Tamworth Borough Council

Net Zero Tamworth: Embedding Climate Change in Council Activities

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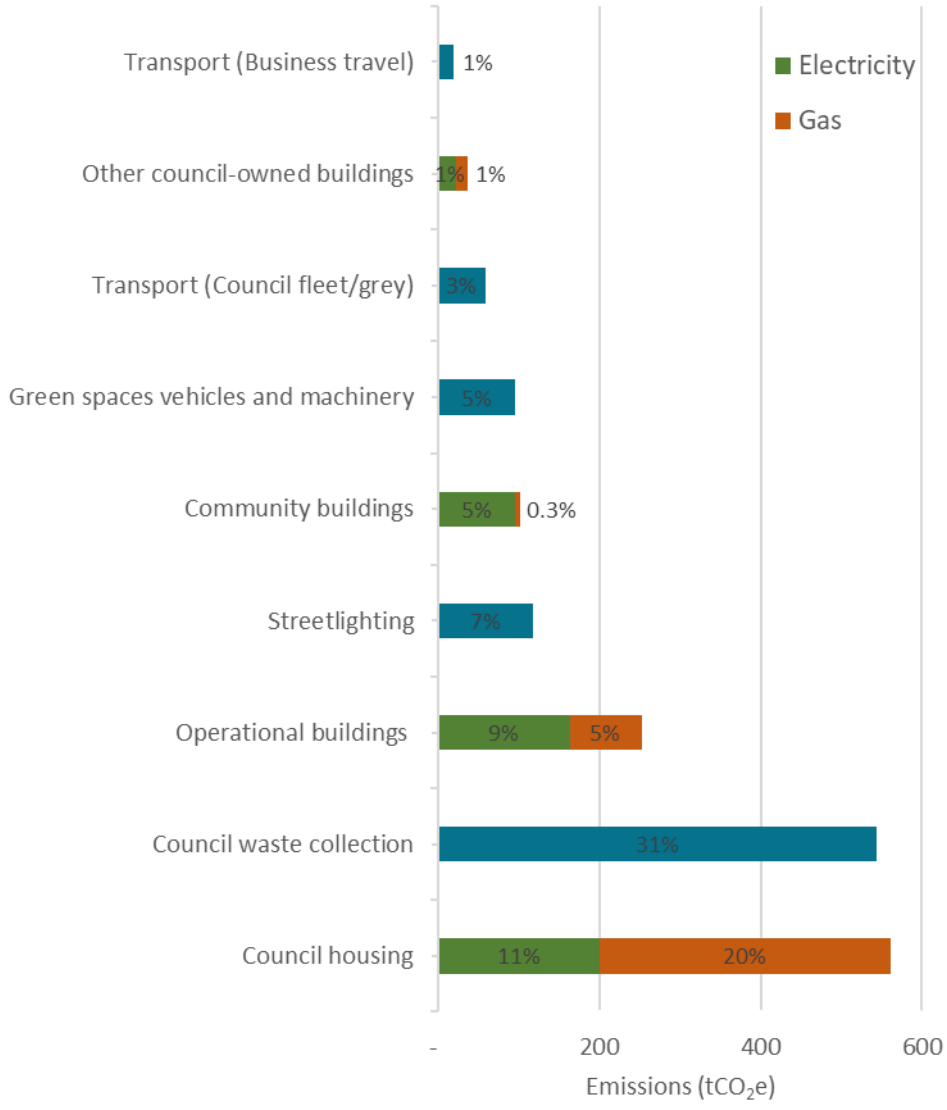
Executive Summary

On the 19th of November 2019, Tamworth Borough Council declared a climate emergency following on from the UK Parliament's declaration in May 2019. The council committed to its estate becoming net zero by 2050 at the latest, or by 2030 if financially able to do so. Tamworth Borough Council commissioned a series of products including a greenhouse gas (GHG) baseline inventory for the council and a series of interviews and workshops to develop recommendations for the council to reduce their emissions.

Tamworth Borough Council's GHG emissions for 2019/2020 were estimated to be **1,783 tCO_2e**. **Figure ES.1** shows that in 2019/20 the largest sources of emissions were council housing (31%) and council waste collection (31%).

ES.1: Estimated tCO_2e emissions for Tamworth Borough Council 2019/20



Methodologies for estimating procurement emissions are not yet well established and have a high uncertainty and emissions estimates are therefore presented separately to the inventory. In 2019/20 emissions from procurement were estimated to be comparable to total emissions estimated for the sources listed above. Responsive repairs to council buildings were estimated to be the greatest source of emissions within this sector, at 13%.

Where activity data were available, council emissions were also calculated for the 2020/21 financial year. Emission estimates may have been impacted by COVID-19 over this period but please note, there will be other operational changes between the years and therefore all differences are not explained by COVID-19 alone.

As of August 2021, 200 staff members were working from home. Emissions related to working from home for these employees was estimated at 60 tCO_2e. For context, this equated to 25% of all emissions from council operational buildings in 2020/21 and exceeded the reduction in emissions from business travel between 2019/20 and 2020/21.

Table ES.2 presents the emission estimates for 2019/20, and where available for 2020/21. Where not available, arrows have been included which indicate the expected impact on emissions.

ES.2. Emissions in tCO_2e for Tamworth Borough Council in 2019/20 and 2020/21

Category	2019/20		2020/21
	Emissions (tCO2e)	% of total emissions	
Operational buildings (electricity)	164	9%	=
Operational buildings (gas)	89	5%	=
Working from home	-	-	↑
Community buildings (electricity)	95	5%	↓
Community buildings (gas)	5.3	0.3%	↓
Housing – standard (electricity)	105	6%	↑
Housing – sheltered (electricity)	95	5%	=
Housing (gas)	20	1%	↑
Housing – sheltered (gas)	341	19%	=
Other buildings (electricity)	22	1%	↓
Other buildings (gas)	15	1%	↓
Streetlighting	118	7%	124
Transport (Council fleet/grey)	58	3%	57

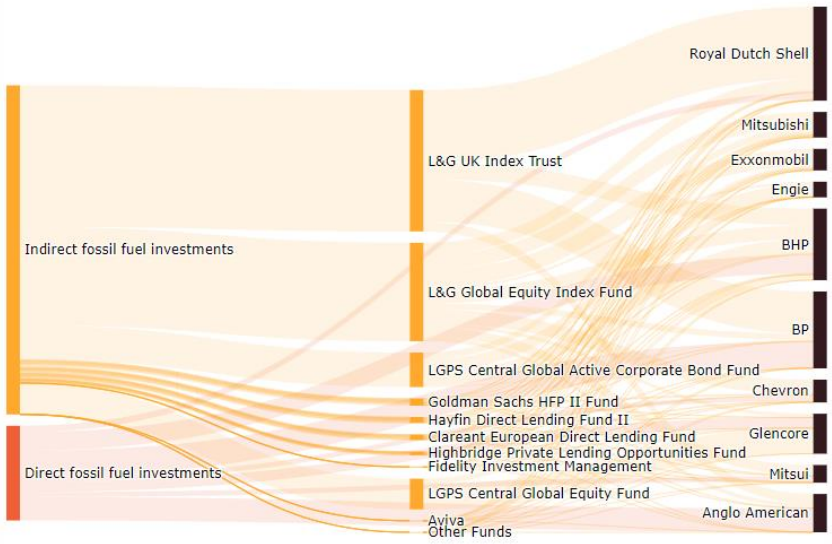
Transport (Business travel)	18	1%	5
Green spaces vehicles and machinery	95	5%	93
Council waste collection	544	31%	597
Total	**1,783**		-
Procurement of other goods and services	1,959		2,166

Note: Arrows indicate the direction of expected change in emissions for sources where data were not available for 2020/21.

Tamworth Borough Council invests in a variety of projects and processes. These investments have an associated carbon footprint, however, estimating these emissions is complex and a developing area of research. As such, emissions from investments are typically not included in GHG baselines for net zero targets. Whilst this is the case, it remains important for Tamworth Borough Council to consider where they are investing and examine the potential ways in which low carbon alternative invest opportunities can be conducted.

Tamworth Council is specifically interested to understand the carbon impact of their pension investments managed by Staffordshire County Council. In February 2021, UK Divest published data on the proportion of local authority pension funds that are invested in fossil fuel industries[1]. UK Divest report that Tamworth Borough Council's current pension fund, part of the Staffordshire Pension Fund, is investing 3.3% of its assets into fossil fuels, compared to the UK average of 3%. This equates to £146 million. **Figure ES.3** outlines the ten largest fossil fuel holdings and includes both direct and indirect investments.

ES.3: The largest 10 direct and indirect fossil fuel investments as part of the Staffordshire Pension Fund



Source: https://divest-dashboard.herokuapp.com/

Recommendations:

[1] https://www.divest.org.uk/wp-content/uploads/2021/03/UKDivest_Report.pdf

Recommendations have been identified throughout the report, which the council will need to reflect on when developing its Climate Action Plan for delivering its Net Zero Carbon commitment. As a small local authority, there will be challenges in meeting this commitment, such as funding climate measures. The following concluding headline recommendations, which encompass the detailed recommendations in the report, are offered to the council:

- To improve future emissions estimates, data collection processes should be established to enable updates to the emissions estimates in subsequent years. Furthermore the following data sources should be explored to accommodate inclusion of these sources within the emissions baseline: energy usage within standard council housing (currently only communal spaces), staff commuting, and homeworking.
- Develop a long-term strategy for funding of Net Zero Carbon measures, together with a pipeline of projects to enable the council to be in the best position to secure funding as opportunities arise.
- Develop systems to embed delivery of Net Zero Carbon into the council's decision making and operational processes. For example, development of a Net Zero Carbon procurement policy and building Net Zero Carbon knowledge, capacity and skills of council staff and Members through training, accessing additional expertise and cross departmental working groups.
- Explore joint Net Zero Carbon opportunities with neighbouring councils and other public sector bodies, e.g. for joint procurement, shared services, funding bids.

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Glossary

BEIS	Department of Business, Energy and Industrial Strategy
CCC	Committee on Climate Change
CH_4	Methane
CMI	Community Municipal Investment
CMT	Corporate Management Team
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DECC	Department of Energy and Climate Change (now BEIS)
Defra	Department for Environment, Food and Rural Affairs
EFW	Energy from Waste
EPC	Energy performance certificates
EPR	Extended Producer Responsibility
EV	Electric Vehicle
FOI	Freedom of Information
FTE	Full time employees
GHG	Greenhouse gas
HEAT	Home Energy Advice Tamworth
HGV	Heavy goods vehicle
HMO	House in multiple occupation
HRA	Housing revenue account
IPCC	Intergovernmental Panel on Climate Change
IT	Information Technology
Kt	Kilotonnes
kWh	Kilowatt-hours
LED	Light Emitting Diode.
LEP	Local Enterprise Partnership
LGA	Local Government Association
LGV	Light goods vehicle
LULUCF	Land use, land use change and forestry
MEES	Minimum Energy Efficiency Standards
NZC	Net Zero Carbon
N_2O	Nitrous Oxide
PDR	Personal Development Review
PR	Public Relations

PSDS	Public Sector Decarbonisation Scheme
PV	Photo-voltaic
QA/QC	Quality Assurance and Quality Control
REGO	Renewable Energy Guarantees of Origin
SAP	Standard Assessment Procedure
SIC	Standard industrial classification codes
SSN	Sustainable Scotland Network
UK	United Kingdom
WMCA	West Midlands Combined Authority

1 Introduction

In response to rising global temperatures due to greenhouse gases (GHG) emissions the Intergovernmental Panel on Climate Change (IPCC) released the *Special Report on Global Warming of 1.5°C*[2]. In this, it is made clear that ensuring global temperatures stay well-below 2°C pre-industrial levels is crucial to reduce large risks to human and natural systems, and efforts should be made to pursue warming of only 1.5°C to prevent the largest risks. Following this, global accords such as the Paris Agreement were signed, and national goals such as those outlined by the Climate Change Committee (CCC) were made. The UK, as outlined by the CCC (2019), has set an ambition to "vigorously pursue an ambitious target to reduce greenhouse gas emissions (GHGs) to 'net-zero' by 2050" across the whole economy.

