

CARBON NEUTRAL ACTION PLAN

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1. Foreword

Today we face a global climate emergency which requires us to think beyond 'business as usual'. But while central government must play a vital role we recognise that many of the solutions will happen at the local level. As a District we need to act now to reduce direct and indirect carbon emissions to net zero. We need to prepare and adapt to deal with the inevitable impacts of climate change. We recognise that achieving our vision will not be easy. There are entrenched market and wider forces that will support existing fossil-fuel dependent, consumption-based systems. We will need to show strong leadership to create opportunities for all to participate in the benefits of change with its costs shared fairly.

Climate change increases the likelihood of extreme weather events, including floods, droughts and heatwaves and the health impacts are likely to be significant. In recent years there have been increasing public calls for action on climate change and the environment, be that in terms of reducing the use of single use plastics, improving air quality, encouraging the use of low emissions vehicles and improving energy efficiency.

Now more than ever we must look forward rather than aiming to get back to normal and be ready to take the opportunities emerging from a 'green recovery'. The collective response to Covid 19 has demonstrated our ability to take significant and far reaching steps to tackle a global threat. It has shown us how we can innovate and deliver our services differently. We will use what we have learnt from the pandemic to inform our climate strategy and action plan going forward. The lockdown has brought about significant benefits to air quality and the environment and has demonstrated how behaviours can be dramatically changed through effective communication and leadership. We will take advantage of these and use this window of opportunity to shape our response to the global climate emergency.

We have an exciting opportunity to address the challenge of climate change whilst also bringing about numerous co-benefits; reducing inequality, delivering sustainable new homes, creating a district with more green spaces and places for our children to play, cleaner air and jobs and opportunities for all. This is a complex problem. We know that no single organisation alone can deliver the scale and pace of change we need. So we will engage widely to understand how we can work together to achieve the ambitions set out in our Climate Change Strategy. This action plan gives Blaby District Council a focus and direction and provides the framework from which we can take responsibility and work together to transform the district.

Cllr Terry Richardson Leader Blaby District Council

Cllr Sharon Coe Portfolio Holder for Health Wellbeing and Regulatory Services

2. Introduction

This is the Council's Carbon Neutral Action Plan (CNAP) setting out how we intend to cut our Carbon Emissions and become carbon neutral. It was adopted in August 2020 and is intended to be reviewed and updated every year.

In line with the UK Government's commitments under the Climate Change Act¹, this Action Plan is the first major step we are taking to deliver our commitment to achieving net-zero carbon emissions across the Council's operations by 2030 and carbon neutrality across the district by 2050 if not sooner. This plan identifies where our current emissions come from and identifies many potential carbon reduction measures to increase our chance of staying within our carbon budget and meeting these targets. We are committed to working with the whole district to reduce emissions and there is an appreciation that far more resource and investment will be required to implement many of the actions and reach our targets.

The plan is not a fixed or definitive path to carbon neutrality as there are likely to be unpredictable local and national developments in the future that will influence our actions. To ensure the action plan adapts to such changes and remains valid over time, it will be reviewed on an annual basis. This will allow us to take into account the latest research and funding opportunities, incorporate the new technologies and respond to new regulations as they arise. This flexible approach will allow us to learn from previous actions and enable new partners and stakeholders to contribute. It will be vital to maintain involvement from citizens, businesses and organisations across the district to help in the development and implementation of actions.

Blaby District Council is committed to taking action to reverse the trend of increasing consumption of natural resources. If everyone on Earth lived as the average British or European citizen does, we would need nearly three planets' worth of resources to sustain us². This means, on average, each of us is using too much of the world's resources to produce the food we eat, treat the waste we produce, and generate the energy we use. This action plan sets out ways we can shape our environment and minimise our resource use to help keep our district prosperous, healthy and happy.

3. Background and evidence

It has become clear that there is now an urgency to address climate change and the science has become unequivocal. There is recognition that the impacts of climate breakdown are already causing serious damage around the world. The Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C describes the enormous harm that a 2°C average rise in global temperatures is likely to cause compared with a 1.5°C rise (IPCC, 2018). And we can see the evidence of rising temperatures ourselves. In July 2019 an all-time high temperature of 38.1°C was recorded in the UK. The latest UK climate projections (UKCP18)³ suggest that the UK climate will continue to warm over the rest of this century, and on average, will result in hotter and drier summers, warmer and wetter winters with more extreme weather events expected, though individual years may not conform to this pattern⁴.

A Global Climate Emergency

In May 2019 the UK became the first parliament to declare a climate emergency. While there is no single definition of what that means Blaby District Council recognises this fact and has pledged to become carbon neutral across its services by 2030 and to use the powers and influence it has to support partners, business and the community to become carbon neutral across the district by 2050 if not sooner. In light of this the Council has committed to a wide range of comprehensive actions to reduce our carbon emissions, with the headline being to hit the net zero target by 2030 for the Council's activities. In simple terms, this document:

- Establishes a framework for reducing carbon emissions
- Sets out what our current 'baseline' carbon emissions are (or 'carbon footprint'), so we know where we are starting from and can set meaningful targets and milestones.
- Establishes our carbon budget and identifies potential carbon reduction pathways.
- Prioritises carbon reduction measures and suggests timescales in which we intend to deliver these.
- Puts forward potential future projects, or ideas requiring further investigation before being committed to.
- A series of options for how different projects may be funded.
- The process by which this will be managed.

Carbon Neutral

In the last 50 years the average global temperature has increased at the fastest rate in recorded history and it continues to accelerate. When sunlight reaches the earth energy is absorbed on the surface and is radiated out into the atmosphere as heat. Gases in our atmosphere trap this heat in a natural process that stops our planet becoming cold and uninhabitable. This is the 'Greenhouse effect'. Simply put, human activities are carbon positive. The burning of fossil fuels for electricity, heat and transport has increased the amount of Carbon Dioxide and other greenhouse gases therefore trapping more heat and increasing global temperatures.

Carbon neutrality, or having a net zero carbon footprint means having no net release of carbon dioxide into the atmosphere. We can achieve net zero emissions by balancing carbon emissions with carbon removal (often through carbon offsetting) or simply eliminating carbon emissions altogether from those activities that release it such as transportation, energy production, agriculture, and industrial processes. Renewable energy sources such as wind, water and solar are said to be carbon neutral whereas fossil fuels are carbon positive.

There are other greenhouse gases including methane, nitrous oxide and fluorinated gases which also trap heat and contribute to climate change. When we talk about carbon emissions and carbon neutrality we also refer to these gases and their impact is accounted for in carbon dioxide equivalents (CO₂e), the standard unit for measuring carbon footprints.

PART 1

4. Our Carbon Footprint

Before we decide what we should do differently, to reduce our emissions, we need to properly understand what our current activities are emitting. This is sometimes known as working out our 'carbon footprint' which, in technical terms, is a measure of the greenhouse gases (GHGs)⁵ emitted into the atmosphere from sources in a specified area or organisation. It usually includes all relevant greenhouse gases, the most common of which is carbon dioxide (CO₂). Together with emissions of other GHGs such as methane (CH₄) or nitrous oxide (N₂O) this is measured as 'carbon dioxide equivalent' (CO₂e)⁶.

Nationwide, emissions of CO₂ make up 81% of GHG emissions, with the remainder from methane (11%), nitrous oxide (4%) and fluorinated gases (3%), when weighted by Global Warming Potential (GWP)⁷. The biggest source of greenhouse gas emissions in the UK is transport, closely followed by energy supply. To help set the wider context, this Action Plan examines both the carbon footprint of the geographical area of Blaby District as a whole, and that of Blaby District Council as an organisation.

4.1 Blaby District's Carbon Footprint

The carbon footprint for the geographical area of Blaby should comprise all GHG emissions that occur in the area – this includes commercial and industrial sources, domestic homes, transport, agriculture, waste and land use. There is no perfect, simple and 100% accurate way of calculating a carbon footprint, as it relies on a number of assumptions. The Government Department for Business, Energy and Industrial Strategy (BEIS) annually publishes detailed local authority level CO₂ emissions data, however does not provide data on the other recognised Kyoto Protocol GHGs emissions, collectively known as CO₂e emissions. As such, this data 'misses' 19% of all GHGs but is useful for showing the overall trend. BEIS data is published with a 2 year lag, and therefore the data for 2017 is the most recent available. From this it is evident that the trend in Blaby is similar to the national trend; CO₂ emissions slowly and steadily declining over the last few years, due mainly to the decarbonisation of the electricity grid (see figure 2). Emissions from agriculture waste and peatlands are not included in these figures because they primarily produce methane rather than CO₂, therefore are missed from the BEIS emissions data.

