of textile manufacturing firms in the UK, employing over 10,000 people and representing £500 million of value to the local economy. The sector suffers from a negative image in terms of ethical practice, and this is seen as a key barrier to future success³⁰. There is therefore an opportunity to help textiles businesses reduce carbon emissions and other environmental impacts in their supply chain and operations as part of a broader approach to supporting good ethical and sustainable business practice. We will seek to mitigate the negative impacts of fast fashion, whilst supporting innovation and the development of ethical, sustainable supply chains.

Looking at our wider strategy for supporting economic development, an important task in the next few years will be to make sure that our approach is aligned with the changes we know will need to happen in the economy for Leicester and the UK to become carbon neutral. These changes will create economic opportunities, which Leicester businesses will need to be ready to take advantage of. They could also pose a challenge to certain sectors and a threat to businesses that aren't geared up for them. Our economic strategy will need to identify all these issues and identify what we can do to support a strong economic future in a carbon-neutral world. The immediate priority will be to ensure Leicester achieves a 'green economic recovery' from the COVID-19 pandemic. This will include supporting job creation and skills development in key sectors such as housing retrofit, modern, low carbon construction and sustainable mobility and transportation.

²⁹ Global textiles production, for example, generates more greenhouse gas emissions than international flights and maritime shipping combined. Source: Ellen McArthur Foundation, A New Textiles Economy: Redesigning Fashion's Future (2017)

³⁰ 47 per cent of businesses responding to consultation for the LLEP's Sector Growth Plan for the textiles manufacturing identified 'negative image' of the sector as a barrier to growth, making this the most commonly identified factor in the survey.

Finally, we have an important opportunity to use our own procurement – often from local companies – to lead by example and to support firms that are offering climate-friendly, sustainable goods and services. This area is covered in the section on The Council.

Objectives

Our objectives for supporting employers and their staff to address the Climate Emergency up to 2023 are:

1. Seek to influence national and sub-regional economic strategy, and any associated funding, to prioritise the achievement of a carbon-neutral, climate-adapted economy including 'green job' creation. Ensure that our own economic strategy and action plans do the same.
2. Work with partners including local universities to help small and medium-sized enterprises (SMEs) address the Climate Emergency. Provide information, advice and, where possible, funding support or financial incentives towards:
 - energy and water efficiency
 - resource efficiency and waste (circular economy)
 - renewable energy and low carbon technologies, including energy storage
 - sustainable product and service development, and low carbon/sustainable supply chains
 - sustainable, low emissions business travel and employee commuting.
3. Support the many SMEs who are tenants in our business units, shops and managed workspaces to address the Climate Emergency, including through measures to improve the properties*.
4. Support fleet operators to reduce their carbon and air pollution emissions.
5. Enforce planning policies to ensure that new employment sites are designed and operated to enable sustainable and low-emission commuting, business travel and fleet operation.
6. Work with partners to ensure that employment skills training and vocational education programmes respond to changes in employers' needs as the economy shifts to deliver low-carbon, sustainable products and services as part of a 'green economic recovery'.
7. Engage with businesses and organisations of all types and sizes to encourage them to develop their own plans to address the Climate Emergency and share their experience and knowledge.

Note: we will also use our influence as a customer of both local and other suppliers to increase the demand for low-carbon, sustainable goods and services as a way of positively influencing the economy. Refer to the section on The Council for details of our procurement objectives.

* Measures to improve managed workspaces (those where we provide the heating, hot water, electricity and waste collection as part of the tenancy) are covered by the objectives in the section on The Council.

Land use, green space and development

Climate impacts

Leicester is a compact city, with a growing population. Existing housing and employment sites are responsible for 75 per cent of the city's current carbon dioxide (CO₂) emissions from energy use³¹ and more homes and employment floorspace are projected to be needed between 2019 and 2036³². This will add significantly to emissions unless new development can become carbon neutral. The potential increase will not only come from the energy needed to run the buildings, but also from the impacts of making and transporting the construction materials and products. This is referred to as the 'embodied carbon emissions' of the buildings.

In addition to extra emissions from heating and powering these new buildings, and from their embodied carbon emissions, their increase, and that of Leicester's growing population, could bring more carbon emissions from transport too. This is discussed in the Travel and Transport section.