It is widely recognised that achieving the UK target will require cross-government cooperation. Local authorities are well placed to influence emissions in buildings, transport, and waste whilst holding the best knowledge of the needs and opportunities of their area. Local authorities can also drive emissions reductions in their areas through their role as community leaders and major employers, as well as their regulatory and planning capacities. Through their planning role, local authorities can leverage change by enabling sustainable development and placemaking, establishing building energy efficiency standards, implementing sustainable travel programmes and infrastructure, approving renewable energy projects, pursuing district heating programmes and implementing sustainable waste management programmes. Therefore, local action to reduce carbon emissions is vital for the UK to meet its international commitments to reduce our impact on global warming.

On the 19th of November 2019, Tamworth Borough Council (TBC) declared a climate following on from the UK Parliament's declaration in May 2019. The council committed to its estate becoming net zero by 2050 at the latest, or by 2030 if financially able to do so. In declaring such an emergency TBC acknowledged that reaching net zero will involve fundamental changes across the UK economy and that against this backdrop Tamworth's influence individually, will be limited. However jointly, with other councils and organisations across the public and private sectors, notable impacts will be achievable.

Aether, SE[2] and CAG Consultants were commissioned by TBC to assist the council in understanding the current GHG emissions associated with the council operations and to provide recommendations on future opportunities to reduce the council's carbon emissions.

1.1 Scope of this report

The aim of this report is to provide the council with recommendations on how to embed climate change within council operations with a view to reduce greenhouse gas emissions associated with the council estate operations. The results of this work will also assist in the development of TBC's Climate Action Plan, which will further detail carbon strategies for the council and wider borough.

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

Section 2 presents the council's carbon footprint for the 2019/20 period, enabling the council to identify key emission sources and prioritise future action.

Sections 3 - 9 are sectoral chapters which address how the council can embed climate action into its operations. This includes the outcomes of engagement with council staff in the form of interviews conducted over the course of the project, case studies of other council projects and processes which may be relevant, and recommendations for TBC. Information is presented on a thematic basis to ensure similar ideas and outcomes are grouped together and to aid readability.

Finally, **section 10** includes a short section on the carbon intensity of current council pension investments.

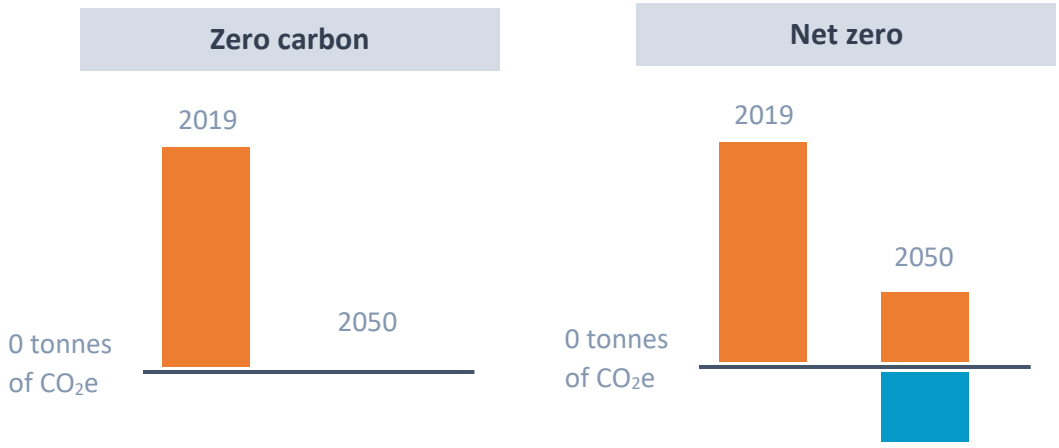
2 Council baseline emissions

2.1 Definitions

A GHG inventory is a dataset which presents estimates of emissions of various greenhouse gases from a wide range of activities in an organisation, country or other geographical area. This can then be used to inform future decision-making and policy. The first year an emission inventory is compiled is referred to as a baseline year and is used as a reference point to track progress through time. The baseline year for the council is 2019/20. For detail on the input data and methods used to compile the inventory, including the choice of baseline year, please refer to **section 12**.

In line with the council's resolution, the term "decarbonisation" is used in this report to mean the same as becoming "carbon neutral" or "net zero carbon": the balancing of carbon emissions against carbon removals and/or carbon offsetting with the net result being zero, as illustrated in **Figure 1.** "Net zero" is used in this report as shorthand to cover the net balancing of the main greenhouse gases: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The global warming potentials of CH_4 and N_2O are used to calculate the equivalent warming to CO_2, to allow the estimation of total GHG effects on the atmosphere in one unit, CO_2-equivalent, or CO_2e. The council agreed that their net zero targets should cover carbon dioxide, methane and nitrous oxide, not just carbon dioxide. Any reference to "carbon neutral" and "decarbonisation" in this report is understood to be shorthand to cover methane and nitrous oxide as well as carbon dioxide.

Figure 1: Options for achieving net zero



As defined by the CCC, a net-zero (i.e. carbon neutral) target requires "deep reductions in emissions, with any remaining sources offset by removals of CO_2 from the atmosphere (e.g. by afforestation)". This removal requires either the purchase of carbon offsets[3] or direct carbon removal through additional carbon removal and storage ("sequestration") activity on an organisation's estate.

[3] Where a project for reduction in greenhouse gas emissions is funded in order to compensate for emissions made elsewhere.

2.2 Tamworth Council baseline inventory for 2019/2020

Tamworth Borough Council's GHG emissions for 2019/2020 were estimated to be **1,783 tCO_2e**. Emissions by sector are presented in **Figure 2** and **Table 1.** The most significant emissions sources are council housing and council waste collection, both comprising 31% of the total emissions.

Figure 2: Estimated tCO_2e emissions for Tamworth Borough Council 2019/20

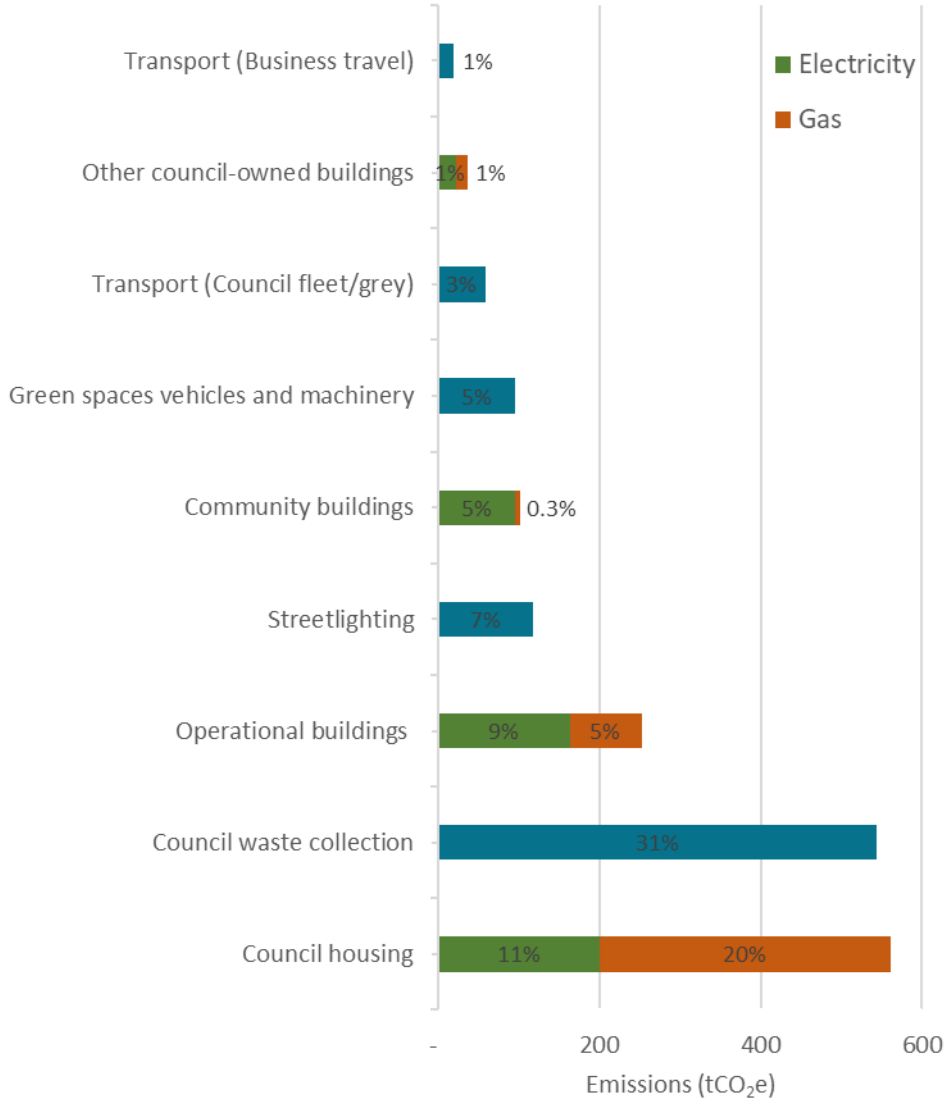


Table 1: Estimated tCO_2e emissions for Tamworth Borough Council 2019/20 by sector

Sector	2019/20 (tCO_2e)	% of total emissions
Operational buildings (electricity)	164	9%
Operational buildings (gas)	89	5%
Community buildings (electricity)	95	5%
Community buildings (gas)	5.3	0.3%
Housing (electricity)	200	11%
Housing (gas)	361	20%
Other buildings (electricity)	22	1%
Other buildings (gas)	15	1%
Streetlighting	118	7%
Transport (council fleet/grey)	58	3%
Transport (Business travel)	18	1%
Green spaces vehicles and machinery	95	5%
Council waste collection	544	31%
Total	**1,783**	-

2.2.1 Emissions related to the procurement of goods and services 2019/20

Procurement emissions are those associated with the goods and services that the council purchases. Whilst the council has an influence over emissions from this source, it does not have direct control, as with those sources included above. These emissions are presented here as an initial estimate of the scale of procurement emissions, and to start to identify the goods and services which represent the largest carbon sources within procurement. Methodologies for estimating procurement emissions are not yet well established and have a high uncertainty and are therefore presented separately to the inventory.

The methodology used to estimate emissions from the procurement of goods and services is based on published factors of carbon intensity per amount spent[4]. This was applied to the council's financial accounts summary. Financial transactions not related to the purchase of goods and services were excluded from the carbon totals, as were activities that were included within the baseline, such as purchase of fuel, to avoid double counting. Further detail on the methodology is included in section 12.

Emissions from procurement were approximately 2,000 tCO_2e. Therefore, emissions from procurement are comparable to the total emissions estimated for the sources listed above. Responsive repairs to council buildings were the greatest source of emissions at 13% (**Table 2**). This category comprised 10% of council spend in 2019/20.

[4] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/404542/Table_13_Indirect_emissions_from_supply_chain_2007-2011.xls

Table 2: Procurement hotspots for Tamworth Borough Council

Procurement type	Spend category	SIC Category	% of procurement emissions 2019/20
Services	Responsive Repairs	Repair services of computers and personal and household goods	13%
	Voids	Services to buildings and landscape	11%
	Exec Dir Organisation Support	Office administrative, office support and other business support services	9%
	Gas Heating Systems Maintenance	Repair to installation services	9%

2.3 Tamworth Council emissions estimates for 2020/21

Where activity data were available, council emissions were also calculated for the 2020/21 financial year. The COVID-19 pandemic affected operations for many organisations, including Tamworth Borough Council and this section considers how emission estimates may have been impacted by COVID-19. Please note, there will be other operational changes between the years and therefore all the difference is not explained by COVID-19 alone.