Blaby will use the SCATTER tool to demonstrate the potential carbon reductions that are possible through certain pathways. SCATTER is a local authority focussed emissions tool, built to help create low-carbon local authorities and has been used to generate our area footprint. It's development has been funded by the Department for Business Energy and Industrial Strategy (BEIS) in collaboration with Nottingham City Council, GMCA, the Anthesis Group and the Tyndall Centre.

Footprint Scope Activities taking place within a city can generate GHG emissions that occur inside the city boundary as well as outside the city boundary. To distinguish among them, emissions are commonly grouped into three categories based on where they occur:

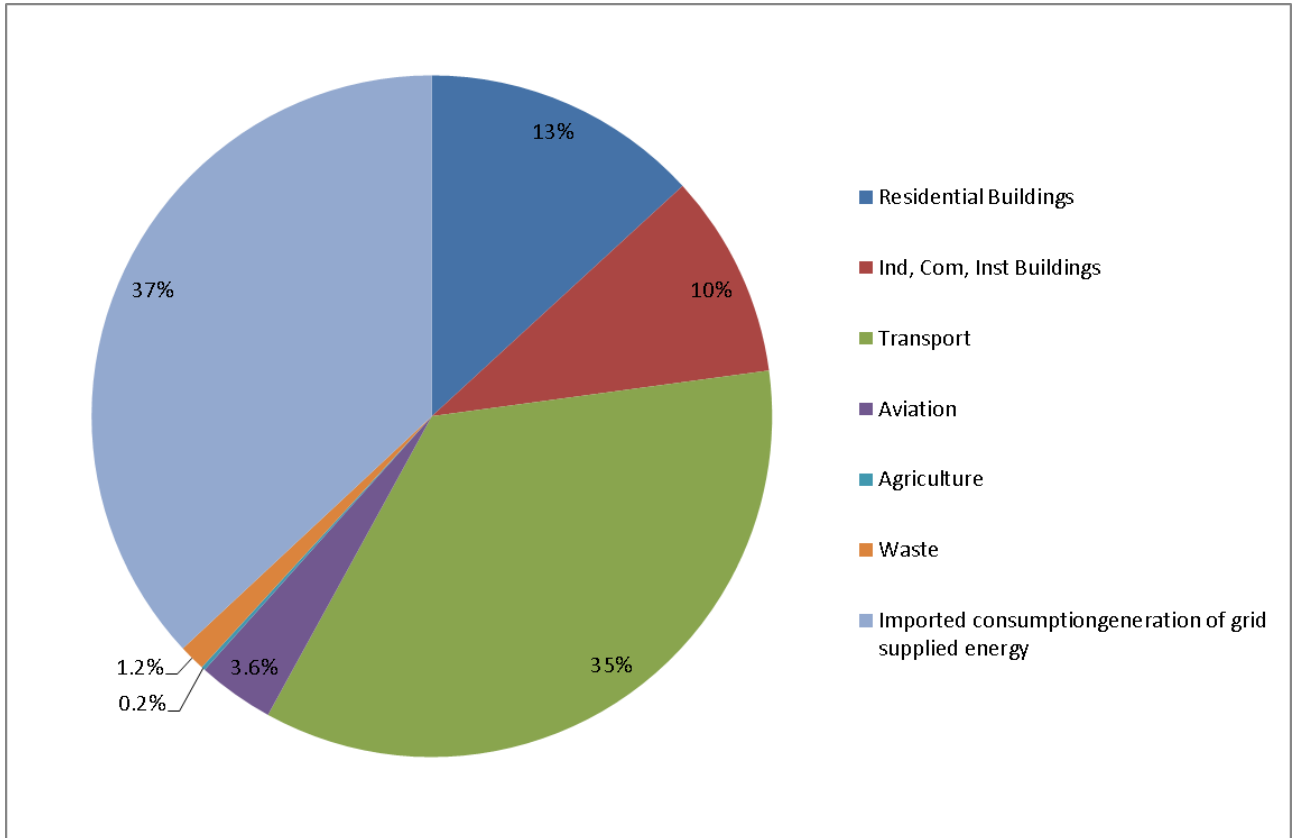
- Scope 1 (Direct emissions) GHG emissions from sources located within the district boundary
- Scope 2 (Indirect emissions) GHG emissions occurring as a consequence of the use of grid-supplied electricity, heat, steam and/or cooling within the district boundary but purchased from outside the boundary.
- Scope 3 All other indirect emissions from activities and their lifecycles that occur outside the district boundary as a result of activities taking place within the district such as procurement, waste disposal and investments.

Blaby District’s Green House Gas Emissions by Source (2017)

Table 1. Key emissions from main sources.

TonnesCO₂e	Scope 1	Scope 2	Scope 3		
Stationary Energy ⁹	156,418	125,621	45,703		
Transport ⁹	320,961		179,709		
Aviation ⁹			51,901		
Waste ⁹	17,857				
Imported consumption ¹⁰			526,302		
Total	495,236	125,621	803,615	Net Total	Per Capita ¹¹
				1,424,472	14.2

Figure 1. Blaby District's green house gas emissions by source (2017).



Detailed information about the key emissions from the main sources are shown in the table above (table 1) and pie chart (figure 1). These emissions include imported consumption emissions, which is the carbon locked into the goods, food and services we consume from around this country and the world. These are very hard to measure locally, but we can make an estimate for Blaby District from BEIS data. It shows that these often hidden emissions make up around a third of our emissions footprint overall, followed by transport and residential building emissions.

Carbon dioxide and other greenhouse gas emissions come from a variety of sources. Some are naturally occurring processes and others from activities in our homes, transport and businesses. Carbon emissions, especially those that we can measure, generally come from the use of energy for heating, vehicles, motors, machinery and appliances. Some of these, like traditional cars or gas boilers, have direct emissions from the burning of fossil fuels. Others have them through the use of electricity from the grid.

Government data shows what kind of energy is consumed in Blaby District - principally gas (28.6%), petrol products (53%) and electricity (15.8%)¹². Each energy source will have a different carbon intensity and footprint, meaning the emissions from some sources, such as coal, are worse than others. The true picture of carbon and greenhouse gas emissions in any district or city is wider than the description above. There are emissions involved in the lifecycle of products, and the infrastructure that delivers energy and products to us.

4.2 Blaby District Council's Carbon Footprint

The carbon footprint of Blaby District Council (as an organisation) comprises emissions that occur as a result of the Council's own operations. We have calculated the carbon footprint of the Council's own operations in line with the UK Government's Environmental Reporting Guidelines¹³. The footprint is calculated using data for the financial year 1 April 2018 to 31 March 2019.

The resultant baseline for 2018/19 is summarised as follows:

Table 2: Summary of GHG emissions (tonnes CO₂e)

Total Gross Emissions 2018/19	Tonnes CO ₂ e
Scope 1 (Direct)	683.91
Scope 2 (Indirect)	96.2
Scope 3 (other indirect)	220.22
Grand Total	1000.33

The Organisational boundary

In order to produce this Carbon Management Action Plan it is essential to accurately establish the scope of the operations on which our organisation will report. This process is known as defining the organisational boundary. This means establishing what activities and functions are counted (or 'in scope') for the purpose of determining the Council's overall emissions, and by default what activities and functions are not counted ('out of scope'). This stage of the process involves reviewing the Council's operations to determine activities that give rise to carbon emissions. As district council the organisational structure is relatively straightforward and reporting therefore includes the impacts from everything that is owned and operated by the organisation.

