

# Carbon Reduction Delivery Strategy

2020-2030



## **Vision**

*By 2030, the council's own operations will be clean and efficient, and we will play a positive role enabling the wider borough to achieve net-zero emissions.*



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**1**

# SECTION ONE

Introduction and Scope



## Introduction and Scope

Climate change is a long-term threat, which needs to be addressed now because our economy and infrastructure are built around existing or historic climatic conditions. To tackle this, we are committed to achieving the carbon neutral ambition by 2030.

This Carbon Reduction Delivery Strategy sets out the approach that Bedford Borough Council will take to become Carbon Neutral by 2030, that is the key aim of this strategy.

It explains where we are to date, and the future actions the council will need to take as a whole to meet this carbon neutral ambition. It also touches on some carbon reduction activities being undertaken by the council already to achieve the objective of reducing emissions of climate changing greenhouse gases.

### Key Points:

- *The effects of climate change are being felt in the UK and abroad. The international consensus on tackling climate change is reflected in UK policy, which has imposed legally binding national carbon reduction budgets.*
- *The council has a corporate responsibility, both as a large employer and a community leader, to take action to reduce its own emissions.*
- *The council supports measures to address the climate emergency as outlined by the UN Intergovernmental Panel on Climate Change (IPCC), and we intend to meet IPCC targets and the carbon neutral ambition by 2030.*
- *The scope of the carbon reduction strategy is mainly focused on our internal operations where we can have the greatest influence.*
- *We will also support efforts in the borough as a whole to reduce carbon emissions, generate, and use energy more cleanly.*
- *As well as contributing to legal targets to combat climate change, reducing carbon emissions often also results more immediate local benefits such as lower energy bills, cleaner air, improvements to health, better quality housing and economic benefits.*
- *We will regularly review this strategy and action plan to ensure that it is up to date and continues to meet our needs.*

The latest Intergovernmental Panel on Climate Change (IPCC) report in 2018<sup>1</sup>, states that human activities are estimated (with high confidence) to have caused approximately 1°C of global warming above pre-industrial levels. Global warming is likely to reach 1.5 degrees between 2030 and 2052 if it continues to increase at the current rate. To continue following this path would mean around a 50% chance of a rise in global average temperature of more than 4°C by 2100. An increase in global temperatures of this magnitude would increase the likelihood of some extreme weather events for example:

- *Extremely hot weather and heat waves are likely to increase in frequency, magnitude and length. Conservative projections estimate that a 1-in-20 year hottest day is expected to become a 1-in-2 year event by the end of the century.*
- *Longer dry periods are expected to be accompanied by heavier rains. Comparable projections indicate that a 1-in-20 year rainfall is likely to become a 1-in-5 to 1-in-15 year event.*
- *Mean sea level rises are likely to contribute to upward trends in extreme coastal high water levels in the future, which may be exacerbated by more intense storms.*



1. <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments>

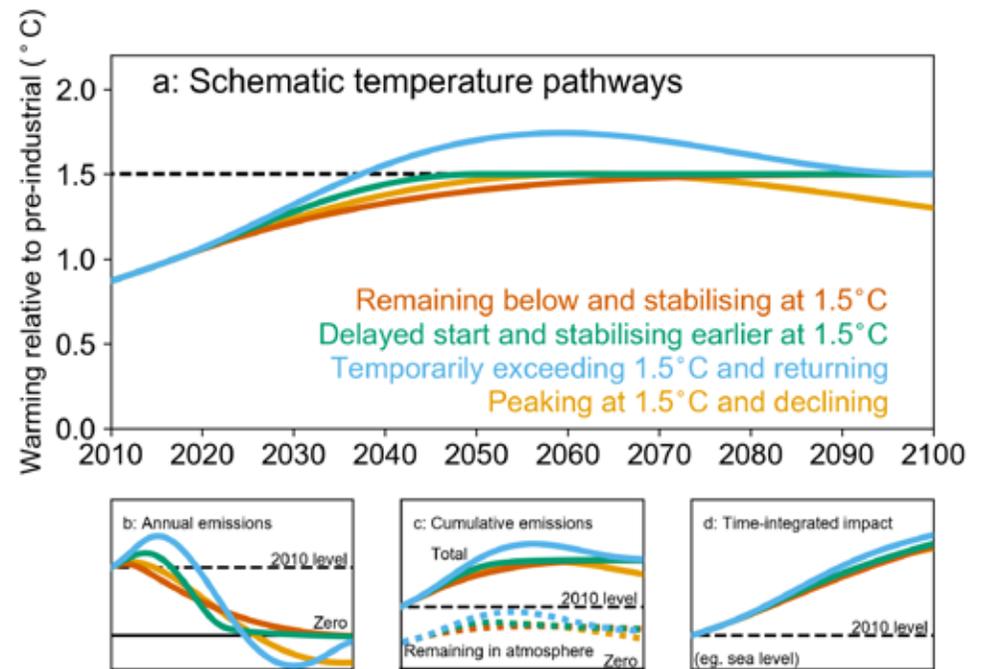
The IPCC report has suggested that we are already seeing the consequences of 1°C of global warming through more extreme weather, rising sea levels and retreating Arctic sea ice. Ice sheet instability in Antarctica and/or irreversible loss of the Greenland ice sheet could result in multi-metre rise in sea level over hundreds to thousands of years. By 2100 global sea level rise would be 10cm higher if temperatures increases above 1.5 - 2 degrees and the Arctic Ocean would be free of sea ice in summer once every 10 years (compared to once every century). Limiting the warming to 1.5 degrees, rather than the 2 degrees agreed at the Paris convention in 2015, would enable people and ecosystems time to adapt and reduce the risks of complete loss of environments such as, low-lying coastal areas and coral reefs.