Table 3 presents the emission estimates for 2019/20, and where available for 2020/21. Where not available, arrows have been included which indicate the expected impact on emissions.

Total emissions for the sources covered across 2019/20 and 2020/21 are 833 tCO_2e and 876 tCO_2e, respectively. The increase is driven by an increase in emissions from council waste collection which remains the largest emission source at 544 tCO_2e in 2019/20 and 597 tCO_2e in 2020/21. Emissions from streetlighting marginally increased from 118 tCO_2e to 124 tCO_2e in 2020/21. Fuel consumption for the council fleet did not change between 2019/20 and 2020/21; the reduction in emissions resulted from a decrease in the emission factor for diesel. Emissions from business travel decreased from 76 tCO_2e to 62 tCO_2e primarily due to a reduction in distance travelled due to reduced in-person activity caused by the pandemic.

Estimates have been made for the expected direction, increase or decrease, of other emission sources for which activity data was not available. It is assumed that for operational buildings, fuel consumption remained constant as buildings were still heated during the pandemic. Emissions from sheltered housing were also assumed to remain constant due to the typical demographic of occupants being of retirement age or otherwise not working. Other sources, such as working from home and standard housing emissions are predicted to have increased due to a larger proportion of people spending time at home. Decreases in estimated emissions are predicted for community buildings and other buildings which were assumed to be consuming less electricity/ fuel for heating over the COVID-19 lockdowns. It is recommended that these assumptions are validated through comparisons of activity data. To enable this validation the council,

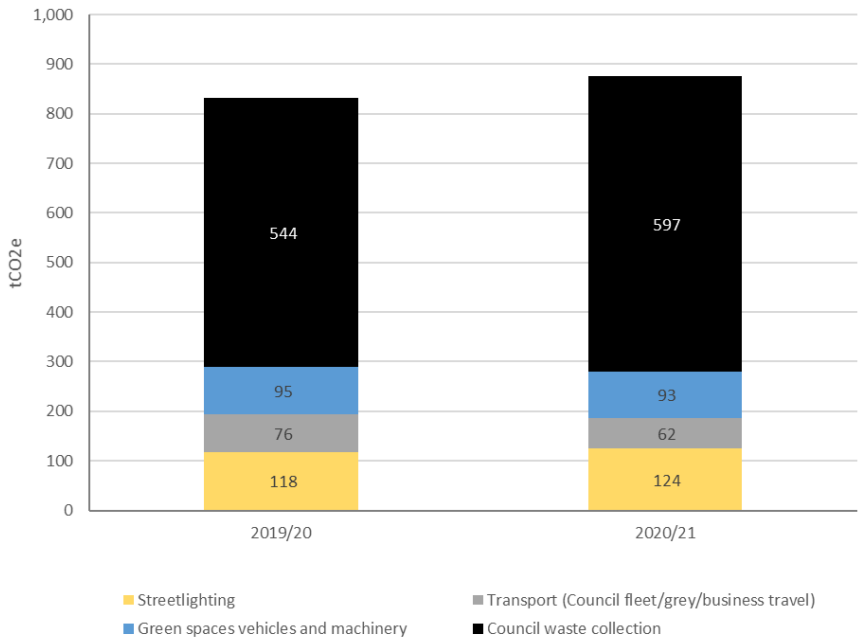
are recommended to focus data collection efforts to ensure a consistent data flow to support the update of the emissions estimates. This will require cross departmental data agreements.

Table 3: Emissions in tCO_2e for Tamworth Borough Council in 2019/20 and 2020/21

Category	2019/20	2020/21
Operational buildings (electricity)	164	=
Operational buildings (gas)	89	=
Working from home	-	↑
Community buildings (electricity)	95	↓
Community buildings (gas)	5.3	↓
Housing – standard (electricity)	105	↑
Housing – sheltered (electricity)	95	=
Housing (gas)	20	↑
Housing – sheltered (gas)	341	=
Other buildings (electricity)	22	↓
Other buildings (gas)	15	↓
Streetlighting	118	124
Transport (council fleet/grey)	58	57
Transport (Business travel)	18	5
Green spaces vehicles and machinery	95	93
Council waste collection	544	597
Procurement of other goods and services	1,959	2,166

Note: Arrows indicate the direction of expected change in emissions for sources where data were not available in 2020/21.

Figure 3: Emissions in tCO_2e for Tamworth Borough Council in 2019/20 and 2020/21, for which updated activity data was available



2.3.1 Emissions related to the procurement of goods and services 2020/21

Procurement emissions in 2020/21 were approximately 2,100 tCO_2e. As with emissions calculated in 2019/20 this figure excludes financial transactions and spend on sources that are included within the baseline. The areas of greatest spend and emissions were costs associated with improving HRA dwellings to adequate standard for let once existing tenants have moved out, and costs associated with the COVID-19 pandemic. These sources comprise 16% each of procurement emissions in 2020/21 and equate to 12% and 8% of council spend, respectively.

Table 4: Emissions from procurement for Tamworth Borough Council, 2020/21

Procurement type	Spend category	SIC Category	% of procurement emissions 2020/21
Services	Voids	Services to buildings and landscape	16%
	Responsive Repairs	Repair services of computers and personal and household goods	13%
	Gas Heating Systems Maintenance	Repair to installation services	9%
Goods	Covid-19 costs	Basic pharmaceutical products and pharmaceutical preparations	16%

2.3.2 Emissions associated with working from home

As of August 2021, 200 staff members were working from home. Emissions related to working from home for these employees were estimated to be 60 tCO_2e (see section 12 for further detail on the methodology). For context, this equated to 25% of all emissions from council operational buildings in 2020/21 and exceeded the reduction in emissions from business travel between 2019/20 and 2020/21.

Additional information was provided by Tamworth Borough Council on future working from home arrangements; from the 1st April 2022 163 of the 351 council staff will be working from home with an additional 65 hybrid workers. Emissions from working from home are likely to be approximately 68 tCO_2e on an ongoing basis.

The following sections of the report consider each main source of emissions in turn, documenting discussions held with the council, providing best practice case studies for relevant climate action from other local authorities and outlining the recommendations for TBC for that sector.

3 Non-domestic council buildings

Non-domestic council buildings encompass operational, community and other council-owned buildings. Please refer to **Table 7** for further detail on the buildings covered within these categories.

3.1 Engagement outcomes

The introduction of smart working during the Covid pandemic has changed the nature and scale of space needed for some council operations. The council intends to move out of its main building (Marmion House), sustain homeworking, and move into smaller office / hub space in the town centre for customer-facing activities and collaborative working. It is likely that this will be another council owned building and in the longer term, through development of a new hub.

Many office-based staff will continue to work from home. This has potential to reduce emissions from the corporate estate and from staff commuting; however, emissions associated with home energy use should be considered, and as indicated from the baseline emissions study (Section 2.3.2), are significant. In addition, office space must be heated and lit regardless of its occupancy. One workshop suggestion was an incentive to support staff to install solar PV systems at home, perhaps through a loan or salary sacrifice scheme.

"Working from home has changed the whole dynamic. Our building use is artificially low. And we're not counting the carbon impact – it's shifted. It's easy to shut things down and say we've saved carbon but all those people are somewhere else."
(Interview with Senior Manager)

The council owns a number of other buildings:

- Town Hall – an historic building in the market place, it will be challenging to retrofit, particularly as it is "on stilts" and therefore exposed on all sides. Current plans are for the town hall to be refurbished as the civic hub of the authority.
- Tamworth Castle – used as a visitor experience and hospitality venue
- Commercial and industrial premises – these are rented out, usually on a full repair lease. Turnover of tenancies is low. When tenancies do end, the council makes improvements and these will bring properties up to Minimum Energy Efficiency Standards. In some cases, this will include energy systems (such as heating, ventilation and cooling) but often it is the incoming tenant who will fit these systems to suit their own needs and the council has limited influence on this. Some of the buildings have no heating, tending to be open buildings like garages. The need to improve energy efficiency will have an effect on asset management; in some cases, it will be difficult or expensive to bring properties up to minimum standards and these properties may then be sold.
- Retail units – the council owns some retail units which are likely to be incorporated into the Future High Streets funded project, and some parades of shops on housing estates, which could be included in energy efficient retrofit schemes.
- Depot - the depot is a busy site. It currently has four gas boilers which are coming to the end of their life; the council has explored the opportunity for biomass but could not secure funding from Staffordshire County Council.

- Tamworth Assembly Rooms – the Assembly Rooms have recently undergone major refurbishment which included installation of more energy efficient heating, heat recover ventilation and LED lighting.
- Tamworth Enterprise Centres – the council refurbished a former drill hall into an enterprise centre which has been well-used by local businesses; there may be further opportunities for energy improvements as part of its management plan. The council has also just announced the acquisition of a further building in the town centre which will provide a second Enterprise Centre and a site for development of a new college building.

The council may also have land assets which are suitable as sites for renewable generation.

During the interviews, staff recognized that there are opportunities to reduce emissions from corporate buildings through energy efficiency and renewable technologies, particularly solar PV. However, these opportunities may be limited by heritage constraints (e.g., at the Town Hall) and will also require capital funding.

In addition, the council has a corporate contract for energy purchasing. This does not yet require electricity generated from renewable sources, but it was felt that this could easily be achieved.

The council's buildings are only a small part of the non-domestic building stock in the Borough and interviewees noted that there are major regeneration plans which could offer opportunities for carbon reductions:

- Future High Street Fund, Levelling Up and town centre regeneration
- Opportunities for funding from West Midlands Combined Authority (WMCA) or the LEP related to the railway gateway site, in terms of addressing vulnerability
- The development of the golf course with over 500 new homes and a new local centre
- Opportunities for more "greening", if Neighbourhood Plans are developed, as well as the opportunity for commuted sums to be used towards planting at the National Forest in East Staffordshire as space is so limited in Tamworth.

3.2 Embedding actions

The council's non-domestic buildings (encompassing operational, community and other council-owned buildings) are responsible for 21% of the council's carbon baseline emissions. There are a number of measures that can be taken to increase energy efficiency and reduce carbon emissions associated with these buildings.

Retrofitting of existing buildings should be undertaken to improve energy efficiency, and renewable/low carbon power and heating systems should be installed wherever possible. This applies both to historic buildings, such as Tamworth Castle and Town Hall and to more contemporary buildings, such as the Tamworth Enterprise Centre, the new Enterprise Hub and the Tamworth Co-operative Society building being converted for use by Tamworth college. An audit of energy use of existing buildings should be undertaken to prioritise which should be retrofitted first.

Energy efficiency improvements and renewable energy systems for historic buildings need to be carefully planned to ensure these are undertaken with full regard to the sensitive historic nature of the structures. To assist owners of historic buildings Historic

England has published a series of documents on how to improve energy efficiency within historic buildings. This includes identifying areas of improvements such as building fabric, efficiency of building equipment and energy supply and quick wins and measures categorised by cost and risk[5]. This also includes the Responsible Retrofit Guidance Wheel[6], which has more than 50 measures that can be used for the retrofitting or refurbishing of traditional buildings. It allows historic building owners/managers to consider the measures' advantages, concerns about their performance and possible interactions between them.

New build projects should be designed and built to the highest energy efficiency standards, using building materials that have low embodied carbon. Consideration should be given to integration of renewable power and heating systems into new buildings to meet on site energy demand, such as photovoltaic panels or ground, air or water source heat pumps. A possible new leisure centre would provide the ideal opportunity to embed these measures into the design and operation of the facility.