Aside from the impact of development, land itself plays a number of very important roles, both in limiting carbon emissions and helping to adapt to the changing climate. Firstly, it stores carbon, preventing it from adding to carbon dioxide in the atmosphere. A study by the University of Sheffield³³ estimated that Leicester's soils are storing 1.58 million tonnes of carbon, while its trees and other vegetation store another 0.23 million tonnes. To put this into context, it is equivalent to Leicester's total emissions from energy use over a 17-month period. If released, this would use up over 20 per cent of the city's remaining carbon budget³⁴. Further work is needed to improve our understanding of which soils in Leicester store the most carbon, and why. It is likely that (lack of) disturbance is one of the key factors, and we also need to understand how much the type of vegetation or the management regime affects it. Of the carbon stored in vegetation, 97 per cent was found to be in trees – whose canopy covers just over 15 per cent of the city. The study confirmed that large, mature trees are by far the most important.

However, the study also found that, partly due to Leicester's compact form, with few large areas of undeveloped and open land available for mass planting, the opportunities to store more carbon through tree planting is limited compared to the reduction in emissions required to become carbon neutral.³⁵

In addition to storing carbon, trees and green spaces, as well as water bodies, play an important role in reducing the risks from the changing climate. They can help to slow down rainwater run-off after intense rainstorms, reducing the risk of flooding. They can also help to reduce the 'urban heat island effect', potentially reducing peak temperatures during heatwaves and providing shade,

³¹ From figures published by the Department for Business, Energy and Industrial Strategy (BEIS) for 2017 – the most recent available at the time of writing.

³² Based on the Housing and Economic Development Needs Assessment (2017).

³³ The study was part of a project called 4M which investigated the carbon footprint of Leicester, along with possible measures to reduce it. 4M involved a number of universities including De Montfort University and Loughborough University, as well as Sheffield.

³⁴ Refer to the earlier section: Playing our part

³⁵ Sheffield University estimated that if all the available land in the city (15 per cent) was planted with a combination of woodland and short rotation coppice, the equivalent of 279,000t CO₂ would be absorbed over a 25-year period, or an average of 11,160 tonnes per year. That represents 0.86 per cent of the reduction Leicester needs to make to become carbon neutral.

which can help prevent buildings from overheating. These positive impacts are difficult to quantify, but the extent of Leicester's network of green spaces and water bodies, and its tree cover, is undoubtedly a very important asset in protecting the city from climate change.

Opportunities to take action

As the Local Planning Authority for the city, and its biggest owner and manager of land and trees, the council is well placed to respond to the Climate Emergency through decisions around land use, development and management of trees and open space. At the same time, we also have a duty to plan for and enable development to take place to meet the needs of the growing population and the economy too. This means that an approach is needed that supports a sustainable form of development, enabling growth while working rapidly towards carbon neutrality and increasing the city's natural resilience to climate change. Working with the local districts and county council on plans and policies will also be a vital part of this work, as will working with organisations such as the Leicester and Leicestershire Enterprise Partnership (LLEP), as many of these issues and opportunities extend beyond our own boundaries.

A key opportunity is the preparation of a new Local Plan, setting policies and allocations of land that will set the direction for development in the city up until 2036. The government has also been consulting on reforms to both building regulations and the planning system, most recently in its White Paper 'Planning for the Future'. The full implications for climate change have not been set out at the time of writing, but these changes are likely to affect the ability of local planning authorities to set policies which mitigate and adapt to a changing climate. The council will need to take into account future reforms once these apply.

Currently, the policies in the plan must be consistent with the government's adopted National Planning Policy Framework and comply with existing planning and other legislation. We cannot therefore place requirements on development that are so onerous as to make it unviable to build. So, a balance must be struck between ensuring that new buildings are designed and built to generate the lowest possible carbon emissions, and to be futureproofed against the effects of climate change, while not stifling development by making it unprofitable. As developers become more experienced at building ultra-low carbon homes, the extra costs of this should continue to reduce – making it easier to achieve both aims.

At the time of writing, a number of the larger sites being put forward for possible inclusion in the new Local Plan for housing or employment development are owned by the council. If they are accepted when the draft plan goes to public examination, this potentially gives us the opportunity to seek agreement through the sale of the land to developers and, subject to deliverability, for the development on them to be lower-carbon than national building standards or local planning policies require as a minimum. This idea was the most strongly supported amongst our proposals by the public during the Climate Emergency Conversation.

Another opportunity for the council to lead by example is in the low-carbon standards it achieves for its own developments. Over the next few years, we will be aiming to create 1,500 more council, social and extra-care homes. Many will be newly built, while the rest will be existing houses bought and refurbished. We also expect to be building extensions to more of our schools and new business centres and managed workspaces for small businesses. The idea of leading by

example with our own construction projects was also one of the most strongly supported by the public during the Climate Emergency Conversation and is something we will pursue.