However, limiting global warming to 1.5 degrees requires ‘rapid and far reaching’ transitions in land, energy, industry, buildings, transport and cities. Emissions of carbon dioxide would need to fall by around 45% from 2010 levels by 2030, reaching ‘net zero’ around 2050.

The UK, through the Climate Change Act in 2008, is going some way to achieve this with the aim to reduce greenhouse gas emissions, so far achieving 42% reduction compared to 1990 levels. In 2019, the UK government passed legislation that requires the UK to achieve net zero by 2050.

Ambitious action from authorities, private sectors and local communities is required where society needs to change its laws, infrastructure etc. and commit resources to address this emergency and to make low carbon living the new norm.

IPCC Graph - Schematic temperature pathways



Source: <https://www.ipcc.ch/sr15/graphics>



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# SECTION TWO

Policy Context

## 2. Policy Context

This strategy sits within a framework on national regional and local policies relating to energy, emissions and climate change.

The **UK target** is now to **reduce greenhouse gas emissions to zero by 2050**

**The council's corporate plan** states that we will  
**“manage and maintain the local environment well”.**

**At the wider scale**, a number of external strategies and other activities are being developed/implemented alongside this strategy in order to  
**lead the region towards becoming a zero carbon economy.**



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# SECTION THREE

Aims, Objectives, Targets and Priorities



## 3. Aims, Objectives, Target and Priorities

### Our aim is to:

#### Become a Carbon Neutral Council by 2030.

- Our aims are linked to the national legally-binding carbon reduction targets
- Bedford Borough Council declared a Climate Emergency in March 2019
- We will monitor carbon emissions from our own operations and publish these figures annually.

As part of this aim, the Council has agreed 10 objectives for the Council to reach Carbon Neutral by 2030:

1. Incorporate the carbon neutral ambition by 2030 into all Council strategies, work plans and policies including Corporate Plan, Local Plan, Procurement Policies, Finance strategies etc.
2. Consider opportunities to increase Green investment
3. To buy 100% renewable electricity through energy contracts
4. Generate renewable energy, at the best locations to reduce grid electricity, increase stability of supply and avoid price increases
5. Reduce Council energy usage, through behaviour change and implementation of further projects through the council's current capital Carbon Management Fund
6. Any unavoidable emissions to be offset against local community projects e.g. tree planting, maximising green area allocations, green walls/roofs

7. Replace BBC owned vehicles with suitable electric or hydrogen models when appropriate replacements are available, with immediate moratorium on fossil fuel vehicles under 3.5t , as well as promote sustainable transport alternatives
8. Work with partners to share best practice
9. Ensure that Council buildings (estates team) has a programme of work to improve EPC ratings
10. Work towards the government's goals of no new gas heating from 2025, sooner where possible and 'road to zero' (phase out of petrol and diesel cars) by 2035, again sooner where replacements are available.

### 3.1 Emissions from our own operations

Using the greenhouse gas report 2018/19 data, the below table shows the baseline which will be used to measure the carbon reduction targets year on year.

Council Controlled	2018/19 Tonnes of CO <sub>2</sub>
Council buildings (electric and heating fuel)	4,953 tonnes
Owned Transport (fleet and social care)	2,159 tonnes
Business travel (scope 3 indirect, inc. air, rail)	164 tonnes
Total Tonnes	7,276 tonnes

### 3.2. Steps to implement the Council's Carbon Reduction Delivery Strategy

The first step in implementing a programme of this scale is to identify the resources (both revenue and capital) needed to fund the investigation work. This work will require technical advice and project feasibility studies to be undertaken to help the council to identify, quantify the financial implications (capital funding and, primarily, revenue savings) for the delivery and sustainability of the project(s). This information will then enable suitable business cases to be created and results added to the council's medium term financial strategy (MTFS).

To tackle internal emissions we have chosen three priority areas as detailed below:

1. *Operational council buildings*
2. *Owned Transport*
3. *Business Travel*

#### Priority Area 1: Operational Council Buildings

Gas and electricity consumption in our operational buildings account for 68% (4,953 tonnes) the council's internal carbon footprint.

Operational buildings include our offices, depots, museums, corn exchange, libraries, care homes, and many other small sites. In future years, we expect significant decarbonisation of electricity. The ambitious challenge in meeting our 2030 carbon neutral target will be to decarbonise our heating supplies.

#### Action Plan:

Incorporate energy efficient design in the council's public building repairs and construction projects by aiming for Building Research Establishment Environmental Assessment Method (BREEAM) score of Outstanding in new public building construction projects, where practical to do so.