Low/Zero carbon heat networks should be considered for both the councils non-domestic and domestic estate. The CCC estimate that around 18% of UK heat will need to come from heat networks by 2050 if the UK is to meet its carbon targets cost effectively[7]. To support this transition, the Government has launched a Green Heat Network Fund[8] to support the delivery of low and zero carbon heat networks in England, with 11 bidding rounds from March 2022 to December 2025. Tamworth Borough Council may be eligible to apply for funding to develop heat networks for both their non-domestic and domestic estates.

3.3 Case studies

In this section, case studies of local authorities or organisations implementing the carbon reduction opportunities mentioned in section 3.2 will be included. Where possible, examples of standard/good practice will be included in addition to examples of best/emerging practice. Providing case studies will aid in identifying and developing feasible actions for the council.

[5] https://historicengland.org.uk/advice/technical-advice/energy-efficiency-and-historic-buildings/
[6] https://responsible-retrofit.org/greenwheel/
[7] https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/
[8] https://www.gov.uk/government/publications/green-heat-network-fund-ghnf

Gateshead District Energy Scheme developed by the council-owned Gateshead Energy Company provides low-cost, low-carbon heat and power to homes, public buildings and businesses across the centre of Gateshead. As part of Flexitricity's demand response network, it means the project will receive in excess of £60,000 per year over the next 14 years, simply by using its flexibility to smooth out peaks and troughs in national electricity demand.
https://www.gateshead.gov.uk/article/2993/Gateshead-District-Energy-Scheme

Stroud District Council have replaced gas boilers with **water source heat pumps** at the Grade II listed Ebley and Brimscombe Port Mills to provide heating and hot water for the council's offices using heat energy from the River Frome. They secured funding from government's renewable heat incentive scheme and will recover the capital costs of both installations over a period of years:
https://www.stroud.gov.uk/news-archive/reverse-fridge-is-harnessing-river-water-to-heat-historic-mills-and-cut-carbon-emissions

Lindisfarne castle is a 16th century Grade I listed building, owned by the National Trust. In 2012 48 photovoltaic panels were installed on the castle's roof, generating just under 10,000 kWhs electricity per year.

A ground source heat pump has been installed at historic mansion, **Wimpole Hall and Rectory restaurant, Cambridgeshire**. The system uses around one third of the energy used by the previous oil boilers, reduces carbon emissions by 47 tonnes per year and will save over £8,000 a year in fuel costs. The low temperature background heat provided by heat pumps is better for the sensitive historic collections, rather than the fluctuating high temperature heat from a fossil fuel boiler: https://www.nationaltrust.org.uk/wimpole-estate/features/digging-deep-at-wimpole-to-go-greener

3.4 Recommendations for the council

With the introduction of smart working - the majority of staff designated as home or hybrid workers from 1st April 2022 and the planned move from and disposal of Marmion House - this is an ideal time to plan how to reduce the carbon emissions from the council's non-domestic estate to help meet its net zero carbon targets. Recommendations set out below identify key actions for this:

- The council should undertake an energy audit of the council's existing non-domestic estate and use this to develop a programme of retrofitting for energy efficiency to include building fabric, heat and power supply/systems and building uses;

- Any new build facilities, refurbishment of existing facilities/new building/facility acquisitions should have net zero carbon specifications built into the briefs for their design, build and operation;
- Explore funding opportunities to deliver recommendations above, e.g. the Green Heat Network Fund to support the delivery of low and zero carbon heat networks and any potential future rounds of the Public Sector Decarbonisation Scheme (PSDS – see funding section later) for both the council's non-domestic and domestic estates.

4 Housing

4.1 Engagement outcomes

4.1.1 Council housing stock

Tamworth Borough Council has 4,500 housing units, with significant opportunities to not only reduce carbon emissions but also improve housing comfort and quality, tackle fuel poverty, reduce energy bills for residents and improve health and wellbeing. In their workshop, Members recognised the significance of housing in the overall carbon footprint and felt that it could be a major area of focus.

National regulation is seen as the key driver for improving energy performance of social housing, and a new Social Housing Regulation Bill is expected in Spring 2022. It is expected to build on existing standards and to address carbon emissions in four key ways:

- Homes Standards – following on from the aspiration in the Government's Clean Growth Strategy that all social housing should achieve an energy rating of a minimum of C by 2030. This would move the sector on from the Decent Homes Standard which was published back in 2006. Interviewees believe that a significant proportion of the council's housing would currently achieve D or E.
- Tenant Involvement and Empowerment Standard – including clear consultation with residents on their needs and the development of "local offers" which would be programmes designed to meet those needs. This might include affordable warmth, for example.
- Neighbourhood and Community Standard – which sets a requirement for housing providers to work with others to help promote social, economic and environmental wellbeing
- Requirements around improving empty properties, which will help the council consider the most energy efficient way to re-let homes.

"Some of this is going to be forced on us anyway, whether we like it or can afford it or not. It's going to have to be factored into asset management. We have started this in housing."
Interview with senior manager

At present the carbon baseline only includes the communal areas of council housing stock; these are in the council's direct control and the council pays for the energy used in these spaces. However, focusing only on communal areas would not meet the wider carbon and fuel poverty challenges associated with the council's stock. Members and staff felt that more aspects of council housing could be brought into scope, given that the council has the decision-making authority over matters such as insulation and heating systems within these homes. Even within communal areas, there are still opportunities for energy efficiency improvements, such as installing LED lighting with proximity sensors.

The council is soon to commission consultants to do an assessment of the housing stock using these standards in order to map out opportunities to start embedding net zero carbon measures into the stock. This will inform the 30-year business plan for housing,

looking at what is required for different housing archetypes to move towards net zero carbon.

It is expected that new regulation would unlock further national funding for housing energy improvements; interviewees were clear that funding remains a challenge especially when the return on the council's investment is received by residents in the form of lower bills. Existing funding schemes for insulation are being accessed and the council is exploring the Social Housing Decarbonisation Fund as a way of introducing renewable heating systems. However, there are concerns that these could push up prices for residents and exacerbate fuel poverty, so the decision is not straightforward.

There are two major contracts within the council housing stock:

- Planned works, such as kitchen and bathroom upgrades (currently delivered by Wates)
- Responsive repairs (currently delivered by Equans)

Interviewees recognised that these contracts are influential in carbon terms, both in terms of the outcomes they deliver for the housing stock (choices of materials or heating systems, for examples) and in how they are delivered (for example, the types of vehicles used, especially in the repairs contract which has dedicated labour and fleet). There is scope to look at the whole life carbon cycle of materials used to understand and reduce their carbon footprint.

It was also noted at the officer workshop that any new build social housing should be constructed to high levels of energy efficiency, ideally aspiring to be zero carbon.

4.1.2 Private sector housing

There are around 3000 privately rented homes in Tamworth. The council also has responsibility for activities in private sector housing, such as landlord enforcement, house in multiple occupation (HMO) licensing and caravan park licensing. The HMO license has a requirement for a minimum energy rating and this is expected to ratchet up over time. The council prefers to use improvement notices and to engage positively with landlords to improve energy performance and housing quality. Minimum Energy Efficiency Standards (MEES) should drive broader improvement of the privately rented stock. However, the council lacks capacity to check and enforce in this area so concentrates largely on HMOs and Category 1 hazards.

Energy advice is provided to resident through Home Energy Advice Tamworth (HEAT) and through the Staffordshire Warm Homes Partnership (both delivered by Beat The Cold). The voluntary sector is also active in this space through a lottery grant and the council is training an in-house energy advisor.

4.2 Embedding actions

Tamworth Borough Council is responsible for 4,500 homes in the district which accounts for 31% of the council's carbon baseline emissions, excluding procurement. This is the council's joint highest emitting service area – the other being waste collection.

As with non-domestic council buildings, there are two main options for reducing the carbon emissions across the council's housing estate, retrofitting of the existing housing

stock and embedding zero carbon principles into the design and delivery of any new build council housing.

Retrofitting. The ideal way of doing this would be through a comprehensive programme of energy efficiency improvements across the whole council housing estate. The council has already secured grant funding from the Social Housing Decarbonisation Fund (SHDF) which is being delivered in partnership with the council's repairs contractor, Equans.

The upcoming assessment of the council's housing stock is the ideal opportunity to identify the scope and programming of such improvements as part of the long-term business plan for housing. This could include:

- energy efficiency improvements to the building fabric, such as internal or external insulation (see case studies in non-domestic building section and below)
- low carbon heating systems (see green heat networks information in non-domestic section above and
- electrical installations for energy reduction (e.g. motion detecting/proximity detector light switches in communal areas).

New build. There is limited development land available for new build council housing, across the district, However, if there are opportunities in the future for the council to replace or expand its council housing stock, then as described in the non-domestic building section, any new build or property conversions should be designed and built to the highest energy efficiency standards, including orientation and using building materials that have low embodied carbon. A co-benefit of this for tenants would be improved levels of comfort and reduced energy bills, which is increasing in importance with the recent increase in energy bills. The case studies include examples of new build low carbon council housing.

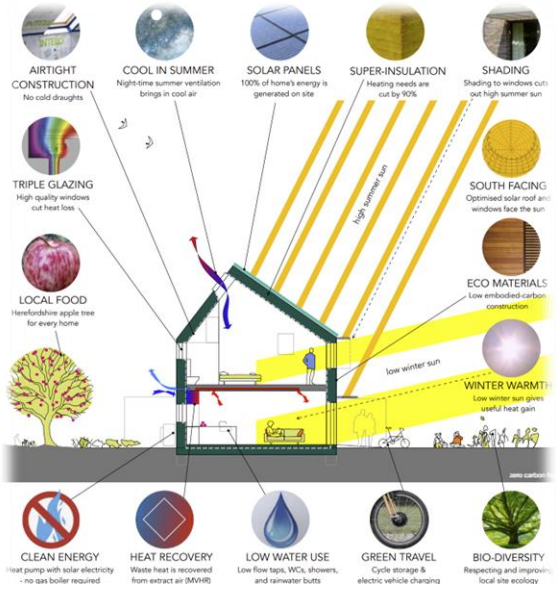
4.3 Case studies

North East Derbyshire District Council installed external wall insulation at 324 council-owned homes that are considered 'hard to treat' in terms of energy efficiency. The scheme expects to deliver 343 tonnes of carbon savings per year and the council expects residents to save an average of £286 per year on energy bills (note: this was before the current energy price increases). The work is funded by the Government's Green Homes Grant Local Authority Scheme and the council is putting vulnerable communities at the heart of its climate response to achieve net zero carbon by 2050.

The UK Green Building Council (UKGBC) has produced two guides, one a New Homes Policy Playbook to help local authorities improve the sustainability of new homes and the other, a Retrofit Policy Playbook designed to guide local authorities through setting up plans and programmes for housing retrofit:

Source: UK Green Building Council

Herefordshire Future Homes report outlines the Passivhaus Plus standards which are recommended for the Council's net zero homes. This includes high quality thermal insulation, triple-glazed windows, electric heat pumps, solar panels and heat recovery ventilation. Houses are south facing and include cycle storage and electric vehicle charging. Heating demand can be reduced by 90% with lower running costs, reduced carbon emissions and air pollution, warmer homes, and reduced fuel poverty:



Norwich City Council developed 100 ultra-low emission houses on Goldsmith Street. The houses meet the Passivhaus environmental standards and include a passive solar scheme which is estimated to reduced residents annual energy bills by 70% compared to the average household: https://www.bbc.co.uk/news/entertainment-arts-49970607

4.4 Recommendations for the council

As part of the planned assessment of the council's housing stock, the council should identify the scope and programming of net zero carbon measures for the entire council housing estate. This will inform the 30-year business plan for housing, looking at what is required for different housing archetypes to move towards net zero carbon.