Defining the scope

The starting point for carbon management is to accurately establish the emissions baseline. The scope of the baseline includes the required types and sources of emissions over a defined timescale. The baseline is a fixed point against which a reduction target can be set and future performance monitored. Emission releasing activities are classified into three groups known as scopes. These scopes and their relevant associated activities are defined in the GHG Protocol Corporate Standard, as follows:

Table 3: GHG Emission scopes and associated emission releasing activities (BEIS,2019a)

Scope	Definition / Activity
1 (Direct)	Emissions from sources that are owned or controlled by the organisation
Fuels	Fuel sources combusted at a site or in an asset owned or controlled by the organisation.
Passenger Vehicles	Travel in cars and on motorcycles owned or controlled by the organisation.
Delivery Vehicles	Travel in vans and heavy goods vehicles that are owned or controlled by the organisation.

2 (Indirect)	Emissions that are a consequence of the organisation's operations, but occur from sources owned or controlled by another company
Electricity (grid)	Electricity used by an organisation at sites owned or controlled by them.
3 (Other Indirect)	Emissions that are a consequence of the organisation's operations, which occur at sources which they do not own or control
Well-to-Tank (WTT): Fuels	Upstream emissions associated with extraction, refining and transportation of the raw fuel sources to an organisation's site (or asset) prior to their combustion.
Transmission and distribution (T and D)	Emissions associated with grid losses (the energy loss that occurs in getting the electricity from the power plant to the organisations that purchase it).
Well-to-Tank (WTT): Electricity	Upstream emissions of extraction, refining and transportation of primary fuels before their use in the generation of electricity.
Land business travel	Travel for business purposes in assets not owned or directly operated by the organisation.
Well-to-Tank (WTT): Passenger vehicles	Upstream emissions associated with extraction, refining and transportation of the raw fuels before they are used to power the transport mode.
Well-to-Tank (WTT): Delivery vehicles	Upstream emissions associated with extraction, refining and transportation of the raw fuels before they are used to power the transport mode.
Well-to-Tank (WTT): Land business travel	Upstream emissions associated with extraction, refining and transportation of the raw fuels before they are used to power the transport mode.

Scope 1 – All Direct Emissions from the activities of an organisation or under their control. This includes fuel combustion on site, from owned vehicles and fugitive emissions.

Scope 2 – Indirect Emissions from electricity purchased and used by the organisation. Emissions will be created during the production of the energy and eventually used by the organisation and includes electricity from energy supplier to power computers, heating and cooling.

Scope 3 – All Other Indirect Emissions from activities of the organisation. This is usually the largest share of the carbon footprint (up to 90%), especially for office-based companies, covering emissions associated with business travel, commuting, procurement, waste disposal, water, downstream leased assets (leisure centres and industrial estates) and upstream emissions associated with purchased good or services

Outside of scopes (Table 5) – This relates to biogenic emissions that are considered to have a net zero carbon dioxide impact due to the carbon they absorb during their

growth. When they are burned to produce energy this carbon is released and the associated emissions are recorded as being 'outside of scopes' in accordance with the GHG Protocol. For example the average biofuel blend of forecourt diesel.

Table 4: Breakdown of emissions (tonnes CO₂e)

GHG emissions (Tonnes of CO₂e)	Scope 1	Scope 2	Scope 3	Grand Total
Building and Utilities				
Electricity for council buildings	-	96.2	-	96.2
Gas consumption	80.85	-	-	80.85
Water Supply and treatment	-	-	0.986	0.986
Well to tank emissions for fuel (heat)	-	-	11.24	11.24
Electricity transmission and Distribution	-	-	8.20	8.20
Transport				
Fleet	603.06	-	-	603.06
Business miles	-	-	46.09	46.09
Well to tank emissions for fuel (fleet)	-	-	141.98	141.98
Well to tank emissions for fuel (business miles)	-	-	11.72	11.72
Grand Total	683.91	96.2	220.22	1000.33

Table 5: Emissions that fall outside of scope (tonnes CO₂e)

Outside of scope (Tonnes of CO₂e)	
Diesel (Average biofuel blend)	13.1

Excluded Emissions

In addition to those sources detailed above there are other areas which give rise to emissions that the Council feel should either be included but for which, at this time, insufficient detail is held to enable them to be included or excluded for specific reason. These are as follows:

Scope 1

Refrigerants – Leakage from air-conditioning and refrigeration units can release gases into the atmosphere that have a global warming potential. At present this data is not available, however going forward the Council will look to find methods to record and report this information.

Scope 3

Waste Disposal – This plan deliberately excludes emissions arising from waste treatment/disposal as these are considered to be district wide in origin and will be considered as part of those actions which seek to influence resource use and waste minimisation across area wide.

Waste production – The Council produces waste as part of the day to day operation of its services i.e. general office waste and through the delivery of some of its services such as highway maintenance. At the time of writing this plan it was not possible to include emissions arising from these sources but this will be calculated and included moving forward.

Purchased Goods and Services – By far the biggest ‘exclusion’ relates to the purchasing and use of goods, and the consequential ‘embodied energy’ of such goods. Embodied energy is a complex area, but in simple means the energy used to make and distribute goods, before such goods are actually used.

Employee commuting – Whilst the emissions relating to employees travelling for the purposes of work, to and from meetings for example, is included within this report, the emissions arising from employees travelling from home to work are not included. This approach is accepted as part of the GHG guidance and we will look to find methods to record and report this information going forward.

Leisure Centres – Blaby District Council leases the Huncote and Enderby Leisure Centres to Everyone Active. Both the financial and day to day management of these is controlled wholly by Everyone Active and as such we do not intend to report these at present. However there may be scope to influence emissions arising from these facilities from contractual perspective going forward.

Data Collection

The energy data used to calculate the baseline was gathered from different sources including: Annual energy statements from utility providers and fleet fuel usage mileage and employee expenses claims held by neighbourhood services and finance teams. Work continues to ensure that this data is robust and systems are in place to ensure ongoing timely and accurate collection of such data.

Table 6: Sources of data by energy type

Energy type	Source	Data Quality
Gas	Energy invoices and Annual Energy Statements from supplier	Data held and collated by Finance.
Passenger vehicles	The Merridale system at the Depot.	Usage reports sent monthly to finance and collated
Electricity	Energy invoices and Annual Energy Statements from supplier	Data held and collated by Finance
Business travel	Employee mileage claims made on iTrent.	Data held on iTrent and extracted by Finance.
Water	Statements from supplier	Data held and collated by Finance.

Calculating the Baseline

To calculate what your CO2e emissions are, it is necessary to convert the ‘raw’ data (such as KWh of electricity used) into CO2e emissions. This process is relatively straightforward, using what are known as ‘conversion factors’. The carbon conversion factors used for this Action Plan are the 2018 UK Government published carbon conversion factors (BEIS, 2019b).The Council will use the most up to date conversion factors each time it updates this plan or produces an annual report.

The key conversion factors used are as follows:

Table 7: Key GHG conversion factors (BEIS, 2019b)

Energy Type	Conversion factor
Fuels	
Natural Gas	0.18396 kg CO ₂ e / kWh (Gross CV)
Electricity	
Electricity generated	0.28307 kg CO ₂ e / kWh (Gross CV)
Passenger vehicles	
Diesel (average biofuel blend)	2.62694 kg CO ₂ e / litre
Business Travel	
Average car (unknown fuel)	0.29072 kg CO ₂ e / litre
Water Consumption and Treatment	
Water supply	0.344 kg CO ₂ e / m ³
Water treatment	^{0.708} kg CO ₂ e / m ³

5. Blaby’s Carbon Budget

The relationship between CO₂ and global temperatures means that staying within a given temperature threshold requires that only a certain total quantity of CO₂ is released to the atmosphere. This is the global carbon budget. It provides an indication of the maximum cumulative amount of carbon dioxide that can be emitted to the atmosphere through human actions, between 2020 and 2100, to be in line with keeping global temperature rise well below 2°Celsius and pursuing efforts to limit to 1.5°Celsius rise by the end of the century¹⁴. A carbon budget of this type is not a financial scheme or a limit or cap given to individual persons or organisations.

With this in mind it follows that any target date for carbon neutrality is meaningless unless we also abide by an overall carbon budget. The carbon budget shapes the rate at which we need to decrease emissions each year. Analysis of the national picture has suggested that if nationally we were to plot a straight line pathway to zero from today, the target date would have to be 2025 to avoid exceeding the available carbon budget. This stresses the need to cut emission deeper and sooner to give us the best possible chance of avoiding dangerous levels of climate change.