The council manages a large area of public open space, including 107 hectares of woodland and 150,000 other trees. We spend around £2 million each year on planting, protecting and managing our trees in line with our Tree Strategy, and have a policy of replacing any trees felled with more than one new tree. In addition, as the Local Planning Authority we have a statutory role in protecting trees and green spaces, including through the 500 Tree Preservation Orders (TPOs) in place. We also have a number of programmes involving local volunteers, who help to maintain and enhance our green spaces.

These roles bring with them opportunities to manage this 'green infrastructure'³⁶ to maintain and increase its role in reducing flood risk and the impact of heatwaves and drought, alongside its other roles in supporting biodiversity and recreation. This includes maintaining the existing tree stock and green spaces in healthy condition and planning for opportunities to extend it. Examples include the use of natural structures and vegetation to reduce water flow and hold back water rather than using engineered solutions. The importance of working to maintain a healthy tree stock has come into sharp focus recently with the spread of ash dieback and other tree diseases. We expect these diseases to be a big threat to Leicester's tree stock. As the UK climate continues to change, it is likely that some tree and other species will come under greater stress – putting biodiversity at risk. Where this happens, we will need to take steps to address it through Leicester's Biodiversity Action Plan.

In addition, opportunities for new tree planting and creation of public open space and wildlife habitat will come through development. New planting and green space improvement or creation already takes place through 'section 106 agreements' in which developers contribute to the costs of new infrastructure needed as a result of extra housing. Under current government proposals in the Environment Bill, development in the future is also expected to have to provide a 'net gain' in biodiversity compared to what was on the land beforehand. Where this biodiversity net gain (BNG) can't be achieved on the development site itself, the developer is expected to pay for it to happen elsewhere. We expect this to lead to opportunities for more tree planting and habitat creation in Leicester. The council will prepare for this by developing proposals for planting on the key potential housing sites it owns itself, and by identifying suitable locations for planting elsewhere in the city, including in existing public open spaces. We will have an opportunity to make sure that these plans try to maximise the benefits for adapting the city to climate change alongside other benefits, including absorbing carbon.

Another major area of responsibility and opportunity for the council is around sustainable drainage and flood prevention. As a lead local flood authority, the council is responsible for producing the Local Flood Risk Management Strategy and for working with partners, including the Environment Agency and Severn Trent Water, to reduce flood risks. In addition to managing and maintaining our own drainage infrastructure, we help to develop new infrastructure. Where possible, this favours 'green infrastructure' based on natural flood prevention and sustainable drainage. We also assess planning applications to ensure that proposals for development will not create additional flood risk. Over the next few years we will have opportunities to carry out

³⁶ The term 'green infrastructure' means the networks of green spaces in an area, which fulfil multiple different functions such as providing floodwater storage, wildlife habitats, areas for recreation and more.

further flood protection schemes on the ground, as well as increasing the level of advice and support we can offer to developers for the design of effective sustainable drainage systems (SuDS), with better follow-up to ensure that SuDS required as part of planning permissions are properly implemented and maintained when developments are built.

Objectives

Our objectives for land use, green space and development up to 2023 are:

1. Encourage and, where possible, enforce better low-carbon standards for all new development, based on the energy hierarchy.

(We think this needs to happen through a major improvement to national standards via the Building Regulations, to give a level playing field, but we will do as much as we can via new local planning policies if national standards remain inadequate. Please refer to the action plan.)
2. Achieve as close as we can to an in-use carbon-neutral standard for development on land released by the council*, based on the energy hierarchy. Also achieve a reduced carbon footprint from construction materials.
3. Support opportunities to expand the role of heat networks where they can efficiently provide affordable, low-carbon heat to homes or businesses. Also reduce carbon emissions from the existing district heat network.
4. Support proposals for renewable energy generation and storage where they comply with planning policies.
5. Improve our understanding of how trees, green spaces and water bodies in the city can help reduce the impact of heatwaves and the risk of flooding. Use this knowledge in decisions about tree planting and retention, and green space creation and management.
6. Apply planning policy and encourage best practice 'sustainable drainage schemes' (SuDS) to ensure that new development helps to reduce flood risk.
7. Implement further schemes on council land to reduce the risk of flooding, for example by creating areas where floodwaters can be held away from homes, businesses and infrastructure and contribute to biodiversity and amenity.
8. Implement the Tree Strategy – managing the stock to maintain tree health, replace trees lost, address threats such as ash dieback as far as possible and increase tree cover.
9. Address threats to biodiversity as a whole, and to individual species, from climate change through the Biodiversity Action Plan.
10. Improve our understanding of carbon storage in soils and different habitats and the risks of its loss. Use this knowledge to identify the implications for land use, green space and development policies and practices, and to review management and maintenance regimes for publicly owned land.