#### We will also:

- *Reduce unnecessary energy consuming equipment*
- *When necessary, purchase only energy efficient equipment*
- *Enhance buildings with the use of green energy technology*
- *Comply with Building Regulations (noting the updated changes to Part L.) Increasing standards where practicable to do so.*

Continually improve energy efficiency and sustainable energy in the council's existing public building estate by:

- *Actively reviewing assets to identify where energy efficiency improvements can be made*
- *Identifying existing sites which could be suitable for green technologies*
- *Considering energy efficiency as part of any reactive repair or refurbishment work by reducing energy-using equipment and using energy efficient equipment*
- *Complying with Building Regulations Part L. Increasing standards where practicable to do so*
- *Obtaining Energy Performance Certificates and Display Energy Certificates are required, and considering the recommendations from this process*
- *Seek opportunities for decarbonising heating in existing and new buildings.*

## Priority Area 2: Owned Transport

Council owned Transport accounts for 30% (2,159 tonnes) of the council's internal carbon footprint based on 2018/19 greenhouse gas data.

The council runs a fleet of approx. 211 vehicles (excluding tractors, quadbikes, grass-triples) covering a wide range of operations.

### Action Plan:

Continually improve fleet efficiency by:

- *Ensuring our vehicle fleet are maintained to a high standard, therefore maximising efficiency*
- *Optimising refuse and gritting fleet routes*
- *Ensuring all fleet drivers are trained as part of their Certificate of Professional Competence qualification in the ability to optimise fuel consumption*
- *The Council will not purchase any more fossil fuel vans (under 3.5t) and will replace our fleet with electric vehicles over the coming years.*

### Priority Area 3: Business Travel

Council Business Travel accounts for 2% (164 tonnes) of the council's internal carbon footprint. Authorised staff use their own cars and public transport for business travel.

#### Action Plan:

- *Encourage staff to adopt sustainable transport options such as cycling and walking, car sharing, public transport and ultra-low emission vehicles*
- *To explore the options for using electric pool vehicles (EVs) for business travel*
- *Consider a corporate Smart Travel Plan for staff and members to reduce our carbon impact through cutting the amount of travel (e.g. video conferencing), using cars more efficiently and switching to public transport, walking and cycling*
- *Providing realistic alternatives to lone driving (also known as 'single occupancy car use'); making these alternatives more attractive; and*
- *Reducing people's need to travel, for example through flexible working practices.*

### 3.3. Other Contributions to Carbon Neutral Target

#### Working Practices

Although not always measurable in terms of CO<sub>2</sub> emitted, it is essential to ensure that the council's working practices help achieve positive outcomes across all three priorities. This can include how we select our suppliers, how staff and councillors use our buildings and deal with inefficiencies and engage with new initiatives.

#### Action Plan:

- *Ensure all new starters understand the council's environmental aims and policies, as part of induction training*
- *Engage staff and encourage action via internal communications and other initiatives*
- *Embed green procurement practices within procurement policy to include carbon considerations within tenders and avoid just outsourcing carbon emissions*
- *Continue the delivery of the digital transformation projects, to enable remote access to services online, to reduce printing and promote efficient use of services e.g. equipping staff with collaborative technology equates to less travel.*



## Offsetting

In order to offset any unavoidable CO<sub>2</sub>e emissions, the Council will need to explore additional measures, such as promoting carbon sequestration through sustainable woodland management or investing in large-scale renewable energy generation. Local, borough based offsetting activities will be prioritised, increasing the benefits to local residents and local environment. It is important to note, however, that carbon offsetting is not enough to achieve the net zero target on its own – success relies on maximising demand reduction and renewable electricity generation as a high priority.

### Action Plan:

- *Investigate Local initiatives the Council can invest in that will enable achievement of the Carbon Neutral target.*

Priority Areas 1-3, Working Practices and Offsetting will have direct and indirect benefits that will be realised during this work to reduce carbon. These benefits will be reported on whether they have been measured as affecting the CO<sub>2</sub> emissions of the Council, or, if they have benefitted the local community and environment.



# 4

## SECTION FOUR

What the Council has achieved so far

The Council is continuously working to reduce its carbon emissions by implementing projects, which will reduce the amount of energy the Council's buildings consume and encourages the residents and businesses of the Borough to be more energy efficient.

Examples of projects the Council has implemented over recent years include:



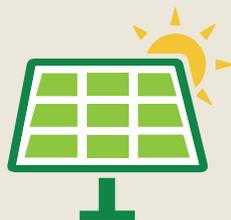
**Upgrading the streetlights to LED lanterns across Bedford Borough**

Upgrading the lighting at Bedford I-Lab, Bedford Central Library and other public buildings

**Upgrade to Borough Hall lighting (5 floors changing to smart LEDs)**

Upgraded the lighting at multi-storey car parks in Bedford Borough

**Refurbished residential care homes to a high quality and standard, including better lighting and moving from oil to gas heating**



**Installed 8 solar array systems** on various council buildings

**Installed evaporative cooling** – saving energy and money by not using air conditioning in the Council's data centre



A reduction of **62% carbon emissions** on its own Council buildings from 2009/10 baseline

**Installing over 300 electric vehicle charge points** across the borough



**Replacing and reducing the number of transformers in Borough Hall basement** (this equipment is very old and out of date)

Utilising the renewable power from the local river, the **Hydro Power Facility** has generated income and also educates the local community on alternative sources of energy



Reduce fleet emissions by changing from conventional diesel to **Gas to Liquid fuel (GTL)**

Through the **Mayor's Climate Change fund** in 2011-2015, helped fund local community projects to save energy (e.g. energy efficient lighting, insulation, solar)



Investigating possibilities of an **Energy Park** at a closed landfill site to include anaerobic digestion, ground source heat pumps, solar and battery storage





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# SECTION FIVE

Monitoring and Reporting



## 5. Monitoring and Reporting

### 5.1 What is Carbon Neutral?

Bedford Borough Council is using the term ‘Carbon Neutral’ as short hand for the ‘Net Zero Carbon’ definition – the Council will aim to measure emissions, reduce as much as possible and then offset the unavoidable emissions through good quality offsets.