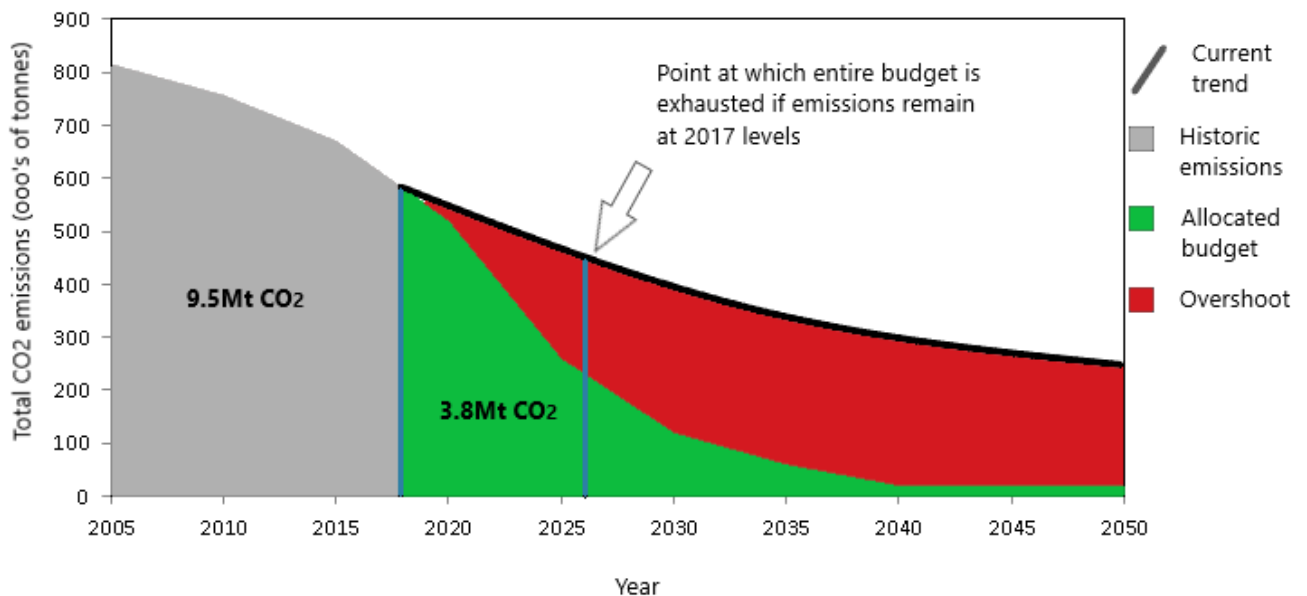
Based on analysis by the Tyndall Centre for Climate Change Research, for Blaby District to make its ‘fair’ contribution towards the Paris Climate Change Agreement, the following recommendations should be adopted:

1. Stay within a maximum cumulative carbon dioxide emissions budget of 3.8 million tonnes (MtCO₂) for the period of 2020 to 2100. At 2017 CO₂ emission levels based on BEIS LA statistics 2017 CO₂ emissions (excluding aviation, shipping, process CO₂ emissions from cement production and those from land use, land use change and forestry), Blaby would use this entire budget within 6 years from 2020.

2. Initiate an immediate programme of CO₂ mitigation to deliver cuts in emissions averaging a minimum of 14.2% per year to deliver a Paris aligned carbon budget. These annual reductions in emissions require national and local action, and could be part of a wider collaboration with other local authorities.
3. Reach zero or near zero carbon no later than 2040. This report provides an indicative CO₂ reduction pathway that stays within the recommended maximum carbon budget of 3.8 MtCO₂. At 2040 5% of the budget remains. This represents very low levels of residual CO₂ emissions by this time, or the Authority Should opt to forgo these residual emissions and cut emissions to zero at this point.

Figure 2 below shows a visual representation of Blaby District's historic cumulative emission period (grey), allocated carbon budget (green) and overshoot of emissions (red) from 2005 – 2050. This clearly demonstrates that knowing and limiting our cumulative emissions is as, if not more importance than any particular target date.

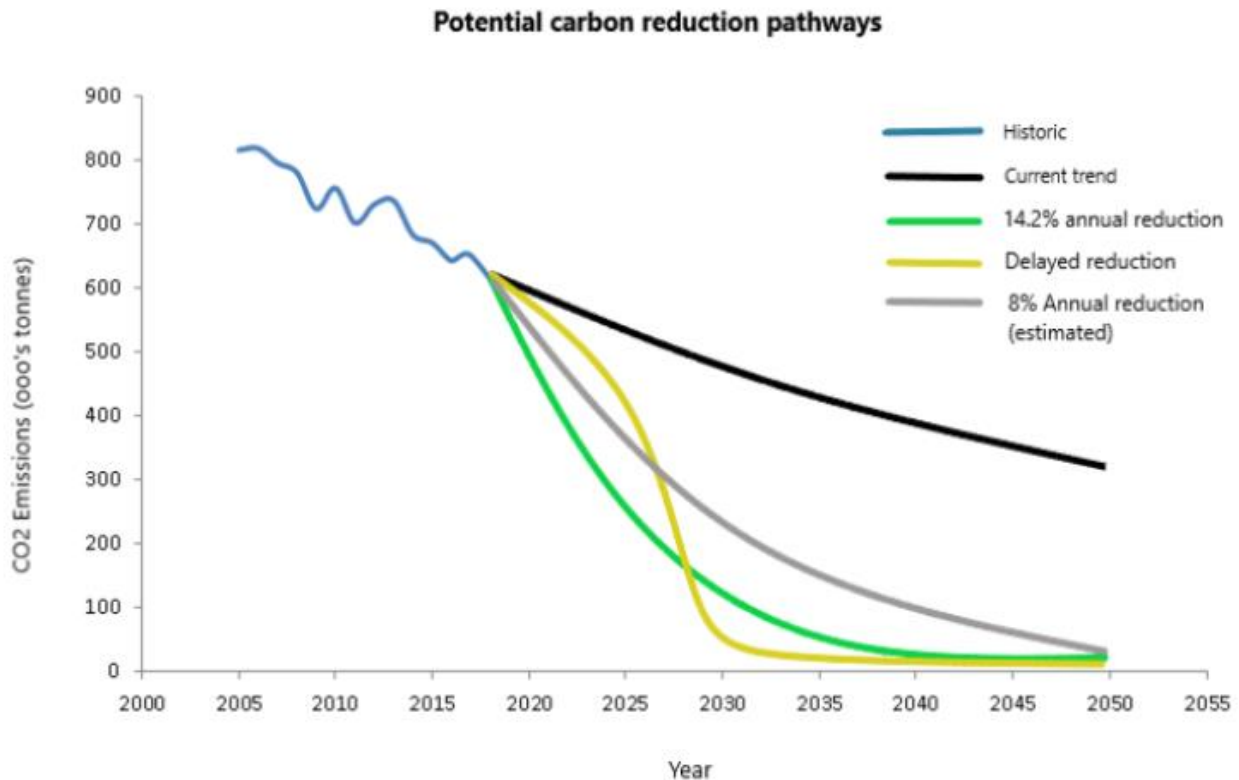
Figure 2. Illustrative potential cumulative emission scenarios to 2050 for Blaby District



Carbon Reduction Pathways

Blaby's carbon budget illustrates the need to pursue an ambitious carbon reduction programme if we are to become a carbon neutral district by 2050 and preferably earlier. Figure 3 below shows some illustrative pathways that we could take in line with our carbon budget in comparison to the trend in emissions if Blaby District Council were to continue as it has done so since 2005.

Figure 3. Illustrative emission reduction pathways to 2050 for Blaby District



A delayed reaction to emissions reduction (yellow line) would mean emissions continue along the business as usual path, slowly increasing in scale of emission cuts year on year and becoming more rapid as we get closer to 2030. This would allow time for a more gradual implementation of emission reduction actions but puts huge pressure on later years and has a greater risk of overshooting Blaby's carbon budget. Delaying action by just one year means the minimum 14.2% annual reduction to remain below Blaby's carbon budget, becomes 15.2%. This clearly demonstrates the urgent need to start reducing Blaby's emissions immediately. The longer we delay the greater the effort needed in the subsequent years.