* Refer to the section on The Council for objectives covering the development of new council operational facilities, including schools.

The council

This section covers the impact of the council's own activities on climate change. It also covers the risks to those activities from the changing climate.

The running of schools is included here because many school buildings are still owned and maintained by the council, and we work with almost all schools to help them address climate change. However, more than half of city schools are now owned and/or maintained independently of the council by multi-academy trusts or as free schools. Figures for emissions from schools therefore include estimates for some schools.

Climate impacts

The council causes carbon emissions³⁷ through our use of energy and fuel to heat and power our buildings, run our vehicles and machinery, provide street lighting and traffic signals, and for staff to travel to appointments. In the ten years since 2008-09 we have reduced these emissions by 45.5 per cent. The actions to achieve this included:

- replacing sodium street lighting with LEDs and introducing a new control system to allow us to operate them more efficiently
- reorganising our office accommodation to reduce the space we need and the associated heating and lighting, while refurbishing some of the remaining offices to make them more energy efficient
- reducing our fleet mileage and starting to introduce electric and hybrid ultra-low-emissions vehicles.

Our efforts have also been helped a lot by electricity becoming 'greener' year on year. So, for each kilowatt-hour we use, the carbon emissions were 43 per cent less in 2018-19 than in 2008-09.

³⁷ Figures used in this section cover both carbon dioxide and other greenhouse gases. They are all expressed as tonnes of 'carbon dioxide equivalent' (CO₂e). We have referred to them as 'carbon emissions' in the text.

Figure 11: Changes in the council's carbon emissions between 2008/09 and 2018/19

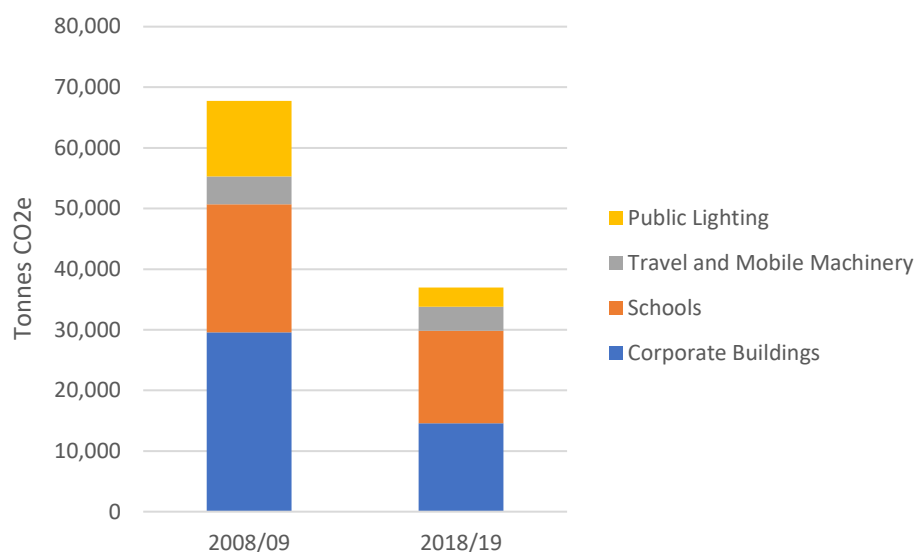


Figure 11 shows how our emissions have reduced and illustrates that school buildings and the council's corporate buildings are by far the biggest causes of our remaining emissions. School buildings emissions have reduced more slowly than corporate buildings, partly because growing pupil numbers have required more or bigger schools and partly due to growing use of IT in schools.

In addition to our direct energy and fuel use, the council also causes carbon emissions and other climate impacts indirectly, through the waste we generate, the manufacture and delivery of the goods and raw materials we use and the emissions caused by suppliers in providing services to us. We cannot accurately measure these extra emissions, but past estimates suggest they could be more than double our emissions from our direct energy and fuel use³⁸. For this reason, it is essential we work to reduce them too.