This could include:

- energy efficiency improvements to the building fabric, such as internal or external insulation;
- low carbon heating systems;
- electrical installations for energy reduction (e.g. motion detecting/proximity; detector light switches in communal areas);
- Planning for any new/replacement council housing.

5 Transport

5.1 Engagement outcomes

The council leases vehicles for activities such as street cleansing / sweeping, green spaces and landscaping and housing. These are replaced every five years. Progress has been made on the electrification of the fleet where possible – for example, smaller vans are now electric. Whilst this costs the council more, it is a recognition that action needs to be taken. There was appetite from interviewees to do more but it was noted that the technologies are not always available or are extremely expensive (e.g., for street sweepers). As the technologies mature, interviewees expect that electric vehicle options will become more common across the council fleet, in line with each wave of procurement.

Vehicles are leased, but fuel is provided directly by the council at its fuel depot. This is likely to be a core site for charging of the council's fleet in future. Similarly, EV charging at council sites and in council-run car parks could not only support the council fleet but also act as a catalyst for wider community take-up of EVs.

The council has a lot of more portable equipment (such as mowing equipment) which runs on petrol. This is refreshed every three years and lower carbon options will be explored as part of that process.

The council pays an allowance for use of personal cars for business purposes ("grey fleet") and the allowance is higher if you have a more efficient car. Whilst homeworking will be the norm for many staff, there will still be a lot of frontline staff commuting and then travelling within the town (e.g., to visit residents).

Many staff are classed as 'essential car users', which means they have to use their car for all travel. Rebalancing this so that the incentive could apply to cycling, walking or public transport could help reduce car journeys. Removing the allowance may be seen as a loss of income and Members were concerned that this could make the council less attractive to potential employees. However, given the move to more working from home, this was an issue that Members were interested in considering at a later date.

There was previously a bike loan scheme for staff and it was suggested that this could be re-introduced to encourage more cycling; it was also suggested that this could be extended to an EV loan for employees. Several interviewees commented that there is a good network of cycle lanes and footpaths throughout the Borough to enable increased active travel by staff and the wider community. Tamworth is a compact town, ideally suited these modes.

5.2 Embedding actions

The council's fleet, grey and business travel accounts for 4% and green spaces vehicles and machinery accounts for 5% of the council's carbon baseline emissions (excluding procurement).

Key areas for consideration by the council to enable transport carbon emission reductions are as follows:

- Reduce the number/distance of petrol/diesel vehicle journeys undertaken on council business. Given the relatively small geographical area of Tamworth district, this offers opportunities to shift from petrol/diesel vehicle journeys to cycling/walking or e-bike journeys. The implementation of the Local Cycling and Walking Infrastructure Plan 2021-2031 by Staffordshire County Council should also help encourage staff and residents to increase the number of journeys on foot or bike. Staff could be incentivised to undertake journeys on foot/bike/e-bike/public transport through:
    - Introducing expenses payments for walking/cycling/e-bike journeys that are commensurate or higher than for using petrol/diesel cars. This could include an essential user allowance as well as a mileage allowance;
    - Providing passes for using public transport;
    - Removing the essential car user allowance, which requires beneficiaries to use their cars for council business journeys. As mentioned above, the essential car user allowance can form an important financial recompense for staff, so any changes would need to engage council staff and be carefully managed;
    - Re-introducing a Cycle to Work scheme for council employees to acquire a new bike.[9]
- The UK Government has set out plans to ban the sale of new petrol and diesel vehicles in the UK from 2030, with hybrid vehicles following in 2035. Introducing more electric vehicle (EV) charging points at council sites and the wider district will enable the council to support a smooth transition to electric vehicle use within and outside of the council. This should be based on the council's electricity supply being the lowest carbon option available. Consideration should be given to working with neighbouring local authorities on developing an area wide network of EV charging points (see North East case study below);
- The council has already made a start in transitioning the vehicle fleet to electric vehicles and this should continue as part of the vehicle replacement programme, including grounds maintenance vehicles, such as mowers (although these are not included in the ;
- Alternative forms of low carbon transport, should be considered, for example for deliveries between council facilities, such as e-cargo bikes (see Brighton and Hove council case study below).

[9] https://www.gov.uk/government/publications/cycle-to-work-scheme-implementation-guidance

5.3 Case studies

Brighton & Hove City Council bought 12 e-cargo bikes, some able to carry loads of up to 150kg. They are used by Council teams and also small businesses in the city. The e-cargo bike fleet is used by the Council's community engagement, post room and cemeteries and cycle instructor teams. A further five e-cargo bikes have been given to a sustainable logistics company to support low carbon business deliveries across the city.

See: https://takeclimateaction.uk/climate-action/how-brighton-hove-are-turning-city-centre-deliveries-green

The Council also has an e-Cargo Bike Accelerator Programme to support business take up of e-cargo bikes, which will contribute to transition to its zero-carbon target by 2030.

See: https://www.brighton-hove.gov.uk/ecargo-bike-accelerator-project

The **North East Joint Transport Committee** approved the first region-wide Zero Emission Vehicle (ZEV) policy in March 2022. This aims for the region to lead the country in boosting the up take of Electric Vehicles by developing and expanding charging facilities.

https://www.transportnortheast.gov.uk/projects-and-campaigns/zero-emission-vehicle-zev-policy/

Leicester City Council has purchased seven battery-powered mowers and other low-carbon equipment for green spaces maintenance. Annual petrol savings from three of the mowers will be 3,285 litres, equal to 0.7 tonnes of annual carbon savings. They are also quieter, vibrate less, and have lower maintenance costs than those that are petrol-powered: https://news.leicester.gov.uk/news-articles/2020/may/council-tries-out-new-low-carbon-mowers-on-city-parks

5.4 Recommendations for the council

The following recommendations are made for the council to reduce emissions from transport:

- Reduce the number/distance of petrol/diesel vehicle journeys undertaken on council business by incentivising staff to undertake journeys on foot/bike/e-bike/public transport, for example through:
- Introducing expenses payments for walking/cycling/e-bike journeys that are commensurate or higher than for using petrol/diesel cars. (This could include an essential user allowance as well as a mileage allowance);
- Providing passes for using public transport;
- Consider removing the essential car user allowance, which requires beneficiaries to use their cars for council business journeys;
- Re-introducing a Cycle to Work scheme for council employees to acquire a new bike;
- Introducing more electric vehicle (EV) charging points at council sites and across the district. (This should be based on the council's electricity supply being the lowest carbon option available);
- Working with neighbouring local authorities on developing an area wide network of EV charging points;
- Accelerate the transition of the council's vehicle fleet to electric vehicles, (including grounds maintenance vehicles);
- Alternative forms of low carbon transport, should be considered, for example for deliveries between council facilities, such as e-cargo bikes.

6 Leisure and streetlighting

6.1 Engagement outcomes

The council owns a facility of outdoor football pitches. These do not currently have floodlights, but this is something they are interested in exploring. The changing rooms are in need of refurbishment and modernization. They have short bursts of energy demand for heating, lighting and hot water, so there will need to be consideration of how this can be provided in an energy efficiency or low carbon way (for example, solar thermal).

The council is also refurbishing tennis courts and installing LEDS in the floodlights.

Streetlighting accounts for 7% of the council's carbon baseline emissions. There is a 30-year capital investment programme to upgrade streetlights to LEDs, particularly in council-run car parks as this is a huge energy cost. Streetlighting has some shared maintenance vehicles with Staffordshire County Council which could be upgraded to EVs as part of the procurement process.

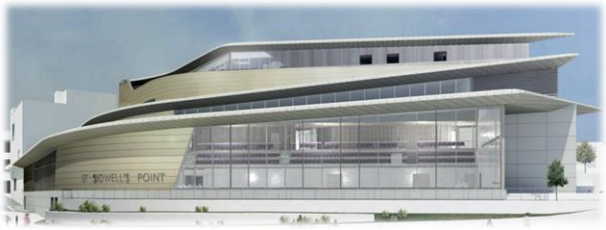
6.2 Embedding actions

The council does not currently have its own leisure centre, but secures provision of public swimming facilities at the Snowdome through financial contributions. If the council develops its own leisure centre in the future, whether through refurbishment/retrofitting of an existing building, or as a new build facility, it would need to consider how this could be done to make a net zero contribution to the council's carbon emissions, both in its design and operation. The new build St Sidwell's Point leisure centre by Exeter council in the case study below is a good example of how this can be done. The issues for consideration outlined in the non-domestic building section 3.1 would be relevant here.

6.3 Case studies

New Build Leisure Centre. Exeter Council have built St Sidwell's Point, a leisure centre that is built to ultra-energy efficient Passivhaus standard. Energy efficient measures include insulation, triple glazed windows, ventilation and heat recovery. This is expected to save up to 70% on annual energy costs:

https://exeter.gov.uk/leisure-and-culture/sport-and-leisure/exeter-leisure/st-sidwell-s-point



6.4 Recommendations for the council

- Refurbishment of changing facilities should be done to the highest energy efficiency standards and energy used should be the lowest suitable carbon systems available (see retrofitting information in non-domestic buildings section);
- Any planned new leisure centre/facility should be designed so that both its structure and operation will be a net zero carbon facility.

7 Waste

7.1 Engagement outcomes

The current waste services contract (shared with Lichfield) ends in 2023. Whilst there is interest in specifying EV or more likely hydrogen waste collection vehicles, stakeholders felt that the technology is not yet proven or affordable so the next contract will likely be for diesel vehicles and last for seven years. Waste collection vehicles travel around 100 miles per day across the two council areas, which means locking in a certain amount of emissions until at least 2030. Interviewees pointed out that the distance travelled is increased because of the location of the waste depot on the western side of Lichfield.

Waste disposal happens in different ways / locations and through different contract mechanisms (including contracts let by County):

- Green waste is shredded and stored at the council's depot, bulked up and then sent to recycling (which Tamworth pays for). The council is exploring selling their waste for use as biomass fuel.
- The main recycling centre is in Loughborough. Both domestic recycling and street arisings are sent here. However, the recycling collection systems will change in April 2022. Paper and card will still be sent away for processing, whilst cans, glass and plastics will be managed more locally. New bags are being introduced for residents in communal blocks / properties to help ensure separation of recyclables. Stronger messaging from Government would help create more of a mandate around recycling and food waste collection.
- Residual domestic waste and waste in council bins goes to Four Ashes Waste to Energy Plant
- The council is still waiting for information and detail from Government on the requirement to introduce food waste collection services. If this is a requirement, then Tamworth will deliver the service, assuming that it is also funded by Government. Members and staff both expressed concern about the costs of this service, the need for new fleet vehicles and additional mileage, and the implications for black bin collection if additional services need to be brought in. The council has previously provided home composting bins.

Members and staff both suggested that greater coordination at a regional level would help with the delivery of waste services. Within waste collection, sharing routes across local authority boundaries could reduce mileage; this has been discussed previously and may now be revisited. Other opportunities include relocation of the waste depot to a more central location on the A38, east of Lichfield. Reorganising the depot would also help reduce journeys – for example, by introducing waste transfer so that waste from smaller vehicles is aggregated into one larger load for onward transfer. Members suggested that Staffordshire's Joint Waste Management Board may be able to develop a project around EVs or hydrogen vehicles for waste collection; a joint project would share the risks and bring in economies of scale.