<b>Carbon Neutral</b>	<ul style="list-style-type: none"> <li>• Offset emissions against a measured footprint. Specified by PAS 2060</li> <li>• Mandatory carbon reduction and management plan</li> <li>• Requires offsets providing genuine and additional GHG reductions</li> </ul>
<b>Net Positive</b>	<ul style="list-style-type: none"> <li>• Enabling effect (avoided emissions) of products and services is greater than emissions</li> </ul>
<b>Carbon Zero</b>	<ul style="list-style-type: none"> <li>• Zero emissions</li> </ul>
<b>Net Zero Carbon</b>	<ul style="list-style-type: none"> <li>• Aim to get as close to zero as possible, then offset residual emissions with good quality offsets</li> </ul>
<b>Carbon Positive product</b>	<ul style="list-style-type: none"> <li>• Product removes GHG from the atmosphere over its life cycle – e.g. bioplastics, wooden furniture</li> </ul>
<b>Carbon Positive organisation</b>	<ul style="list-style-type: none"> <li>• Organisation exports renewable energy greater than its equivalent emissions. Organisation uses carbon removal technology (e.g. BECCS) such that removals are greater than emissions.</li> </ul>

### 5.2 Reporting Process

We will prepare and publish an annual progress report via the council’s Climate Change Committee and the relevant Cabinet portfolio holder.

#### Emissions:

For internal emissions, we will continue to measure and publish our annual carbon footprint, the scope of which is defined as:

- Energy and fuel consumption in our public buildings and offices (where the council is the bill-payer) i.e. electricity (scope 2), natural gas and other heating fuels (scope 1). Monitored via automatic meter data and utility bills.
- Fuel consumption by the council’s own vehicle fleet and machinery. Monitored via internal fuel records (scope 1).
- Emissions from business travel carried out in employees’ and councillor’s own vehicles (the “grey fleet”). Monitored via payroll mileage claims (scope 3).

The Council will follow the Defra guidance and continue to report its direct emissions measured as Scope 1, 2 and will measure its indirect emissions through business travel as Scope 3.

Category	Description	Data used in this analysis
<b>Scope 1</b>	Direct emissions from sources owned or controlled by the reporting organisation	<ul style="list-style-type: none"> <li>• Metered gas data (for buildings where the Council pay the gas bills) (kWh and £)</li> <li>• Mileage for Council-owned vehicle fleet and pool cars, along with vehicle make/model and age</li> </ul>
<b>Scope 2</b>	Indirect emissions from the generation of energy purchased by the reporting organisation	<ul style="list-style-type: none"> <li>• Metered electricity data (for building where the Council pay the electricity bills) (kWh and £)</li> <li>• Note that where data was unavailable, CIBSE Guide F 2012 'typical practice' benchmarks for 'local government office' have been used to estimate fuel consumption</li> </ul>
<b>Scope 3</b>	Indirect emissions that result from other activities that occur in the value chain of the reporting organisation, either upstream or downstream	<ul style="list-style-type: none"> <li>• Records of business travel by the Councils' employees</li> </ul>



### 5.3 Reviewing

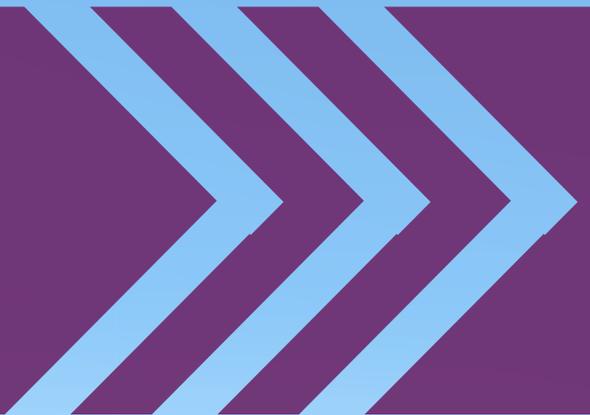
The national policy context for addressing climate change is continually evolving, so we will review this strategy regularly to ensure that it continues to meet our aims and priorities.



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## SECTION SIX

Resources



## 6. Resources

Due to the Action Plan covering a ten-year period, much of the work required to be undertaken to become carbon neutral needs to be fully explored and evaluated to provide the best route both from an efficiency and sustainable view point. All this work is subject to identifying funding and meeting a suitable business case for the delivery of a number of projects to assist delivery of the council's objective of carbon neutral by 2030.

The current resources and commitment below (both from the financial resources of the council and the actions in the Action Plan table) will enable the council to start the planning and delivery of this work whilst identifying a detailed delivery plan spanning the next ten years to meet the council's objective.

- *Capital Carbon Management Budget currently £440k for 2020/21*
- *Climate Change Fund £400k (to assist the council and the community to deliver carbon saving projects).*

The work in relation to getting the council to carbon neutral at this stage is forecasted to require £2-4 million of capital funding, along with a yearly revenue budget to allow extra resources to help deliver this work programme. As this work progresses a more accurate forecast will be able to be provided, together with robust business cases, which will then be considered by the council's capital-funding programme.