Instead, Blaby will aim to reduce emissions as quickly as possible to increase the chance of staying within our carbon budget and meeting our carbon neutral ambitions. To do this, emission reduction rates would have to be at or above 14.2% per year. This is the rate of emissions reduction required each year to reduce emissions to the point when cumulative emissions up to 2100 remain below 5% of Blaby's total carbon budget, and acknowledges the technical challenges behind removing all emissions. Negative emissions technologies and offsetting could be used to neutralise remaining emissions.

Using tools, such as SCATTER¹⁵ the depth and breadth of carbon reduction interventions required to get to carbon neutral will be identified. This will provide us with an idea of the scale of action needed to become carbon neutral and how much carbon can be saved by certain types of interventions if they were to be rolled out across the district.

Ultimately, for the District to meet its carbon neutral aspirations, we must increase our use of renewable energy, display better energy behaviours, use more efficient products and buildings, alongside an overall reduction in the demand for energy and consumption.

6. Carbon Reduction Measures

The technologies and approaches to deliver a net-zero world are believed to be available already, and with strong leadership could be implemented at a cost effective level (1-2% UK GDP)¹⁶. The co-benefits of tackling climate change and Green Recovery include improving the health and diets of our citizens, better air quality and new opportunities through a growing green economy.

This plan places a high priority on carbon reduction measures to order improve our chance of staying within our carbon budget and meet our carbon neutral ambitions. There are 5 main target areas for actions on carbon reduction:

- Transport
- The Built Environment
- Energy
- Waste and water
- Resource Use
- Air quality

Within each target area of the plan, key objectives and actions and timescales for implementation are identified.

Short term (2020-2023) Actions already underway or that can start now and aim to complete within the first 3 years (unless earlier date is specified).

Medium term (2023-2026) – Actions requiring further development before implementing. Aim to complete 3 – 6 years.

Long term (2026-2030)- Actions that require significantly more development or resource before implementation. Aim to complete by 2030.

To facilitate understanding and implementation we have grouped the activities needed to become carbon neutral into 5 main sections. Each section will introduce the key issues and current activities, and a range of actions that will deliver the overall objective. It will also specify whether the action contributes to the carbon neutral target for Council Operations or that of the Wider District.

6.1 Transport

Transport makes up a significant proportion of both the council's own carbon footprint (approximately 60%) and that of the wider district (around 35%) with most of this coming from cars, vans, lorries and buses. Action is needed to reduce journeys of these type of vehicles and therefore we will pursue policies that encourage the use of public transport together with walking and cycling and increase the use of electric vehicles (EV's). This will have the co-benefit of improving air quality, mobility and the health and wellbeing of our citizens.

Electric vehicle emissions are primarily determined by the upstream emissions: that is, from the production and distribution of the energy used to charge them. Recent research also suggests that the lifetime carbon emissions of EV's are approximately half those of a conventional vehicle, with more efficient electric vehicles saving on the carbon produced in the batteries in just two or three years¹⁷. Further carbon savings can be made when you consider the potential for onward re-use of retired electric vehicle batteries for less demanding applications like stationary energy storage in homes, workplaces or charging hubs.

Action	Timescale
Council wide	
6.1.1 Conduct Green Fleet Review to make business case and kick start switch to electric vehicles	Short term
6.1.2 With a grant obtained from LCC's Choose How You Move scheme - purchase a small fleet of e-bikes for use by council employees as a pilot scheme initiative to promote sustainable travel and healthy lifestyles and improve the wellbeing of staff.	Short term
6.1.3 Increase numbers of secure public bike shelters around the district (Narborough station, Leisure centres, car parks, council offices etc).	Short term
6.1.4 Review of the Council's employee business travel and commuting to explore opportunities to switch to electric vehicles and the feasibility of this.	Short term
6.1.5 Replace all council fleet vehicles (cars, vans, refuse lorries and other maintenance vehicles) with electric, hybrid or similar low/no carbon alternatives.	Medium – Long term
6.1.6 Following scoping project install the appropriate electric vehicle charging points at the Depot and main offices	Short term
6.1.7 Carry out a staff travel survey. Allowing us to estimate current trends and associated carbon emissions arising from staff commuting.	Short term
6.1.8 Reduce staff commuting through promotion and support of agile working.	Short term
6.1.9 Encourage the use of video conferencing and invest in equipment to facilitate participation in digital meetings, thus reducing travel.	Ongoing
District wide	
6.1.10 Walk and Ride Blaby – multi stakeholder approach to connect communities and places by creating and improving a sustainable transport network focussing on walking and cycling and improving the health and wellbeing of residents.	Short term
6.1.11 Develop a partnership with Electric Blue to develop a local Authority EV Strategy to create a charging network across the district (public and private car parks, petrol stations, on street)	Short term
6.1.12 Specify an approach to electric charging infrastructure for homes and businesses in strategic plans.	Short term
6.1.13 Engage with the taxi drivers to encourage the switch to electric vehicles.	Short term
6.1.14 Engage with and encourage businesses to switch to electric vehicles. Lead by example and provide information.	Short term

6.1.15 Work in partnership with neighbouring local authorities to deliver an EV charging network, share ideas and work collaboratively on other initiatives.	Short term
6.1.16 Explore opportunities to increase the use public rail services – Increasing the number of stops by trains passing through Narborough Station.	Short term
6.1.17 Submit application bid for On Street Residential Charging Scheme (ORCS) to Office for Low Emission Vehicles (OLEV) to fund residential EV charging points across the district.	Ongoing (July 2020)
6.1.18 Submit bid in next round of the ‘Ultra Low Emission Taxi Infrastructure Scheme’ from OLEV.	Short term
6.1.19 Ask for comments from residents via Council’s Climate Change Website (with additional publicity through Communications Team) in regard EV charging point network and feed into OLEV bid.	July 2020
6.1.20 Explore potential to work in partnership with neighbouring authorities to connect cycle routes and investigate new funding streams that might be available by incorporating links to local history along cycle routes.	Medium term
6.1.21 to use our influence/work with partners to create secure cycle parking facilities at traffic-laden locations/destinations (eg: Fosse Park, Everards Meadows at Rutland Cycles), Grove Farm, Blaby Town Centre, etc	Short term

6.2 Built Environment

Over the coming decades Blaby will have to dramatically improve the energy efficiency of all its buildings to reduce the demand for energy. As a district we will need to reduce our reliance on gas and instead heat our buildings with low carbon alternatives such as heat pumps. We must change behaviours, embrace energy efficiency technologies and encourage the uptake of modern methods of construction in commercial and domestic buildings. We must explore and take opportunities to influence development through planning policy and the Local Plan and ensure these are in line with our carbon neutral commitments and the recommendations of the CCC report UK Housing - Fit For Future¹⁸

Action	Timescale
Council wide	
6.2.1 Conduct energy efficiency audit of main council offices (Pick Everard)	Ongoing
6.2.2 Identify options for retrofit of existing council buildings to improve insulation, air tightness and install better windows. Improve the management of energy usage across our assets to highlight and reduce energy use.	Short term
6.2.3 Replace existing gas boilers at main offices with low carbon alternative and explore potential for the use of heat pumps.	Short term
6.2.4 Identify ways and means of reducing carbon footprint and energy efficiency of our leased assets and use our influence as landlord to ensure these are implemented. This applies in particular to Huncote and Enderby Leisure centres which are owned by Blaby District Council.	Medium term