As well as adding to climate change through our carbon emissions, the council's buildings, land, infrastructure and services are all potentially at risk from a changing climate too. For example, as heatwaves become more frequent and severe, our buildings could be at risk from overheating – affecting service users and staff. Similarly, more intense rainfall puts infrastructure under greater pressure and prolonged dry periods could present a risk too.

Opportunities to take action

While the council's and schools' emissions from energy and fuel use represent only just over 3 per cent of the city total, we believe it is very important to reduce them in order to lead by example. This is something that the public thought was important too during Leicester's Climate Emergency Conversation. We are committed to becoming carbon neutral as a council by 2030 or sooner, to match our ambition for the city.

³⁸ We estimated the emissions from goods and services we procured in 2011-12, based on the amount spent per category. We found that health and social care services and construction were causing the most emissions, followed by sewerage and waste services (excluding the household waste service).

Figure 11 clearly shows that our biggest opportunity for reducing emissions from our energy and fuel use is in our own operational buildings and in school buildings. We will need to increase investment in measures such as insulation, heating controls, LED lighting, efficient, low-carbon heating systems and solar PV panels. This investment will need to be guided by a 'roadmap' for achieving a carbon-neutral estate, with clear targets for levels of carbon reduction to achieve along the way. We also expect there will be more opportunities for rationalisation of our use of offices to deliver the same level of services from less floor space – cutting energy bills and emissions further from our back-office activities.

Where we need to extend buildings or construct new ones, we have a key opportunity to lead by example and show what can be done. We already have some successful examples of implementing low-carbon and renewable energy measures in previous projects. We now have an opportunity to embed climate change into our procedures for designing, approving, implementing and monitoring the success of our capital construction projects, so that a full appraisal of the carbon reduction and climate adaptation opportunities is provided for every project.

As academies and free schools now make up more than half of city schools, the onus will increasingly be on their governing bodies to develop their own plans to address the Climate Emergency. Nonetheless, we can continue to work with them through our Eco Schools programme, which has supported over 50 schools to achieve a Green Flag – currently the highest of any local authority area in England³⁹, and our BESS Energy⁴⁰ service.

In terms of our fleet, reducing prices, improving battery range and availability of more Ultra-Low-Emissions Vehicle (ULEV) models will widen opportunities to decarbonise our fleet. There will also be more opportunities to reduce our business travel journeys and cut emissions through human resources policies that support more 'agile working' by staff. This includes greater use of video-calls instead of travelling to meetings, as well as providing more 'touch-down' desk spaces across our estate for staff to work in between site visits – reducing the need for back-to-base journeys.

Looking at the climate impact of our procurement, we already have a Social Value Charter and guidance on 'sustainable procurement', which staff use to seek lower-carbon goods and services for the council. We expect low and zero-carbon options to become more widely available, giving us progressively more ability to drive down the carbon footprint of what we buy. We will need to develop ways to monitor and report on the carbon reductions being achieved.

An important area of procurement in terms of climate change is food, and by far our biggest opportunity here is through school meals. Our Education Catering Service has achieved the Soil Association's Food for Life Silver Award, which includes requirements for a percentage of ingredients to be locally sourced – cutting emissions from 'food miles'. The science tells us that we could have the biggest impact by reducing meat, dairy and eggs, but the public raised concerns during the Climate Emergency Conversation about the council appearing to 'tell people what to do'. Vegetarian and vegan options are already available in all schools, and we think our best approach would be to work through our existing Food for Life and Eco Schools programmes to

³⁹ <https://news.leicester.gov.uk/news-articles/2020/august/52-schools-earn-recognition-for-environmental-work/>

⁴⁰ BESS (Built Environment Services for Schools) is a traded council service available to local schools, which provides monitoring of water and energy use and carbon emissions, as well as support and advice on reducing them.

raise the issues with pupils, their parents, school staff and governing bodies and consult with them on options for more plant-based meals.

Objectives

Our early objectives (up to 2023) for working towards the council becoming carbon neutral, and for adapting our services and buildings to the changing climate are:

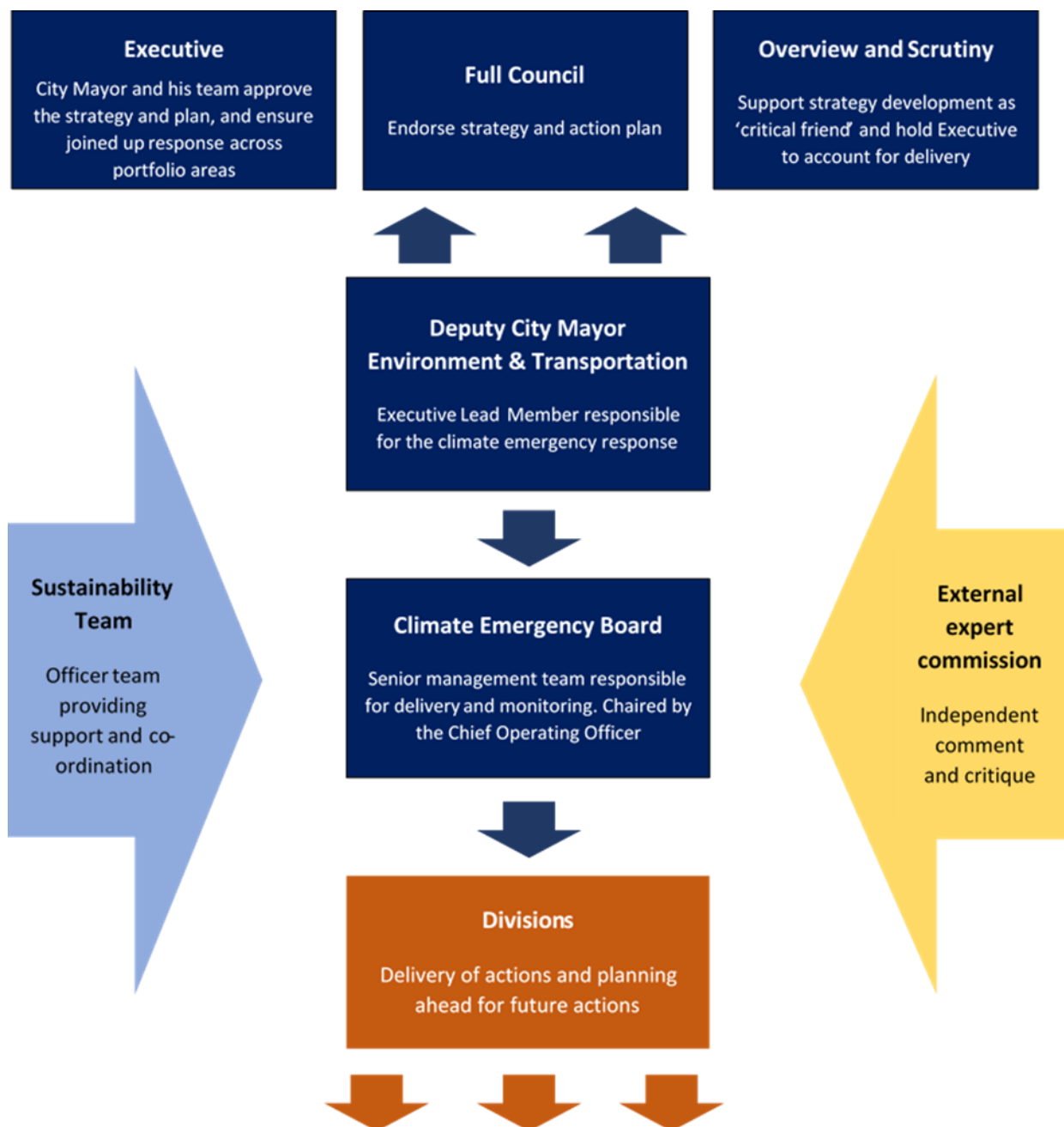
1. Identify how the council can become carbon neutral as quickly possible in relation to its buildings, travel, fleet and public lighting, and plan accordingly.
2. Reduce carbon emissions from our operational buildings* and public lighting by investing in energy efficiency measures and low-carbon heating systems, and rationalising our council accommodation and workspace.
3. Increase our generation of renewable energy and consider opportunities for storage.
4. Work with schools to reduce their carbon emissions through investment in our own school buildings, help with external funding applications and support for energy saving behaviour change programmes.
5. Reduce carbon emissions from our business travel and our transport services through our policies, procedures, guidance to staff and decarbonisation of our fleet.
6. Reduce the climate impact caused by goods and services we buy, and from our construction projects, through our procurement specifications and tender evaluation. Identify how we can measure and monitor the results.
7. Reduce the climate impact of our waste by applying the waste hierarchy – reduce, reuse, recycle/compost – and low-carbon energy generation.
8. Continually improve our working practices and provide regular communication and guidance to our staff to minimise our climate impact.
9. Taking account of previous work, maintain an up-to-date understanding of the risks to our customers, services and assets from the changing climate, and develop our resilience measures accordingly.