The costs of delivery of the carbon neutral objective to the council is subject to ongoing progression in technology and solutions to find the most sustainable projects. The council should be mindful of future changes which may impact the council's own carbon neutral work and any decisions are not to be taken lightly, making sure the most suitable solutions are taken forward ensuring the public purse is used effectively. The council will deliver projects over the period of the strategy 2020-2030; however, no timescales and performances per year can be set or forecasted at this stage until further professional analysis has been undertaken.

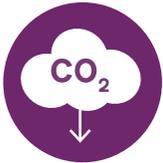
This work highlights that there are significant challenges in reducing energy demands and offsetting any remaining CO<sub>2</sub> emissions.

The Council will need to actively work towards enabling the following:



*In buildings, it will be necessary to reduce heat and power demands through fabric efficiency improvements and behavioural change. In addition to investing in the existing building stock, this means ensuring that any future development achieves a high standard of energy efficiency in order to minimise any increase in fuel consumption. Long term, all buildings will need to switch from gas / fossil fuels to low and zero carbon heat sources.*

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*Uptake of low and zero carbon (LZC) technologies and battery storage within the Councils' own stock will reduce reliance on fossil fuels, reduce pressure on existing utility infrastructure, improve security of supply, and mitigate against price fluctuations.*

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*A transformation in the transport sector must take place, which would replace all existing vehicles with low and zero emission vehicles. In addition, it will be necessary to reduce vehicle use / mileage through behavioural change and modal shift.*

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*A key challenge for the council is the fact that much of the emissions from vehicles are due to HGVs, and due to technological factors, it is less certain that zero emission models will become commercially available by 2030. This suggests that careful route planning and other marginal efficiency improvements should continue to reduce HGV mileage as much as possible.*

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*In order to offset any remaining CO<sub>2</sub> emissions, the Council will need to explore additional measures, such as promoting carbon sequestration through sustainable woodland management or investing in large-scale renewable energy generation. It is important to note, however, that carbon offsetting is not enough to achieve the net zero target on its own – success relies on maximising demand reduction and renewable electricity generation as a high priority.*

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The supporting action plan detailed in section 7 of this strategy will aim to support the Council in delivering the intervention measures required to realise the carbon neutral ambition. The action plan covers the following areas: Supporting grid decarbonisation; Demand reduction; Low carbon heating systems; Building integrated renewable energy generation and storage; Low carbon transport and Offsetting. Consideration is given to measures that would directly impact CO<sub>2</sub>e emissions from the Councils' own operations.

### **6.1 Conclusion**

The route towards becoming carbon neutral will require a strong level of ambition and commitment, backed up by significant interventions and investment across the Councils' operations. Although meeting the carbon neutral ambition will rely upon various factors outside of the Councils' control, such as the decarbonisation of the grid and availability of key technologies, the fundamental steps required to deliver the net-zero target are clear and, with strong leadership from all areas of the Council, these can be set into action now.



# 7

## SECTION SEVEN

Carbon reduction action plan 2020 - 2022



**BEDFORD**  
BOROUGH COUNCIL

## 7. Carbon reduction action plan 2020 - 2022

The actions detailed in the table below will have both direct and indirect benefits that will be realised during this work to reduce carbon. These benefits will be reported on whether they have been measured as affecting the CO<sub>2</sub> emissions of the Council, or, if they have benefitted the local community and environment.

<b>Priority Area 1: Operational Council Buildings</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost/ Resource requirement</b>	<b>Estimated saving per year / payback/ benefit</b>	<b>Estimated CO<sub>2</sub> reduction (direct/ indirect)</b>
Fuel switching	Procurement of green electricity (100% renewable) through existing electricity contracts.	Short term – 100% Green electricity by April 2020	Up to £10,000/ year on BBC sites invoices  No additional staffing required	No expected savings.  Additional benefit - Utilising purchasing power to shift the UK power supply to renewable energy, reducing GHG emissions nationally and reducing the carbon footprint associated with purchased electricity.	Direct impacts may include the carbon conversion factor is adjusted in line with the amount of electricity produced through Fossil Fuels vs renewables (indirect)
Investigate opportunities for further renewable generation schemes e.g. solar PV on council owned buildings. Moving towards decarbonised energy	Installation of renewables will substitute carbon emissions from fossil fuels. On-site renewables will lead to self-sufficiency. A decarbonised energy supply would see energy which is renewably generated, locally, off-grid, and supplied directly to the usage demand on site.  Decentralised energy projects can generate lasting cost and carbon savings, and protect against future energy price rises	Long term ongoing projects up to 2030	Solar PV costs are currently around £750-£1000 / KW  Technical advice and project feasibility studies need to be undertaken to help the council to identify, quantify and progress the most cost effective sustainability and carbon reduction projects. Consultant fees in the region of £15,000 - £60,000.	Depends on the usage of the site, typically under 10 years. Protects against electricity cost increases.  Significant benefits in supporting operational costs and security of supply for Council buildings where heat pumps, batteries and EV charging points are installed in future	Utilising renewable generated energy is vital to reducing CO <sub>2</sub> and energy demand from our sites. To be fully green, our electricity and heating will need to come from renewable sources can be (direct)