7.2 Embedding actions

Waste collection accounts for 31% of the council's carbon baseline emissions (excluding procurement), the highest emitting service are joint with housing. Consideration of measures to reduce carbon emissions, therefore need to be undertaken at an early stage, as could make a significant contribution to reducing the council's carbon

emissions. As waste collection is currently a shared service with Lichfield District Council, measures will need to be agreed jointly by the two councils, or potentially with other neighbouring councils. Measures for consideration should include:

- Discussions at an early stage with the Staffordshire's Joint Waste Management Board to undertake work to:
  - identify opportunities for further joint working on waste collection/disposal.
  - which Ultra Low Emission Vehicles (ULEVs) are most appropriate for Staffordshire councils.
  - Identify opportunities for following the Reduce, Re-use, Recycle hierarchy, (plus composting and anaerobic digestion) for waste reduction across the area ahead of use of incineration or finally landfill. The possible introduction of deposit return schemes and extended producer responsibility (EPR) will have implications for council waste collections. It may reduce some materials going into household recycling and potentially could see new materials and funds appearing due to EPR.
  - lobby Government to mandate the use of recycling and food waste collection facilities by households and businesses.
- Undertake modelling work to identify the optimum location for the depot/most energy efficient collection routes to minimise the travelling distance of waste collection and waste transfer vehicles;
- Using results from the modelling and discussions above to relocate the depot to the optimum location and implement the most energy efficient collection routes to minimise carbon emissions;
- Provision within any new or expanded depot facility for ULEVs, including EV charging/fuelling stations as appropriate and waste transfer facilities to reduce the number of onward vehicle journeys.

7.3 Case studies

Leeds City Council is committed to only purchase Ultra Low Emission Vehicles (ULEVs) by 2030. As part of this in 2021/22 the council started the transition of its fleet of refuse collection vehicles. It is developing a new waste depot which will house and have facilities for 50 electric refuse collection vehicles.

Cheshire West and Chester Council introduced its new **'Recycle First' initiative** in 2012. This is a high-quality recycling and waste collection service for residents of the borough. It was managed under a collection contract with Keir and its current bulky waste collection service is managed by two key furniture reuse organisations, Changing Lives in Cheshire and Revive. With the aim of diverting up to 95 per cent of bulky items from landfill, its responsive collections allow residents to reuse and recycle bulky items. Co-benefits of this approach were increased volunteering and training opportunities, the establishment of a new reuse shop with an online portal for all bulky waste requests, and a new mattress recycling scheme.

Launched in March 2021, **Pembrokeshire County Council** set up a share, repair and reuse network that cuts waste and benefits local communities. It comprises three elements.

1. Eleven repair cafes spread across the county where volunteers repair broken items for free.
2. A Library of Things in Haverfordwest launched online in March 2021 and in-person in November 2021, where residents can browse items available online and borrow the items from the library at a low cost.
3. A series of re-manufacture workshops that takes unwanted broken or outdated objects that would otherwise go to landfill, repairs and upcycles them, then sells them to make money for local charities.

See: https://takeclimateaction.uk/climate-action/how-pembrokeshire-set-share-repair-and-reuse-network

For information about setting up repair cafes, see: https://www.repaircafe.org/en/

7.4 Recommendations for the council

The recommendations for the council to reduce emissions from waste are therefore:

- Discussions at an early stage with the Staffordshire's Joint Waste Management Board to undertake work to:

  - identify opportunities for further joint working on waste collection/disposal;
  - which Ultra Low Emission Vehicles (ULEVs) are most appropriate for Staffordshire councils;
  - Identify opportunities for following the Reduce, Re-use, Recycle hierarchy ,(plus composting and anaerobic digestion) for waste reduction across the area ahead of use of incineration or finally landfill;
  - lobby Government to mandate the use of recycling and food waste collection facilities by households and businesses;
- Undertake modelling work to identify the optimum location for the depot to minimise the travelling distance of waste collection and waste transfer vehicles;
- Using results from the modelling and discussions above to relocate the depot to the optimum location to minimise carbon emissions;
- Provision within any new or expanded depot facility for ULEVs, including EV charging/fuelling stations as appropriate and waste transfer facilities to reduce the number of onward vehicle journeys.

8 Procurement

8.1 Engagement outcomes

Members noted that procurement is a challenge for decarbonization as the council does not have huge buying power. The council is also facing a financial deficit so the pressure to select the cheapest option is very strong.

"We haven't got huge buying power, we're not Birmingham, we don't have the ability to negotiate. The hard bit is how do you build it into a contract and achieve value on a limited amount of budget."
Member, quote from workshop discussions

Issues such as carbon emissions and social value are considerations in larger contracts let by the council but have not yet filtered through to smaller contracts, or to contracts for services.

There are wider procurement challenges within the council: there have been issues with insufficient tenders, poor quality tenders, stalled tenders (particularly during the Covid period) and highly divergent pricing. Often this can be traced back to uncertainties in the way that specifications were written, and this needs to be addressed through training.

Given these wider challenges, carbon has not been a priority element. However, there was interest in how carbon might be weighted and evaluated in the tender process in order that it is meaningful to the decisions made. Future training on procurement and specifications should also include carbon considerations.

"It falls down on the wider piece –carbon doesn't get a look in. It's not in procurement documentation, it's not embedded. If we're buying things, we should be looking at low carbon options, at least look at them and then make informed decisions."
Interview with senior manager

There is collaboration with other local authorities around procurement, from joint contracts to regular meetings between officers. Joint procurements are usually led by the larger authorities with Tamworth as a participant. The council is also making use of frameworks as they help to bring in more potential suppliers but with greater consistency of costs.

One specific category discussed by stakeholder was IT equipment. The council purchased a lot at the start of the pandemic without really thinking about the carbon associated with its energy use (or embodied in materials). Equipment is replaced every three years so energy efficiency would be a consideration in the next wave. The council has already started to shift to web-based services and cloud-based storage systems which are expected to reduce energy use.

8.2 Embedding actions

Procurement of goods and services is identified as part of the council's scope 3 emissions. When considered as part of the councils emissions, together with the baseline emission described earlier and emissions associated with staff working from home, it contributes 52% of the council's emissions. Considerations for the council in embedding net zero into procurement policies and practices are as follows:

- Use the information provided in table 2 as the starting point to identify which categories of procurement are responsible for the largest proportion of carbon emissions and prioritise these for actions to reduce these. A preliminary assessment has been carried out as part of the baseline study and are presented in Section 2.2.1. Concerns described above about the limited purchasing power of the council may hinder the council's ability to procure lower carbon emission goods and services. Consideration should be given to opportunities for joint procurement of goods and services with neighbouring authorities, thereby increasing the council's purchasing power, which may enable procurement of lower carbon goods and services that otherwise would not be possible.
- The council could use the Social Value Act 2012 to deliver emissions reductions through procurement, as it requires councils to consider the social, economic and environmental impact of contracts and how they can best benefit the local community. A framework has been developed by the National Social Value Taskforce which provides a flexible, option-based framework for procurement that offers a consistent measurement solution supported by evidence and allows for benchmarking across and between sectors. As part of this a set of carbon reduction measures has recently been introduced, together with a series of other measures relating to other environmental benefits as well as jobs and skills. The council can select the elements of the framework that match their priorities.
- Building on the first point above, the council can encourage and enable its supply chains to become more carbon efficient through promotion of its approach to zero carbon procurement with existing and potential new suppliers, which will enable them to adapt and thrive.
- Commissioning teams within the council, for example for design and construction of facilities as part of the Future High Street Fund programme, need to engage with the procurement team at an early stage in order to build net zero carbon requirements into briefs for tendering of services.

8.3 Case studies

Hackney Council introduced a **Sustainable Procurement Strategy** in 2018. It aims to improve 'the efficiency of its commercial spend to deliver major social and environmental benefits within our local community and nationally', working both on its own or partnering with other public sector organisations. It has three key themes, with actions identified for each of these:

- Procuring green
- Procuring for a better society
- Procuring for fair delivery

https://hackney.gov.uk/procurement-strategy

8.4 Recommendations for the council

- Investigate further which categories of procurement are responsible for the largest proportion of carbon emissions and prioritise these for actions to reduce these;
- Work with neighbouring councils to identify opportunities for joint procurement of low carbon goods and services, thereby increasing the council's purchasing power;
- Introduce the National Social Value Taskforce's framework to provides a flexible, option-based framework for procurement that includes carbon reduction measures. The council can select the elements of the framework that match their priorities;
- Encourage and enable the council's supply chains to become more carbon efficient by promoting the council's approach to zero carbon procurement with existing and potential new suppliers;
- Commissioning teams within the council need to engage with the procurement team at an early stage in order to build net zero carbon requirements into briefs for tendering of goods and services.

9 Cross-cutting

9.1 Organisational commitment

"It needs to become the way of life, the norm. This needs to come through in policies, training, reports. A shared programme with timelines so we're all on the same journey, all going in the same direction on it. "
Interview with Senior Manager

Stakeholders recognized that the council had made a strategic commitment to reducing carbon emissions, both through the political declaration of Climate Emergency and through the changes in strategy, policy and operation that are now being developed and delivered. However, there was still debate about the depth of this commitment, particularly when compared with other, more immediate factors or pressures.

There has been political support for this agenda and climate change is seen as part of all portfolio holders' responsibilities. The practical implications of setting carbon targets are now starting to become clearer and there will need to be continued support from Members and an understanding of the consequences of different paths of action (for example, increased costs to procure lower carbon options).

Stakeholders felt that it was important to get all staff on board – there is strong support from senior management but there needs to be more engagement with middle management and officers.

Several stakeholders felt that acting on climate change was not the top priority for the council and nor should it be. There are wider social, environmental and economic issues which the council is addressing as it delivers its statutory and discretionary services. However, climate change and carbon reduction would need to be given more weight in the conversation if they are to become fully embedded in how the council operates.

As the council refreshes its corporate vision, there is an opportunity to embed net zero carbon in all council areas. Stakeholders at the officers' workshop suggested that some services may need to become "carbon negative" to balance others which are harder to decarbonise. Whilst there is a need for strategic leadership on this, it was felt that carbon reduction needed to become part of business-as-usual across the organisation, rather than being a silo function.

Stakeholders recognised that there are some things the council cannot do, and that there will be a need to "pick and choose" about how to have the biggest impact. Some areas – such as Planning – fall outside the scope of the Climate Emergency Declaration, but could have a greater impact on local carbon emissions than action across the council's corporate estate, for example. The co-benefits of action on climate change across the community were recognised and there was a strong sense that the council should invest in the place, not just in its services. Issues such as public health and wellbeing are important to the council even though they do not have direct responsibility. However, again, these discussions go beyond the current scope of the council's carbon targets.

Stakeholders were enthusiastic around the issue but, in general, cautious and measured in their approach. There was a combination of patience and pragmatism – not wanting to rush towards innovative or risky new technologies but rather waiting until they were

more proven. Similarly, people worried about unintended consequences, for example, shifting to heat pumps in council housing could push up residents' electricity bills if not done properly. Some stakeholders wanted to feel that they could try small scale projects to test and assess different approaches – there was a call for more openness and bravery on small pilot projects.

"We need to be self-aware – to acknowledge the risks and know what we can do. Be open. It's going to be tough to meet our commitments but we're taking them seriously and doing as much as we can."
Interview with Senior Manager

9.2 Corporate Plan

A new Corporate Plan is currently being developed; this will set the council's priorities for the next three years. It is likely to include a priority or project around climate change – stakeholders felt that it should be more of a priority (i.e., embedded across the council) rather than a project (which feels more restricted). The Corporate Plan then cascades through council departments who are asked to demonstrate how their work area contributes to delivery of targets.

As the Plan, and the organizational planning cycle, are short-to-medium term, some stakeholders felt that the 2050 target was too far in the future and that interim targets would help to focus action. This could include departmental targets.