* Our operational buildings include our offices, depots and community facilities. We also own buildings that we rent to businesses and organisations. These are covered in the At Work section.

Delivery, Monitoring and Reporting

Adoption, implementation and review of this strategy, including delivery of the accompanying action plan and progress towards our carbon-neutral, climate-adapted aspirations, will be managed and overseen as shown in the diagram below:

Figure 12: Governance arrangements for our Climate Emergency response



Progress in implementing actions, reducing emissions and increasing resilience to climate change will be monitored, with regular updates brought to the Climate Emergency Board and the Deputy City Mayor responsible for Environment and Transportation. In addition, the External Expert

Commission will be periodically reconvened to provide an independent view on progress, latest scientific thinking and new opportunities to address the Climate Emergency. In the interests of transparency, the Commission's membership and advice to the council will be published.

A progress report will be published annually presenting the latest carbon emissions figures for Leicester as a whole and for the city council's own emissions, along with discussion of what they mean for progress towards our carbon-neutral ambition and depletion of the 'carbon budget' figure produced by the Tyndall Centre for the city. It will also include a summary of actions taken during the year and their impact. Due to the two-year time lag in the figures for city-wide carbon emissions being published by the government, we will aim to include additional, locally-measurable, indicators of progress in our reports to give a more up-to-date picture of emissions reduction.

The implications of executive decisions for addressing the Climate Emergency will continue to be set out in reports, and further measures will be developed to embed climate change considerations in the council's systems and processes, a number of which are set out in the accompanying Climate Emergency Action Plan.

Broadening Leicester's Response to the Emergency

Developing this strategy and the accompanying action plan for the council is only the first stage in what we know needs to happen. The scale and speed of change that's necessary will require a much broader response involving other organisations and individuals across the city too, as well as wider co-operation across Leicestershire, regionally and nationally. The need for co-operation across administrative borders was highlighted by a number of people during the Climate Emergency Conversation, and also by the External Expert Commission.

The Conversation opened up many new lines of communication, and we will now look carefully at how we can build a wider response through some form of partnership or forum. As a first step, we are encouraging other organisations in the city, of whatever size, to create and publish their own action plans to address the Climate Emergency. We will provide some simple guidance to help smaller organisations create their plans and an online space to acknowledge and publicise what others are doing – alongside news of our own progress.

We will also look at how we can best enable productive discussion, co-operation, joint action and sharing of knowledge and expertise to flourish. We will report back on the steps taken in our first annual report.

Glossary

Term or Phrase	Explanation
Adaptation	In relation to climate change, adaptation means making changes to human or natural systems in response to the expected impacts on them, to avoid or reduce negative impacts and take advantage of any potential benefits.
BEIS	The Department for Business, Energy and Industrial Strategy. The department of the UK Government responsible for the UK's policies and action on climate change.
Biodiversity	The biological variety of species of plants and animals that can be found in a habitat or area. It can also refer to the diversity of species, habitats and ecosystems across Earth as a whole.
Carbon budget	<p>The maximum amount of carbon emissions that can be emitted in total in a geographical area or by an organisation, to meet a target for limiting global heating.</p> <p>A carbon budget is different from a target for reducing the annual rate of emissions, which does not specify how much can be emitted in total, only the maximum yearly amount.</p>
Carbon emissions	In this document this term refers to emissions of the six main greenhouse gases, of which carbon dioxide is the most widely emitted by human activity. Other greenhouse gases include methane and nitrous oxide.
Carbon footprint	The greenhouse gas emissions produced by a person, group or organisation over a set period, usually a year. For example, for a household this would include annual emissions from all energy use, travel, waste and consumption.
Carbon-neutral	A carbon-neutral organisation, area or system is one that produces no net emissions of greenhouse gases. This usually means reducing emissions as much as possible and balancing out any remaining emissions through carbon offsetting or by generating a surplus of renewable energy.
Carbon offsetting	The process of compensating for greenhouse gas emissions from one source by reducing emissions from a different source or removing them from the atmosphere. This is often done by paying other organisations to carry out these projects.
Circular economy	A circular economy is an economic system aimed at eliminating waste and pollution, and achieving the continued use and reuse of resources.