<b>Continued... Priority Area 1: Operational Council Buildings</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost/ Resource requirement</b>	<b>Estimated saving per year / payback/ benefit</b>	<b>Estimated CO<sub>2</sub> reduction (direct/ indirect)</b>
Improve/ Install energy efficiency and smart energy in existing buildings through Carbon Management Capital Scheme	Energy savings achieved, reduced energy consumption and costs	Medium - Long term ongoing projects up to 2030	Capital Carbon Management Budget currently £440k for 2020/21  Further technical advice and project feasibility studies need to be undertaken to help the council to identify, quantify and progress the most cost effective sustainability and carbon reduction projects. Consultant fees in the region of £15,000 - £60,000.	Individual measures required to have a pay-back period of 10 years or less	Will contribute to the Councils Carbon Neutral target – exact CO <sub>2</sub> reduction project savings dependant on technical feasibility surveys (direct)
Improved design of new and refurbished buildings – BREEAM Outstanding desired	Higher standard buildings result in lower maintenance costs and lower energy bills, ensuring the running costs of the building are low	Long term ongoing up to 2030	The cost uplift of achieving BREEAM UK Excellent ratings is typically less than 1% of the total construction cost (0.4%), Outstanding rating is around 5%-10% cost uplift.  Building Design Advice to work with the council property unit to achieve low and zero carbon buildings, with low running costs and whole life costs. Building Design Advice fees in the region of £10,000 - £50,000.	Excellent rating -Typically less than five years for energy and less than two years for water	66% for Outstanding rated buildings, Excellent 32% (Average CO <sub>2</sub> emissions savings associated with different BREEAM ratings) are 66% for Outstanding rated buildings, Excellent 32% (direct)

<b>Continued... Priority Area 1: Operational Council Buildings</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost/ Resource requirement</b>	<b>Estimated saving per year / payback/ benefit</b>	<b>Estimated CO<sub>2</sub> reduction (direct/ indirect)</b>
Consider adjustment to building opening hours	Energy will be saved when buildings are not in use	Medium - Long term ongoing up to 2030	Unknown at this time pending further evaluation and options	Unknown at this time pending further evaluation and options	Unknown at this time pending further evaluation and options (direct)
Further investment such as large solar and battery schemes. Either installed by the Council or a PPA with a local company is arranged	Power Purchase Agreements (PPA) can be arranged to ensure that the Council is buying 100% local renewable energy, which will reduce its overall carbon footprint.	Long term ongoing up to 2030	£Xm depending on size of system if Council installed.  Technical advice and project feasibility studies need to be undertaken to help the council to identify, quantify and progress the most cost effective sustainability and carbon reduction projects. Consultant fees in the region of £15,000 - £60,000.	Unknown at this time pending further evaluation and options	Unknown but an example would be that 3.5MW of solar at 3,325MWh/year, expected CO <sub>2</sub> savings would be 940 tonnes/ year (direct)
Consideration of heat networks and moving away from natural gas heating	No new gas supplies are to be installed post 2025, Council needs to consider alternative technology to sufficiently heat buildings	Medium to Long term (2025 onwards)	Unknown at this time pending further evaluation and options.  Access specialist technology expertise to undertake project feasibility studies to identify, the most cost effective projects. Consultant fees in the region of £10,000 - £50,000.	Unknown at this time pending further evaluation and options.  A heat network could offer higher reductions than individual systems with lower capital and operational costs.	Moving away from gas will have reductions on CO <sub>2</sub> . CO <sub>2</sub> e reduction depends on which buildings are connected. A heat network could offer higher reductions than individual systems with lower capital and operational costs. (direct/ indirect)

<b>Continued... Priority Area 1: Operational Council Buildings</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost/ Resource requirement</b>	<b>Estimated saving per year / payback/ benefit</b>	<b>Estimated CO<sub>2</sub> reduction (direct/ indirect)</b>
Heating system replacements to heat pumps	Review heating replacements for council buildings to identify opportunities to switch to heat pumps	Medium to long term	Indicative costs of installing a heat pump are around £500-1000/kW for non-domestic buildings. (If replacing with a gas boiler costs are around £60-100/kW for non-domestic)	Unknown at this time pending further evaluation and options	Research indicates that switching to heat pumps could potentially reduce the CO <sub>2</sub> e emissions of each site by 20-80% by 2050, subject to electricity grid decarbonisation. (direct/ indirect)
Ensure Minimum EPC standards (MEES) across council owned buildings	Surveys and improvement works to bring existing buildings up to MEES standards	Short term 2020  Ongoing as regulations update	Unknown at this time pending further evaluation and options.  This may be budgeted through Property Services budget	Unknown at this time pending further evaluation and options.  Improvements to building fabrics will improve efficiency and reduce running and maintenance costs of buildings	Improvements to building fabrics will improve efficiency of buildings, therefore reducing CO <sub>2</sub> (direct)