Alongside the Corporate Plan will sit a Performance Management Framework and there is an opportunity to embed progress towards net zero carbon into this. Measuring the carbon impact of projects has not been done by the council before and is an area that would need upskilling. This would mean developing a system around carbon reduction to be used by officers in terms of project development, options appraisal and report writing. Suggestions from stakeholders included a risk-type matrix with red / amber / green options for carbon or a carbon score assigned to help compare different options. However, there would need to be an increase in carbon literacy across the organisation to help this (see Knowledge, capacity and skills below) along with the strategic commitment to ensure that this does not become a tick-box exercise.

9.3 Reset and Recovery

The council is working through a programme of Reset and Recovery. The first two phases focus on reining in the deficit and improving the council's finances, whilst the third phase includes a "root and branch" service review to take place over four years (starting in 2023). This presents an opportunity to embed net zero carbon into all service delivery areas.

9.4 Governance and decision making

"There is now a requirement for sustainability considerations in every report – I wouldn't say it's embedded but it's in the template. In the Medium-Term Financial Strategy, there's a paragraph on climate change where we mention what we're doing (it's not much but it's there)."
Interview with Senior Manager

The council has already introduced sustainability considerations across many of its reporting processes, for example, reports to Committee and council or Project Initiation Documents.

Members were keen to have more information. There are no regular reports on decarbonization as it does not align with an existing project and, therefore, with ways of reporting to council. Creating a "project" around decarbonization would enable performance indicators and quarterly reporting to Members, building visibility, scrutiny and support.

Reports and PIDs could be improved to be:

- More of an impact assessment
- More informed by evidence about the impacts, based on better officer / manager knowledge

Staff stakeholders were divided as to the effect of the inclusion of carbon in these sorts of reports. They felt that it showed a strong signal that the council was interested in carbon, but some were concerned that there was no challenge function from management before these reports were presented and that there needed to be more scrutiny from Members too. High workloads and the rush to get papers approved can mean that there's limited discussion and challenge.

Reports could be improved if there were simple ways to show the impact that decisions would have on carbon emissions (whether an increase or a decrease). At present, there is very little clarity about what the impact is of a particular decision as people don't have the tools to make calculations. It could be sufficient to give numbers based on precedents elsewhere (ie, similar work carried out by other local authorities).

An internal cross departmental net zero carbon working group could be set up to ensure that work progresses, and ideas are discussed.

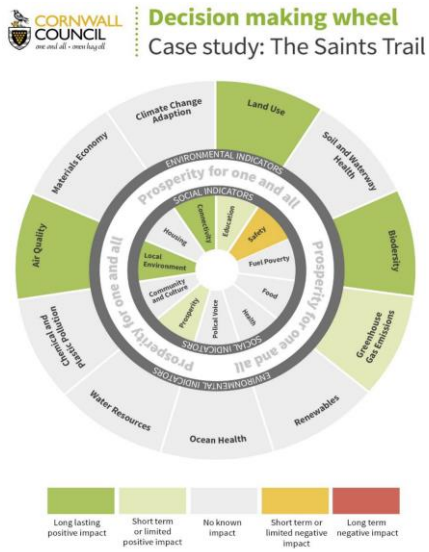
Case studies below present other council's approaches to embedding zero carbon into their decision-making processes:

Lewes District Council's Climate and Sustainability strategy sets 7 measurable goals to guide their climate action to 2030, with interim targets set to 2025 or earlier.

Specific goals and targets for each theme were debated over a period of 8 months at expert panel sessions made up of councillors and local experts. Considerations included what the council can commit to, what would be appropriate and what is realistically achievable. The interim targets agreed are:

1. **Energy and the built environment:** Increase solar energy capacity by 12 MW across the district, and achieve a 60% reduction in council carbon emissions, by 2025.
2. **Sustainable transport and air quality:** install electric vehicle (EV) charge points and cycle parking in all council car parks by 2025.
3. **Biodiversity:** ensure all major developments achieve at least 20% biodiversity net gain no later than 2025.
4. **Agriculture and food:** Engage with all council tenants about food growing and create governance and draft strategy for a local food partnership by 2022.
5. **Reducing emissions from waste:** ensure that 55% of waste is recycled by 2025.
6. **Water:** support Southern Water to deliver up to 50,000 water efficiency audits by the end of 2021..
7. **Circular economy and community wealth:** ensure that community investment in local projects is possible no later than 2025.

Cornwall Council Decision Making Wheel based on the Doughnut economics model to help make decisions that combat climate change and do not disadvantage the people of Cornwall. It is used by Cabinet to inform all their decisions. Example from Cornwall Council of how this works below:



9.5 Finance

"I think we all struggle because we've had the financial pressures for so long and every year we report on our financial hole and we're so reliant on the Government settlement figure. It's only a one year settlement so you can't plan ahead. You're always driven by balancing the budget […] and carbon wouldn't be taken into consideration."
Interview with Senior Manager

The Financial Management Plan covers a three-year period and has to be built on assumptions about income, including grants. Members noted that there needs to be a balance between investment and payback, recognizing that funding is likely to remain scarce. Members proposed that there could be a strategy in place for funding bids and a plan in place of pipeline projects that could be implemented should funding become available. A pipeline of projects would enable the council to identify which projects would make the greatest difference based on carbon savings and the level of investment required.

Capital budgets are framed within the Corporate Capital Strategy. A standard Capital Appraisal Form is used to any internal capital and for externally funded projects with an element of match funding. The form has not included carbon to date but, should it become a priority under the Corporate Plan, then it would flow through into the capital appraisal process.

There is more scrutiny over revenue budgets, as there is continuing scarcity and a pressure to make savings. To embed carbon, there would need to be a policy change proposed by officers or Members. This would need a business case to demonstrate the value of changing the process but it could be fairly straightforward to implement.

Because of the budget deficit, the main driver for decision making has been cost. Many stakeholders talked about the need to minimise costs and be prudent with public money. This has, at times, acted against uptake of lower carbon options which had a higher capital cost. That said, stakeholders again noted that the council is patient and does think for the longer term. Some capital projects in housing have a 50-year lifetime; for other areas, there are 30 year programmes in place.

9.6 Knowledge, capacity and skills

Most stakeholders talked about the need to increase knowledge and skills across the council. Carbon literacy training is being planned for senior managers and Members but this should be rolled out more widely and staff should be given dedicated time for this.

BEIS and the Greater Manchester Combined Authority have funded a Carbon Literacy Toolkit that is free to use for 'the delivery of certified Carbon Literacy training within recognised UK Local Authorities and can be used by their appointed training partners to do this. The only external costs for usage are therefore those of certification for individuals, which is the standard £10 per participant for UK Local Authorities':

For Members, carbon literacy might be more focused on specific topics and aligned with upcoming decisions (for example, a major re-tendering of a vehicles contract could be a focus for targeted training on EVs, hydrogen or other options). All newly elected members (including those who have been re-elected) take part in a training course each June/July and there could be opportunities for the journey to zero carbon to be part of this.

The council has a digital learning and policy platform which reaches all staff. New staff have to complete 10 e-courses and read 3 ‘How to’ guides; a net zero carbon guide could be added to this. There are also core policies that all staff have to have read and staff are automatically alerted when policies are updated. Compliance with these requirements is not 100%, particularly as there are so many demands on people’s time.

Some staff will need general carbon literacy training, but others will have more specialized needs. This is particularly the case for asset management / built environment professionals.

The council is developing a new Organisational Development Strategy which presents some opportunities:

- Net zero carbon could be added to the Personal Development Review (PDR) systems for targets to be set as part of appraisal system.
- Thinking about climate change could be embedded in recruitment processes for all staff and the leader – e.g. what can new recruits do to support the achievement of the NZC target?
- Engaging staff to generate ideas. The council has previously had a system where staff submitted ideas for improvements and the reward for the best idea was a day off.

Stakeholders worried about expertise and knowledge gaps: there is no “guru” within the council to go to get information on net zero carbon. Opinion was divided on whether should be a climate change officer should be recruited or whether expertise should be called on from external advisors or consultants. An officer would help to provide a focal point for activity, but might lead to climate change being seen in a silo rather than being

part of the whole organisation. Members recognised that officer capacity is an issue and that consultant support might be needed to help understand more about the costs and carbon savings of different options. This would help the council to understand where it can make the greatest difference with the resources that it has.

9.7 Communication and engagement

The council's emissions make up around 3% of the carbon footprint of the Borough. Whilst community-wide emissions are not part of the council's target commitment, several interviewees recognised that influencing the wider world is an important part of the council's work. Some of this influence could come through policy – for example, the Local Plan or how the council awards its grants – and some is about communications and engagement.

Both councillors and staff were interested in wider communication and presentation of the council's work and achievements. They identified the following opportunities:

- The council's PR and social media team are highly regarded and could help to share message about the work that the council is doing on net zero carbon. Several stakeholders noted that local authorities in general do not celebrate their successes and there was enthusiasm for promoting the council's work in this area. The council website could also be used to share projects and successes.
- A new partnership around carbon and climate change within Tamworth / with the community
- Engaging with the voluntary sector. The new Voluntary Sector Pledge will ask for social value criteria in procurement; this could include environmental aspects. Similarly, the council could explore asking voluntary sector groups who receive grant funding to provide a carbon footprint.
- The council commissions the Wildlife Trust to manage nature reserves so could work with them on community tree planting projects.
- Engaging with young people, perhaps through a Youth Climate council. (There was previously a Youth council, which could be re-established with an emphasis on climate issues.)
- Customer service staff could add net zero carbon to a 'script' they use when speaking with members of the public to raise awareness and seek views. Information and advice could also be provided through the housing repairs phone line.
- Regular resident surveys are undertaken, so climate change and carbon reduction could be included in these.
- council Tax bills are sent with an accompanying report on the breakdown of spending; this could include activity towards net zero carbon, especially where it demonstrates financial savings (e.g. energy efficiency of council buildings) or social outcomes (e.g., supporting people to pay their energy bills through better home insulation).
- Engagement events with the community, whether online, outdoor or face to face. There's a calendar of awareness weeks and days so the council could run wider awareness days around these issues.

"We haven't asked people if they're interested. Staff and members – we could use their passion on this to do things. We could get some bottom-up people who are passionate about it." **Interview with Senior Manager**

9.8 Collaborations and partnerships

There is strong collaboration with the other local authorities across Staffordshire, including with County.

A Staffordshire Leaders Board is being set up with each local authority having a vote, so even though Tamworth is the smallest local authority, it will have an equal voice. The Board will include a climate change and sustainability workstream, and will look at ways of working collectively to have the greatest impact. For example, a borough like Tamworth may be able to use land in other, more rural districts for tree planting / offsetting projects.

One of the proposals from the Leaders Board was a Citizens Jury though it was unclear what the role, form or area covered would be. One strong suggestion was to bring together the environmental groups in Staffordshire as a sounding board. Tamworth itself does not seem to have a strong environmental campaigning sector, so has not embarked on wider community engagement to this point. A Staffordshire wide approach would help identify common opportunities and challenges but the local authorities have different targets and approaches to achieving net zero, so there will need to be more local consideration too.

A Staffordshire-wide, multi-agency Communications Group was set up during Covid with representatives from the public sector and some voluntary and community organisations. It aimed to get clear messages out during the pandemic and is still in place so could offer a way of pushing out coordinated messages about net zero across the county.

The council works with the Health Partnerships on green spaces, which contribute to physical and mental health and can provide a backdrop for active travel.

There are opportunities for further collaboration; together the local authorities have collective resource and buying power. For example, the councils have different energy suppliers but could move to having a Staffordshire wide provider. Collaborative purchasing could give the authorities more influence and choice.

"It's about finding common approaches to break through into things we couldn't do alone."
Member, workshop quote

9.9 External factors

Action by the council will be steered by national Government commitments, for example, the push for no new petrol or diesel cars after 2030 or minimum energy efficiency standards for rented homes. Planning policy is an area of some uncertainty at present and this could have a significant effect on the types of development that emerge and, therefore, community-wide emissions.