District wide	
6.2.5 Promote the council's collective switching initiative to minimise residents' fuel costs and encourage residents to switch to 100% green tariff. Working with IChoosr to use direct mail to increase uptake.	Ongoing (by Oct 2020)
6.2.6 Explore potential for joining Solar Together – a scheme for helping residents to install solar panels on their property. This must be in collaboration with other local authorities. Make contact with neighbouring authorities.	Ongoing (complete by Oct 2020 if support is received)
6.2.7 Promote LEAP (Local Energy Advice Partnership) on our website which is a free energy and money saving advice service for residents.	Short term
6.2.8 Develop partnership with HDC & Harborough Energy ECO Flex scheme to help promote and encourage uptake of Warm Homes funding for low income/low EPC Homes. Tackle fuel poverty and in turn improve the health and well-being of citizens by providing new heating systems, energy efficiency solutions and advice to households without them.	Short term
6.2.9 Ensure that Climate change is embedded in the development of the New Local Plan to ensure that it supports our aims for carbon reduction and sustainable development across the district.	Short term
6.2.10 Introduce planning requirements for all future domestic housing in line with carbon neutral target and Committee on Climate Change (CCC) advice. New homes should deliver ultra-high levels of energy efficiency as soon as possible and by 2025 at the latest, consistent with a space heat demand of 15-20 kWh/m ² /yr ¹⁸ . Passivhaus or equivalent should be considered and an assessment against Net Zero Carbon should be required.	Short term
6.2.11 Introduce planning requirements for all future non domestic buildings in line with the carbon neutral target. Passivhaus or equivalent should be considered and an assessment against Net Zero Carbon should be required.	Short term
6.2.12 Consider Policy intervention to prevent the installation of any new fossil fuel heating system (e.g.gas boilers) on new developments by a specified date.	Medium term
6.2.13 Set up carbon offset fund to incentivise private developers to achieve greater carbon reductions on site while providing a fund for the sole purpose of delivering carbon reduction projects ¹⁹ .	Medium term
6.2.14 Work with developers and heating engineers to tackle the skills gap for renewable technologies in the construction sector. Encourage re-training in low-carbon heating, energy and water efficiency, ventilation and thermal comfort, and property-level flood resilience. Inform of the planned phasing out of gas boilers.	Short term
6.2.15 Ensure building regulations standards are maintained and buildings are built as designed.	Short term

6.3 Energy

Since 2010, the UK electricity national grid CO₂e conversion figures have decreased by 47%²⁰. This trend is likely to continue as the mix of electricity sources nationally become lower carbon with an ever greater proportion of our energy coming from renewable sources such as wind and solar. However due to the limited grid capacity

to both store and transfer electrical energy at a national level we will need to take steps to significantly expand renewable sources of energy at a local level and build capacity to store that energy within the district. This will require significant investment in new and existing low carbon energy generating technologies.

As of 2018, Blaby had 1345 Solar PV installations generating 10409 mWh of electricity²¹. If we are to succeed we must significantly increase our local renewable energy generation, with a particular focus on small-medium scale Solar PV (Photovoltaic) installations combined with energy storage. We will aim to participate and lead on innovative solutions to energy generation and look to have a range of sources in place including energy from solar, waste, wind and ground source heat.

Action	Timescale
Council wide	
6.3.1 Establish the Council's carbon footprint and continue to monitor our green house gas emissions. Produce an annual Green House Gas Emissions Inventory.	Complete(18/19) Ongoing (19/20)
6.3.2 Conduct a holistic energy opportunity assessment for Depot, main Office and closed landfill sites to identify measures that can be taken to reduce consumption and identify potential for local renewable energy solutions.	Short term
6.3.3 Where viable install Solar (PV) on council buildings	Short term
6.3.4 Explore potential for Solar (PV) installations on leased assets.	Short term
6.3.5 Switch to a 100% renewable 'green' electricity tariff 6.3.5.1 – Explore switch to Green Gas.	Short term
District wide	
6.3.6 The Council acknowledges that in order to achieve the target of net-zero carbon emissions the district will need to generate much more energy from renewable sources. As such the Council is committed to working with its partners to identify and develop further suitable opportunities with a particular emphasis on small-medium scale solar PV installations combined with energy storage	Medium term
6.3.7 Through our new Local Plan ensure that new developments take advantage of Ground Source Heat Networks	Medium term
6.3.8 Within the Local Plan set an ambitious formal target for Solar (PV) capacity in Blaby District (study currently being investigated by planning policy team)	Long term
6.3.9 Promote Ground Source heat pumps as a viable and cost effective alternative to gas central heating.	Short term
6.3.10 Explore potential for onshore wind installations within the district and if necessary lobby central government to change planning laws.	Short term
6.3.11 There is a need to establish existing grid capacity within Blaby District for the purposes of planning an EV Charging network and renewable energy projects. We will therefore commit to working with the local Distribution Network Operator to establish this and feed this into our Local Plan.	Short term
6.3.12 Engage with the public and private sector to seek partners for a community renewable energy investment fund for large scale Solar PV projects.	Medium term

6.4 Waste and Water

In 2019/20, 34,750 tonnes of household waste was produced in Blaby District of which approximately 42% was recycled or composted. Action needs to be taken to reduce the volume of all waste, increase the re-use and recycling of waste, eliminate disposal to landfill and generate energy from the remainder. We should also explore emerging technologies around the mining of energy and resources from historic landfill sites. We must also ensure both the supply and demand of water is managed in a more sustainable way.

Action	Timescale
Council wide	
6.4.1 Conduct a waste audit to better understand our sources of waste, identify our recycling rate. Once known explore ways to minimise waste generated from our own activities, increase recycling rates and set ambitious targets.	Short term
6.4.2 Reduce the total volume of waste we produce and identify annual reduction targets	ongoing
6.4.3 Review need for vending machines in light of Covid 19 given reduction/absence of external meetings. Replace all existing vending machines which currently use non-recyclable cups and single use plastics with more sustainable alternatives.	Short term
6.4.4 Explore potential for food waste collection around main office and depot.	Short term
6.4.5 Investigate the potential to include technologies to improve water efficiency within buildings, such as rainwater harvesting, grey water systems, flow regulators, water efficient toilets and showerheads.	Short term
District wide	
6.4.6 Investigate alternative disposal routes for municipal waste with the aim of eliminating waste to landfill	Short term
6.4.7 Introduce food waste collection across the district.	Medium term
6.4.8 Explore opportunity for alternative food waste disposal such as composting and anaerobic digestion and its potential for energy generation.	
6.4.9 Target a 70% Recycling rate for all domestic and non domestic waste by 2025.	Medium term
6.4.10 Target zero biodegradable waste to landfill by 2025	Medium term
6.4.11 Investigate opportunities for more Anaerobic Digestion facilities within the district as a potential disposal route for food waste.	Medium term
6.4.12 Explore potential for introducing planning requirements for construction waste on new build projects that specifies recycling targets and diversion from landfill (links to carbon offsetting fund).	Short term
6.4.13 Explore potential for food waste collection for businesses across the district.	Short term
6.4.14 Work with supermarkets to explore ways of reducing food waste to zero and consider/investigate working with social	Short term

enterprise schemes example: The Real Junk food Project, Leicester –(reducing food waste and feeding the hungry)	
6.4.15 Provide information to citizens and businesses on the best practices to reduce water consumption, helping to improve understanding of the issues and solutions to better water management, reducing bills and carbon emissions	Short term
6.4.16 Explore ways of encouraging the use of technology and to improve water efficiency in buildings through the Local Plan.	Short term
6.4.17 Work with partners to understand how and where Green and Blue infrastructure can improved to manage water in more sustainable way within the district. Identify projects that conserve water and manage wetlands to reduce flood risk (e.g. room for water in the Netherlands)	Short term
6.4.18 Use our influence/work with supermarkets to explore ways of reducing the use of single use plastic packaging – particularly for fruit/veg and fresh items.	Short term
6.4.19 Explore potential for underground refuse systems in both new and existing developments. This would have the benefit of significantly reducing the number of collections, mileage and staffing costs related to refuse collection service.	Medium term

6.5 Resources and Consumption

The embedded carbon of the goods and services we buy have their own emissions and associated carbon footprint. They can account for up to 90% of an organisations total emissions. Food and drink in also have a big impact on our imported emissions. We must use our influence to reduce meat and dairy consumption, increase plant based food production. Promoting locally sourced produce, reducing food miles and sourcing from less energy intensive forms of farming will benefit the local economy and the health and wellbeing of our residents.

Action	Timescale
Council wide	
6.5.1 As a council, become single use plastic free by 2025.	Short term
6.5.2 Conduct an analysis of our purchased goods and services to ascertain the associated carbon emissions and identify potential savings. These are Scope 3 emissions which may account for up to 90% of our carbon footprint.	Short term
6.5.3 Engage with suppliers to reduce their carbon footprint and consider environmental performance when awarding contracts or making purchases. Consider ways environment impact can be assessed as part of the procurement process.	Short term
District wide	
6.5.4 Work with LCC to reduce the meat content of meals served in schools and increase plant based and vegetarian choices in schools.	Short term

7. Air Quality

The Local Air Quality Management System is governed by the Environment Act 1995, as amended. Local authorities, including Blaby District Council, are required to assess air quality in their area against nationally set Air Quality Objectives and designate Air Quality Management Areas (AQMAs) if improvements are necessary. Where an AQMA is designated, local authorities are required to produce an Air Quality Action Plan (AQAP) describing the pollution reduction measures it will put in place.