Climate Emergency	A declaration by an organisation or group which says that they recognise climate change is an emergency situation, and that tackling it requires urgent action.
Decarbonisation	<p>A reduction in greenhouse gas emissions produced by a process or activity.</p> <p>For the UK's electricity system decarbonisation is being achieved by an increase in the use of renewable energy sources, such as wind and solar power, and a reduction in the use of coal-fired power stations.</p>
District heating	<p>A system that uses a network of insulated pipes to distribute heat produced by a central heat source to a number of buildings in an area.</p> <p>District heating can be more energy efficient than generating heat in each building individually.</p>
Embodied emissions	Greenhouse gas emissions produced when a product is made, or a service is provided. For example, this could include emissions from the energy used to gather raw materials, manufacture a product and transport it to the consumer.
Energy hierarchy	A way of showing the most impactful approaches to reduce energy use and therefore greenhouse gas emissions. The hierarchy starts with preventing energy use altogether. It is commonly used to guide the design of energy efficient, low-carbon buildings.
Food miles	<p>The distance food has been transported before it reaches a consumer.</p> <p>Food is often transported by fossil fuel-powered ships, planes, trains and lorries, which generate greenhouse gas emissions.</p>
Fuel poverty	A person or household is described as living in fuel poverty when they cannot reasonably afford to heat their home to a safe or comfortable level.
Global heating	An effect caused by greenhouse gas emissions, which is raising global average temperatures and causing dangerous climate change.
Greenhouse gases	Gases that trap more of the sun's heat in Earth's atmosphere, causing global heating. The greenhouse gases being emitted by human activity include carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O) and 'fluorinated greenhouse gases' (found in air conditioning, fridges and some aerosols).
Green infrastructure	The networks of green spaces in an area, which fulfil multiple different functions such as providing floodwater storage, wildlife habitats, areas for recreation and more.
Heat pump	A device that uses a small amount of energy to transfer heat from one place to another. Fridges, freezers and air conditioning all use a heat pump to keep a space cool, but heat pumps can also be used to heat a space by extracting heat from the outside air, the ground or a nearby water body such as a river.

kW	Kilowatt. A unit of power, equal to 1,000 Watts, which shows the rate of electricity consumption by a circuit or device. The higher the 'wattage' something has, the more energy it will use per hour.
LEDs	Light emitting diodes. A type of lighting that is much more efficient than traditional lightbulbs and uses much less electricity.
LLEP	Leicester and Leicestershire Enterprise Partnership. A local strategic organisation led by the government and local business leaders, which is responsible for driving local economic growth.
Local Plan	A plan for future land use and development, produced by the local planning authority in consultation with the community. It guides decisions on planning applications to determine whether individual proposals for development in the city are acceptable.
Methane	A greenhouse gas that is emitted by livestock farming (principally of cattle and sheep), the breakdown of organic waste (in certain conditions), the oil and gas industry and some natural landscapes.
National Grid	The operator of the UK's network that provides electricity and gas to almost all buildings in the country.
Paris Agreement	An international agreement signed by nearly 200 countries in which they agreed to reduce their carbon emissions by enough to limit the increase in global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the increase to 1.5 °C.
Renewable energy	Energy from sources that cannot be 'used up', such as wind and sunlight. These sources of energy have much lower carbon emissions than non-renewable fossil fuels such as coal and oil, which must be burned to release their energy – generating carbon dioxide.
Retrofit	Installing improvements, usually to a building, after it has already been built. The term is often used in connection with the fitting of extra insulation and other energy efficiency measures to buildings.
Smart meter	A device which records energy consumption and sends the information directly to the supplier, as well as the user. Smart meters can be used to monitor energy consumption and identify ways to reduce it.
Smart energy	An approach using technology and so-called 'smart' systems such as energy storage and demand monitoring to manage energy use in the most efficient way possible.
SME	Small or medium-sized enterprise. A business with less than 250 employees and, by the EU definition, with an annual turnover under €50 million (around £44 million).
Social value	Within procurement, achieving social value means securing wider social, economic and environmental benefits when purchasing goods and services.

Solar PV panel	Solar photovoltaic panel. A technology which converts sunlight into electricity using panels which are often placed on top of buildings.
Sustainability	Meeting the needs of the present without compromising the ability of future generations to meet their own needs, for example due to the impacts of climate change caused by our current lifestyles.
SuDS	Sustainable Drainage System. A rainwater management system that uses natural processes to reduce flood risk. SuDS are often also designed to provide habitats for nature.
ULEV	Ultra-low-emissions vehicle. Defined by the UK Government as a vehicle that emits less than 75g of CO ₂ per kilometre travelled.
Urban heat island	A term for the effect where cities experiences higher temperatures than surrounding areas. This is because the building and paving materials used in cities absorb more of the sun's heat and then release it – heating up the air.