<b>Priority Area 2: Owned Transport</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost</b>	<b>Estimated saving per year / payback</b>	<b>Estimated CO<sub>2</sub> reduction</b>
Look for opportunities for increasing the number of EV or hydrogen fleet vehicles.	Reduced fleet emissions, supporting Local Transport Plan, Sustainability strategy	Medium to Long term – up to 2030	Costs will depend on technology readiness, the state of the EV market and Government incentives at the time of investment (plug in van grant)	Lower running costs (3p/ mile). Electric vans are also exempt from vehicle excise duty (VED) = £750 saving over three years.	This will remove the CO <sub>2</sub> emitted by fleet vehicles and therefore contribute to the carbon neutral target (direct)
Hold awareness raising sessions and/or campaigns for staff to drive efficiently.  (Alongside regular awareness via internal communications).	Increasing the efficiency of the fleet will reduce both carbon emissions and fuel costs	Ongoing	Subsidy payment, funded by the Department for Transport, is £25 (inc. VAT) per person trained. Courses are free for instructing drivers on electric vehicle driving (Energy Saving Trust)	Ecodriving training delivers average fuel savings of 15% on the day of training and up to 6% in the long-term for fleets. Potential cost savings due to lower demand for fuel, maintenance etc.	This will reduce the CO <sub>2</sub> emitted by fleet and therefore contribute to the carbon neutral target, 1000 litres is roughly equivalent to 2.7tonnes CO <sub>2</sub> (direct/ indirect)
Pilot the use of electric refuse trucks	Reduce fleet emissions	Short Term - By 2022	Unknown at this time pending further evaluation	Unknown at this time pending further evaluation	This will remove the CO <sub>2</sub> emitted by refuse trucks and therefore contribute to the carbon neutral target (direct/ indirect)
All fleet vehicles to be minimum Euro 6 standard, or ultralow emissions, where possible	Reduce fleet emissions	Short term: Euro 6 – By 2021 Long term: Ultra-low – By 2028	Unknown at this time pending further evaluation and options	Unknown at this time pending further evaluation and options	Unknown at this time pending further evaluation and options (direct/ indirect)
Review BBC fleet and replacement plans	Conduct an audit of vehicle fleet to assess opportunities for renewal with zero emission alternatives – Energy Saving Trust Fleet Review	Short term - 2020	Internal action & Energy Saving Trust offers a free evaluation	This action relies upon the technology to become available and cost effective by the time the replacement is due	Unknown at this time pending further evaluation and options (direct/ indirect)

<b>Priority Area 3: Business Travel</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost</b>	<b>Estimated saving per year / payback</b>	<b>Estimated CO<sub>2</sub> reduction</b>
Establish salary sacrifice Scheme for electric vehicle purchasing	Incentive for increased take up of EVs	By 2025	Unknown at this time pending further evaluation	Unknown at this time pending further evaluation	This will reduce the CO <sub>2</sub> emitted by staff travel and therefore contribute to the carbon neutral target (direct/ indirect)
Hold awareness raising Sessions and/or campaigns for staff on sustainable transport (alongside regular awareness via internal communications).	Increased take up of sustainable transport modes	Short term	Internal staff training – transport team, or external training by SusTrans	Potential reduction in staff business mileage claims	This will reduce the CO <sub>2</sub> emitted by staff travel and therefore contribute to the carbon neutral target (direct/ indirect)
Review if facilities and cycle networks within the borough are fit for purpose, to make cycling an attractive option for staff.	Increased take up of sustainable transport modes	Short term	Internal staff checks	None	Unknown at this stage (direct/ indirect)
Improve cycling provision: secure bike parking / lockers and drying cabinet(s)	Promotes cycling as an alternative to one person car trips	Short term	Unknown at this time pending further evaluation	Each cyclist frees up a car park space, saving several hundreds of pounds per space annually.	1% year on year increase in cycle mode share. (Each cyclist saves 0.22 tonnes CO <sub>2</sub> per year over a car driver) (direct/ indirect)

**Continued... Priority Area 3: Business Travel**

Action	Planned Outcome/ Impact	Timeframe (Short-Long term)	Total estimated cost	Estimated saving per year / payback	Estimated CO <sub>2</sub> reduction
Establish an EV pool car scheme	Reduce number of staff travelling within Bedford as part of workday	Long term	Unknown at this time pending further evaluation	<p>Mileages, fuel consumption and traffic incidents can be better monitored and managed.</p> <p>Reducing unnecessary travel as not incentivised by mileage reimbursement rates.</p> <p>Facilitating car sharing, if the pool car booking system allows this and understood by staff.</p> <p>Reducing demands for parking for private vehicles, and reduces the need for private car ownership for some staff, depending on their circumstances.</p>	This will reduce the CO <sub>2</sub> emitted by staff travel and therefore contribute to the carbon neutral target (direct/ indirect)
Consider changing guidance to make the use of pool cars rather than private cars the preferred option	Incentivise use of EV pool cars and reduce number of petrol/ diesel cars on the roads	Long term	Unknown at this time pending further evaluation	As Above	This will reduce the CO <sub>2</sub> emitted by staff travel and therefore contribute to the carbon neutral target (direct)

<b>Continued... Priority Area 3: Business Travel</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost</b>	<b>Estimated saving per year / payback</b>	<b>Estimated CO<sub>2</sub> reduction</b>
Online (Intranet) pool car booking service to monitor bookings and unavailability electronically	Incentivise and simplify use of EV pool cars and reduce number of petrol/ diesel cars on the roads	Long term	Depending on demand of the cars, may result in purchasing additional pool cars to meet demand	Allows for car share where travelling at identical times (might be flagged in the booking system).  Prevents concurrent booking of the same car to different drivers.  Allows car share for those travelling at nearby times, or could go in one car and return with someone else.	This will reduce the CO <sub>2</sub> emitted by staff travel and therefore contribute to the carbon neutral target  (direct)
Promote car sharing for journeys to meetings	Halves the business miles claimed by staff and reduces number of cars travelling	Short Term	Minimal cost, staff promotion and communications	Two people car sharing frees up a car park space, saving several hundreds of pounds per space annually.	Carbon emissions reduced for the Council and for local area. 100 people car sharing = average 51 tonnes CO <sub>2</sub> per year  (direct/ indirect)
Establish more 'hub' areas around Bedford, support and encourage home working	In addition to home working expand remote working in other / partner locations across the borough to reduce unnecessary travel and the need for central office accommodation	Long term	Potential costs to ensure IT services sufficient at remote sites	Savings on business mileage claims	Carbon emissions reduced for the Council and for local area  (direct/ indirect)