Since 1992, Blaby District Council has carried out air quality monitoring in various locations, primarily for Nitrogen Dioxide associated with the roads in the District. AQMAs have been declared and a replacement AQAP is being developed alongside this Carbon Neutral Action Plan (CNAP).

Each year an Annual Status Report (ASR) has to be completed, using a template, and submitted to Defra. The ASR includes monitoring data and analysis, together with an update on actions being taken in relation to air quality.

Local authorities are encouraged to publish Air Quality Strategies which can contain policies for wider measures. Blaby District Council has an Air Quality Strategy 2018-21.

The 3 documents (AQAP, AQS, and CNAP) all contain actions designed to improve air quality. Therefore by operating collectively, there is increased potential to achieve improvements. Several of the actions that are in the Transport section above, which relate to reducing the need to use private transport and cleaner engines, are directly relevant to air quality. The AQAP will contain actions that are specific to the AQMAs and are less useful to this Plan. Therefore the actions that appear in the table below are ones that are most relevant:

Action	Timescale
District wide	
7.1 Continue to deliver projects to encourage active travel and car use reduction, targeting schools and then local businesses within and around the District's AQMA's partly in partnership with Leicestershire County Council.	Ongoing
7.2 Continue to work closely with Leicestershire County Council and Leicester City Council to manage the air quality impacts of the local road network with the District.	Ongoing
7.3 Continue to work closely with Highways England to manage the air quality impacts of their roads within the District.	Ongoing
7.4 Continue to work closely with all Leicestershire authorities, including Leicester City Council, Leicestershire County Council (various sections including highways and transportation, public health, and sustainability), Highways England, the Environment Agency, and Public Health England This collective working improves understanding and seeks to maximise the benefits of various work streams.	Ongoing
7.5 Share Air Quality data with parishes, partners and residents, providing transparent information on what our monitoring is telling us so they feel informed.	Ongoing

7.6 Integrate the guidance produced by the East Midlands Air Quality Network into planning related documents as appropriate. This guidance is in the form of a toolbox and is intended to promote a more consistent set of policies across the Region.	Short term
7.7 Consider the noise and Air Quality implications of a variety of planning applications, when consulted, and ensure that impacts of proposed schemes are mitigated as far as possible.	Ongoing

8. Biodiversity

Increasing biodiversity goes hand in hand with our carbon neutral ambitions. Biodiversity net gain is referenced strongly in the National Planning Policy Framework (NPPF) 2019. The environmental test of sustainable development requires planning policy and planning decisions to help to ‘improve biodiversity’. Delivering biodiversity net gain will have the knock on benefit of enhancing our green spaces and increasing carbon sequestration.

Action	Timescale
Council wide	
8.1 Diversify amenity grass areas to create wildflower meadows, creating Bee Friendly Habitats and increase biodiversity.	Short term
District wide	
8.2 Work with farmers and landowners to increase or enhance hedgerows, meadows, and other habitat resources that contribute to biodiversity net gain.	Short term
8.3 Work with partners to explore ways we can increase Biodiversity and the ecological value of our SSSI’s (Sites of Special Scientific Interest) and Nature Reserves (e.g. Narborough Bog, Croft Quarry)	Short term
8.4 Develop local policies in line with NPPF that conserve, enhance or restore priority habitats, ecological networks and protect priority species. Specify 10% biodiversity net gain in the Local Plan.	Short term

9. Governance, Funding and Engagement

Achieving our target to be carbon neutral as a council by 2030 and district wide by 2050 or earlier will not be possible through a ‘business as usual’ approach. We will need to find innovative ways of working. The list of actions set out in this plan are not exhaustive and additional measures will inevitably come to light in the future. However they are a starting point and they provide some perspective on the scale of the task in hand and will inform how we allocate resources to tackle the global climate emergency.

Action	Timescale
Council wide	
9.1 To work with our Green Champion and members of scrutiny to ensure we have cross party representation in championing carbon savings, scrutinising decision making and steering further carbon saving initiatives and ideas.	Short term

9.2 Introduce a 'Carbon Impact Assessment' procedure – a new assessment which requires all Council key decisions to be assessed for their potential carbon implications and therefore support the council's carbon neutral aims.	Short term
9.3 Develop our Green Champions to represent the Council's various service areas. These individuals are responsible for raising awareness of key initiatives and embedding change. A key focus for the Champions moving forward will be to develop and deliver a programme of behavioural change activities to result in actions that will directly reduce carbon emissions across the Council's estate. Ongoing – further resource and budget needed to support this work.	Short term
9.4 Run carbon literacy training for Green Champions, council staff and elected members to help educate wider staff on how they can help reduce their carbon impact, reduce energy use, minimise waste and improve sustainability. APSE online training.	Short term
9.5 Ensure council's investments are placed with environmentally and socially responsible projects/companies.	Short term
District wide	
9.6 Working with willing Parish Councils, to prepare a template parish based Carbon Neutral Action Plan, and subsequently encouraging all Parish Councils to come up with their own targets and projects.	Short term
9.7 Continue with and build on our work with schools and the youth council to deliver workshops and engage with young people.	Ongoing
9.8 Citizen Engagement – Create dedicated Climate Change web page that provides accurate and up to date information on its carbon management actions and raise awareness of climate change through local media.	Short term
9.9 Produce a carbon calculator for the website to allow residents to quantify their own impact.	Short term
9.10 Schools – While they are not under our control we will seek to influence and raise awareness of their own impact and what they can do to be more energy efficient and reduce their energy consumption and emissions.	Short term
9.11 Continue to work across boundaries with a wide network of local authorities to share expertise and work in partnership as part of the local Energy Hub and East Midlands Sustainability Officers Group.	Ongoing
9.12 Hold a Citizens Assembly on climate change to allow representation from across the district to engage and contribute to actions.	Short term
9.13 Engage with local businesses to raise awareness of Net Zero Carbon. (Business Breakfast)	Short term
9.14 Engage with owners and occupiers of local business and retail parks (Fosse Shopping Park, Meridian Business Park and Grove Park) to discuss potential for Solar PV installations and EV Charging points.	Short term
9.15 On-Street Residential Chargepoint Scheme Grant (ORCS) Funding from OLEV – Submit bid.	Ongoing- complete by end of June.
9.16 Explore opportunities for funding from Salix Finance. Salix, who are funded by BEIS, provide interest free government loans for local authorities to fund energy efficiency projects across their estates. This could be considered to address the findings from Project Alpha with regard to energy efficiency/retrofit of main offices.	Short term

9.17 Consider action to form a lobby group including all City and County MPs to challenge Defra Air Quality standards and to form unitary agencies to both measure and enforce air quality standards.	Short term
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10. Carbon Offsetting

This section focusses on carbon capture and offsetting those residual greenhouse gases that cannot be completely removed. Whilst there are likely to be new negative emission technologies that emerge over the coming decades we cannot rely on these. We must therefore also focus on methods that are available to us now.

- Local carbon offsetting
- Carbon Capture
- Large scale carbon offsetting

A carbon offset is a reduction in emissions of carbon dioxide or other greenhouse gases made in order to compensate for emissions made elsewhere. This may include tree planting, woodland and parks management which will increase the capture of CO₂ via sequestration and help to achieve our carbon neutral commitments.

Whilst we will identify potential offsetting practices to help Blaby District's carbon neutral ambition. We will not be actively promoting these above actions to reduce carbon emissions directly. Blaby's carbon budget currently assumes that we will not be using technologies to remove CO₂ from the atmosphere as these are currently unproven at scale and relying on them would create uncertainties in our contribution to future climate change action.

Theoretically, if these technologies were to become widely available and used, Blaby's carbon budget would become bigger. However, it is important that we do not assume this before these technologies become well proven, otherwise we risk contributing to a warmer world.

Action	Timescale
Council wide	
10.1 Explore potential for funding carbon offset projects within the district to offset those council emissions that cannot yet be fully mitigated.	Medium term
District wide	
10.2 Determine whether a district carbon off-setting programme can be put in place and to examine the viability of potential carbon savings from tree planting.	Short term
10.3 Encourage the planting of more trees and hedgerows on farmland to improve carbon sequestration.	Short term
10.4 Explore opportunities to work with landowners and the National Farmers Union to promote agroforestry, forest carbon capture schemes and carbon credits.	Short term

11. Resilience and Adaptation

This section will address the actions that Blaby must take to protect the district and its residents against the harmful impacts of climate change that are now unavoidable. We are already beginning to experience localised flooding and extreme temperatures.

The Council also acknowledges that in recognising there is a global climate emergency, the actions needed to be taken are not all about mitigating the impacts, but also adapting to the inevitable changes of climate change.

The Council's Local Plan has contained policies relating to flooding for many years. The current one is within the adopted Core Strategy: Policy CS22 – Flood Risk Management:

'To minimise the risk of flooding (and other hazards) to property, infrastructure and people'

The planning team regularly consult the Environmental Services Team on a variety of planning applications for flooding and drainage, which do not fall with the remits of the Environment Agency or Local Lead Flood Authority. The information submitted, which can include a Flood Risk Assessment, is considered and comments sent to the relevant planning case officer

Action	Timescale
Council wide	
11.1 Seek to introduce policies in the Local Plan that require design measures that build resilience for heatwaves.	Short term
11.2 Ensure core council services are resilient and adaptable to extreme weather events.	Ongoing
11.3 Ensure that all post Covid 19 recovery plans and associated decisions to be assessed for their potential carbon implications and therefore support the council's carbon neutral aims.	Short term
District wide	
11.4 Reduce the number of homes and businesses, across the district that are exposed to flood risk.	Short term
11.5 Maintain robust planning measures to ensure that flood risk implications are considered in applications.	Short term
11.6 Understand the current and future risk of extreme weather events to the most vulnerable citizens.	Short term
11.7 Look at scope to expand and enhance natural flood plains and wetlands to provide additional natural flood storage in such a way that protects properties and increases biodiversity.	Short term

12. Monitoring and evaluation

The UK Government department BEIS (Department for Business, Energy and Industrial Strategy) annually release local authority carbon emissions each summer. At the end of each financial year, Blaby District Council's own emissions and those of the whole district will be assessed against the pathways and allocated carbon budget to assess progress towards carbon neutrality. Also a review of the action plan will inform an understanding of the anticipated carbon saved. The related year's carbon

emissions will not be published by BEIS until two years later due to the data lag (e.g. short term actions in 2020/21 will not be in the released reported emissions until 2022).

To ensure all service areas are involved in delivery, the actions specified in this document will be entered into an excel spreadsheet to create a simple live matrix so that departments and services can easily see what actions are applicable to them and update accordingly. Progress will be recorded on the matrix throughout the year and actions updated within the Carbon Neutral Management Plan during it's annual review.

Action	Timescale
Council wide	
12.1 Carry out annual review of CNAP	March 2021
12.2 Develop a working spreadsheet/matrix for use across departments and services to allow for live tracking progress and updating actions.	Sept 2020

Glossary of terms

1.5°C Temperature rise - This refers to the rise in the average global temperature above the pre-industrial period (pre-1750).

Adaptation - Actions to reduce vulnerability to climate change impacts, reducing its effects on social, economic and natural systems.

Biodiversity - The variety of animal and plant life on Earth.

Business as usual - Future emissions trend if the current state of affairs continue as they are today.

Carbon budget - The maximum amount of carbon dioxide that can be emitted to be in line with keeping temperatures well below 2°C and pursue a 1.5°C limit to rising temperatures.

Carbon dioxide (CO₂) - A key greenhouse gas with a long-lifetime in the atmosphere and both natural and human sources.

Carbon neutral - Having no net release of carbon dioxide into the atmosphere.

Climate change - The long term change of climate, typically measured over decades or longer. This is different to weather, which is now.

Climate emergency - Climate change presents the greatest threat to life: on the economy, social well-being and the natural environment.

CO₂e - Carbon dioxide equivalence; this includes all greenhouse gasses converted into the equivalent amount of carbon dioxide.

Decarbonisation - reducing the carbon intensity of energy in the national grid, this is achieved by reducing the proportion of fossil fuels and increasing the proportion of renewable energy sources such as solar and wind.

Ecosystem - Community of living organisms and the natural environment

Global warming - Increase in temperature of the Earth's atmosphere over long timescales, caused by increased levels of greenhouse gasses.

Greenhouse gas (GHG) - The Earth can maintain a regular average temperature (about 15°C) despite heat leaving the planet's surface because a layer of gases in the atmosphere absorb and release heat – a process known as the greenhouse effect. Greenhouse gases are those that have this effect, each with differing lifetimes and abilities to capture heat (infrared radiation).

MtCO₂ - Millions of tonnes of carbon dioxide

PV – Photovoltaics (Solar Panels)

Resilience - The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and

efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions

Sustainability - Meeting the needs of current generations, without compromising future generations or the natural environment

Upstream/Downstream emissions - Upstream applies to suppliers of the organisation. Downstream, to the organisation's customers. The term covers the emissions from the movement of goods by land, sea and air. It also includes emissions from third-party services along the supply chain

BEIS (2019a). Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance.[online] Available at:

<https://www.gov.uk/government/publications/environmental-reporting-guidelinesincluding-mandatory-greenhouse-gas-emissions-reporting-guidance>

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1. Climate Change Act 2008. The world's first long term legally binding framework to tackle the dangers of climate change. The Climate Change Bill was introduced into Parliament on 14 November 2007 and became law on 26th November 2008.

2. WWF states that if everybody in the world lived as the average EU resident, we would have exhausted nature's budget for 2019 by 10 May 2019, and would need 2.8 planets to sustain us. (WWF, 2019)

3. <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/about>

4.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/758983/Climate_change_impacts_and_adaptation.pdf

5. The main GHGs are: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and Nitrogen Trifluoride (NF₃). The Kyoto Protocol – the international agreement addressing climate change - covers these seven main GHGs. The last four are fluorinated gases ("F-gases") which are a range of man-made compounds (including HFCs, PFCs, SF₃ and NF₃) used in a variety of industries including refrigeration, air-conditioning and the manufacture of cosmetics, pharmaceuticals, electronics and aluminium. F-gases are extremely potent greenhouse gases with some having GWPs of several thousand or more (BEIS, 2019a). The greenhouse gases covered by the Kyoto Protocol account for over 99% of global greenhouse gas emissions.

6. Using CO₂e as a measuring tool means that the different global warming potential (GWP) of different gases are taken into account. Quantities of GHGs are multiplied by their GWP to give results in units of carbon dioxide equivalent (CO₂e)

7. Global warming potential. A factor describing the radiative force impact (degree of harm to the atmosphere) of one unit of a given GHG relative to one unit of CO₂.

8. Decarbonisation means reducing the carbon intensity of energy in the national grid, this is achieved by reducing the proportion of fossil fuels and increasing the proportion of renewable energy sources such as solar and wind.

9. Emissions are from the SCATTER inventory tool and reported as CO₂ equivalences www.scattercities.com

10. Imported consumption emissions have been calculated based on a per capita allocation of data from

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794557/Consumption_emissions_April19.pdf

11. Based on Office of National Statistics (ONS) UK 2018 population for Blaby District (100,421)
12. <https://www.gov.uk/government/statistical-data-sets/total-final-energy-consumption-at-regional-and-local-authority-level>
13. <https://www.gov.uk/government/publications/environmental-reporting-guidelines-including-mandatory-greenhouse-gas-emissions-reporting-guidance>
14. <https://carbonbudget.manchester.ac.uk/reports/E07000129/>
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20. <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>
21. This uses a range of BEIS data released in 2019 for 2017 Consumption, and 2018 datasets were available for renewable generation. 22 <https://www.gov.uk/government/publications/sub-national-electricity-and-gas-consumption-statistics-analysis-tool> and <https://www.gov.uk/government/statistics/regional-renewable-statistics>

22. https://archive.ipcc.ch/pdf/special-reports/srex/SREX-Annex_Glossary.pdf