<b>Working Practices</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost</b>	<b>Estimated saving per year / payback</b>	<b>Estimated CO<sub>2</sub> reduction</b>
Establish an informal staff environmental group	Increased awareness and engagement	Short term	None	Enabling Action - empowering individuals	Enabling Action - empowering individuals (direct/ indirect)
Incorporate environmental awareness online induction training for staff	Increase awareness of environmental impacts and behaviour change for all staff	Short term – By 2021	Unknown at this time pending further evaluation and options, some options are free.	Could save up to 10% in energy costs	Unknown at this time (direct/ indirect)
Review and update the corporate policies e.g. Corporate Plan, Local Plan etc.	Ensure Carbon Reduction is a whole Council importance	Short term – By 2021	Unknown at this time pending further evaluation and options	Enabling Action - empowering individuals	Enabling Action - empowering individuals (direct/ indirect)
Embed the 2030 carbon neutral ambition across the entire council	Ensure Carbon Reduction is a whole Council importance, developing strategies and plans for each department within the council	Short term – By 2021	Unknown at this time pending further evaluation	Enabling Action - empowering individuals	Enabling Action - empowering individuals (direct/ indirect)
Work with ICT and facilities to maximise potential for web and video conferencing	Reduces the need to travel to face-to-face meetings. The widespread adoption of webinars, Jabber and teleconferencing will remove the need to travel between sites for meetings	Short term – By 2021	Unknown at this time pending further evaluation and options – licensing costs could apply	Teleconferencing instead of travelling to a meeting could save £240 per person per year	Indirect CO <sub>2</sub> reduction linked to reduced travel, however potential for increase in direct emissions through own energy use (indirect)

<b>Continued... Working Practices</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost</b>	<b>Estimated saving per year / payback</b>	<b>Estimated CO<sub>2</sub> reduction</b>
All Council reports to consider the carbon impact/ environmental impacts from any recommended decision	Guidance on providing information on carbon impact of decision to be developed	Short term – By 2021	Unknown at this time pending further evaluation and options	Savings would be attributed to the whole life cost of the decision. Savings likely to be a result of maintenance savings and lower/ avoided energy costs	Increased awareness and assessment of potential impacts will lead to better management and reduction of CO <sub>2</sub> emissions (direct/ indirect)
Update procurement policy to include carbon and environment considerations within tenders	Through procurement strategy, only procure high energy efficient/low carbon technologies/ materials	Short term – By 2021	Likely to impact costs of tenders, with the assumption that more environment conscious contracts will cost more, but this is subject to a case by case evaluation	Savings would be attributed to the whole life cost of the contract. Savings likely to be a result of maintenance savings and lower/avoided energy costs	Increased awareness and assessment of potential impacts will lead to better management and reduction of CO <sub>2</sub> emissions (direct/ indirect)

<b>Carbon Offsetting and Climate Resilience through Council practices</b>					
<b>Action</b>	<b>Planned Outcome/ Impact</b>	<b>Timeframe (Short-Long term)</b>	<b>Total estimated cost</b>	<b>Estimated saving per year / payback</b>	<b>Estimated CO<sub>2</sub> reduction</b>
Tree Planting and increasing biodiversity	Increased tree planting in the borough and maintaining existing woodland	Ongoing	Several government grants and other funding available to plant trees	None	A conifer forest can sequester around 14 tonnes of carbon dioxide per hectare per year (direct/ indirect)
Rewilding scheme	Increase biodiversity habitats, introduce more wildflower areas, leaving areas with minimal maintenance	Ongoing	Unknown at this time pending further evaluation and options	Saving based on maintenance savings on green areas	Carbon offset (direct/ indirect)
Environmental improvements and provision of green areas/ natural areas	When refurbishing playground or pitches, ensure there is provision for green or natural areas	Ongoing	Unknown at this time pending further evaluation and options	Saving based on maintenance savings on green areas	Carbon offset (direct/ indirect)
Encourage any Council developments to include green open spaces, green roofs and water harvesting	Supports the 'greening' of the environment, encouraging carbon sinks and biodiversity	Ongoing	Unknown at this time pending further evaluation and options	Unknown at this time pending further evaluation and options	Carbon offset (direct/ indirect)
Undertake assessment of opportunities for offsetting residual CO <sub>2</sub> emissions	Review specific project opportunities for delivering carbon savings through investment in renewables or other projects, both within and outside of the Local Authority area, including a review of costs and benefits. Opportunities could include e.g. investing in largescale PV or wind generation, woodland creation etc.	Long term – 2028-2030 - note that energy demand reduction measures, and reducing the use of fossil fuels are a higher priority than Carbon offsetting.	1 Tonne Carbon = 1 Carbon Credit this is roughly equal to around £10/year when looking at investing in external projects	None	Carbon Offset residual emissions (direct/ indirect)

## Finding out more

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