Several stakeholders, including councillors, were keen to hear more from other local authorities about how they are addressing these issues. This might be in the form of networking to share experience and best practice. It might also be through national benchmarking, particularly to help compare Tamworth with other small councils. Benchmarking could be on a per employee or per service basis.

9.10 Funding

Many of the opportunities identified in this report for reducing the council's carbon emissions will require additional resources. As a small district council with a financial deficit projected in the next three years, this will be a challenge. Opportunities should be explored for multi-authority partnership working to enable staff to devote more time to develop funding bids and manage projects than Tamworth could as a single authority working alone and to share costs of projects/system delivery, as has been done in with the shared waste collection system. There are also a number of sources of information and funding opportunities to support council's and other organisations in making the transition to net zero. Some of these are outlined below. Members have indicated that they would like to have a number of 'pipeline' projects developed so that they could be put forward for funding as new opportunities arise.

- The LGA has produced a Financing Green Ambitions guide for councils on different sources of funding and how these might apply to different types of projects.
- The Government has launched a Green Heat Network Fund to support the delivery of low and zero carbon heat networks in England, with 11 bidding rounds from March 2022 to December 2024[10]. Tamworth council may be eligible to apply for funding to develop heat networks for both their non domestic and domestic estates.
- The Government funded Public Sector Decarbonisation Scheme (PSDS) was launched in 2020 to fund heat decarbonisation and energy efficiency measures in public sector estates. There have been three rounds of PSDS so far, plus a Public Sector Low Carbon Skills Fund and all were heavily oversubscribed and are now closed. There may be a possible fourth round of PSDS. The application windows of previous rounds have been very short, so having a number of 'pipeline' projects developed for heat decarbonisation and energy efficiency improvements as suggested by Members would strengthen the council's ability to secure funding from any future rounds.
- Defra will have a round 2 of the Local Authority Treescape Fund, which will make £5.4 million will be available in 2022/23 for planting trees outside woodlands. It is anticipated that up to 100 grants worth £50,000 to £300,000 will be available for local authorities, working together with community groups, volunteers and NGOs.

The landscape for funding is forever changing and this report can only reflect the current situation. However, there are some recommendations set out below to help best position the Council secure additional funding for its transition to Net Zero.

- Work with all the Staffordshire local authorities to identify opportunities for collaboration on project delivery and funding for Net Zero.
- Liaise closely with the Midlands Energy Hub, whose aim is 'to support the capacity of Local Enterprise Partnerships (LEP) and local authorities to identify and deliver local energy strategies and projects'
- The three PSDS rounds have been managed by Salix Finance, a non-departmental public body, owned wholly by Government, whose purpose is to 'provide funding and expert support to our partners, enabling and inspiring

[10] https://www.gov.uk/government/publications/green-heat-network-fund-ghnf

local and national climate action in the transition towards a low-carbon future'. Salix runs a number of funding schemes dedicated to enabling the public sector to reduce their carbon emissions in line with the UK's target to become net-zero by 2050. It would, therefore be prudent to check their website regularly for any announcements of new funding rounds.

- Partnering with private sector organisations can provide access to expertise and capital funding for low carbon energy/infrastructure projects. This may be an opportunity to work with the LEP and Combined Authority and other public sector organisations in the area to provide the critical mass or opportunities necessary to attract private sector interest. See the Bristol Leap case study below.
- Developing a Community Municipal Investment (CMI) scheme is a possibility for raising funds to deliver local projects that contribute to achieving zero carbon goals. A CMI is a bond or loan mechanism issued by a council directly to the public. CMIs can be used to supplement, diversify or replace sources of borrowing to fund-specific infrastructure projects, or to refinance existing debt. For councils they can provide a cheaper alternative to conventional sources of funds and reduce the overall cost of borrowing to taxpayers (see case study below).

The Bristol City Leap partnership is aimed at delivering low carbon energy infrastructure, such as solar PV, heat networks, heat pumps and energy efficiency measures at scale, all which will help Bristol meet its carbon reduction targets of becoming carbon neutral by 2030. The partners will invest in the council's estate to deliver low carbon energy infrastructure and support others, such as residents, community energy groups and businesses, to deliver local carbon reducing projects.

Private sector partners will contribute capital funding, including £424 million over the first five years of the twenty-year partnership, in low carbon energy and capacity and expertise in the delivery of low carbon energy infrastructure projects. The project will remove around 140,000 tonnes of carbon across the city in the first five years of operation'

In summer 2020, **West Berkshire Council** launched the UK's first Community Municipal Investment (CMI) scheme offering residents and community groups a unique way to invest in West Berkshire, funding green projects to help the district become carbon neutral by 2030. By October 2020, they achieved their goal of raising £1 million from 640 investors with 23% of total investment coming from West Berkshire residents. Projects funded include:

- six solar PV roof-based projects on council facilities, including a school, leisure centre, care facility, and council offices.
- Urban Tree Planting
- New footpaths and rural access schemes
- Active travel infrastructure improvements
- Tree planting and habitat creation as part of flood alleviation projects
- Energy efficiency upgrades for traffic signals and street lighting.

9.11 Strategy

Local authority strategies and policy can have far reaching internal and external impacts, so it is important that alongside other overarching priorities the council embeds net zero carbon in all its strategies and policies. The council's strategies and policies should be updated to include issues and recommendations for individual service areas identified in

the previous sections. We understand that the planned full review of council services may not now be happening, but suggest that a policy and service review is undertaken to align policy, spending and service delivery with the council's net zero carbon ambitions. In addition to individual service areas, there are other opportunities for the council to demonstrate and deliver on its commitment to achieve its net zero carbon target:

- The council's Corporate Plan is a three-year plan that outlines what the council wants to achieve and has achieved over the three-year plan period and sets out the council's vision, purpose and strategic priorities. Working towards the council's net zero carbon goal isn't included in the current 2019-22 plan as a strategic priority, or purpose of the council, but should be included in the 2023-25 Corporate Plan. This has the potential to be a powerful tool to engage staff in delivery of the council's net zero carbon plans, through the process of asking each team how their area of work contributes to delivery of the targets in the plan. It will also signal to external partners, residents, businesses and community organisations the council's commitment to achieving its net zero carbon goal.
- The council's Performance Management Framework could be updated to monitor and evaluate progress on carbon emission reduction. The detail of this could form part of the council's Climate Action Plan.

Other policy levers that could be introduced that will support a move to zero carbon across the borough include:

- introducing Air Quality Management Areas
- introducing Clean Air Zones which require drivers of polluting vehicles to pay a charge;
- imposing speed limits (eg 20 mph zones);
- introducing parking charges including a workplace parking levy; restricting traffic in certain areas or at certain times (Traffic Regulation Orders);
- taxi licensing only for electric taxis and private hire vehicles[11]

9.12 Planning policy

Action on climate change could be developed more strongly within the Local Plan. Currently there is a policy around climate change mitigation, but this needs to be broadened to pull all thinking about climate change together. Stakeholders noted that there can be a tension between different types of policy: Supplementary Planning Documents are often used for more detailed aspects such as design, and this is encouraged by Planning Inspectors. However, those SPDs do not carry as much weight as full policies and therefore leave the council open to challenge.

The council will shortly be undertaking a Local Plan review. The current Local Plan includes a Climate Change Mitigation Policy, but a Climate Change Policy needs to be developed as part of the review that pulls all strands on climate change mitigation and adaptation together.

[11] https://www.local.gov.uk/publications/councillor-workbook-local-pathway-net-zero

As part of the local plan review, consideration should be given to building zero carbon design guides into the local plan and also into the planning approval processes. One example of this is the LETI Climate Emergency Design Guide, which provides guidance on five key areas (operational energy, embodied carbon, the future of heat, demand response and data disclosure) for four types of building (small scale residential, medium/large scale residential, commercial offices, and schools).

Whilst the availability of new development sites across the district is limited, there are a number of resources available to help guide place based planning for zero carbon, such as: the TCPA's guide on Masterplanning for net-zero energy and the UK Green Buildings council's New Homes Policy Playbook mentioned in the housing section earlier.

Reading Borough Council's Local Plan, adopted in 2019, requires all new residential developments of 10 or more homes to be built to zero carbon standards if possible. If the developer determines that achieving the zero carbon standard is not possible, a minimum 35% reduction in carbon emissions compared to minimum UK standards must be delivered. The developer must also pay £1,800/tonne of carbon emissions to offsetting in the local area.

Although only a relatively small number of houses were granted planning permission in 2020/21, all of these will conform to the zero carbon standards and the number of houses built to this standard in the borough will increase over time.

The Milton Keynes Local Plan includes a Sustainable Construction Supplementary Planning Document (SPD)which requires developers to follow the energy hierarchy below. Energy reduction is the first step and residential developments of 11 or more homes, or non-residential development of 1000 sq. metres or more, must achieve a minimum performance requirement of a 19% improvement on Building Regulations

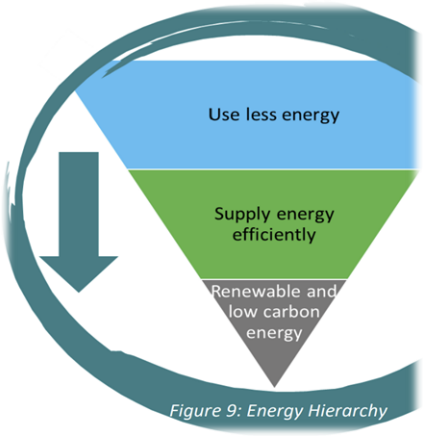


Figure 9: Energy Hierarchy

10 Council investment in fossil fuels

Tamworth Borough Council invests in a variety of projects and processes. These investments have an associated carbon footprint, although there are no known direct investments in fossil fuel companies. Estimating these emissions is complex, particularly when considering investments which are indirectly linked to fossil fuel organisations. As such, emissions from investments are typically not included in GHG baselines for net zero targets. Whilst this is the case, it remains important and is best practice for Tamworth Borough Council to consider where they are investing and examine the potential ways in which low carbon alternative invest opportunities can be conducted.

In February 2021, UK Divest published data on the proportion of local authority pension funds that are invested in fossil fuel industries[12]. UK Divest is an independent organisation comprised of various partners such as Friends of the Earth and Platform, with the aim of encouraging institutions to divest from fossil fuels. Their report, *Divesting to protect our pensions and the planet An analysis of local government investments in coal, oil and gas*, details the pension fund holdings of each local authority in 2017 and presents the total and percentage contribution of pension holdings to investments in fossil fuels. Data on local government pension fund holdings were collected through freedom of information (FOI) requests to each local authority. All assets accounting for > 1% of each pension fund's value were additionally screened to capture indirect investments. Those which could not be broken down were estimated using indexes sourced from State Street Global Adviser[13] and linked to CU200, a list of the top 100 coal and top 100 oil and gas publicly traded reserves holders globally. These are raked by the potential carbon emissions of their reported reserves.

UK Divest report that Tamworth Borough Council's current pension fund, managed by Staffordshire Pension Fund, is investing 3.3% of its assets into fossil fuels. This equates to £146 million which is 45% greater than the UK average of £100.4 million. **Figure 4** outlines the ten largest fossil fuel holdings and includes both direct and indirect investments. Whilst Tamworth may consider taking some ownership of this investment, TBC is limited in the extent to which it can influence divestment as the fund is managed by Staffordshire County Council (SCC) who also form the strategy for investment.

SCC have developed a Staffordshire Pension Fund Climate Change Strategy which sets out Staffordshire Pension Fund's approach to managing the risks and opportunities presented by climate change. The fund has a target to be Net Zero by 2050 and has identified three key steps to achieving this:

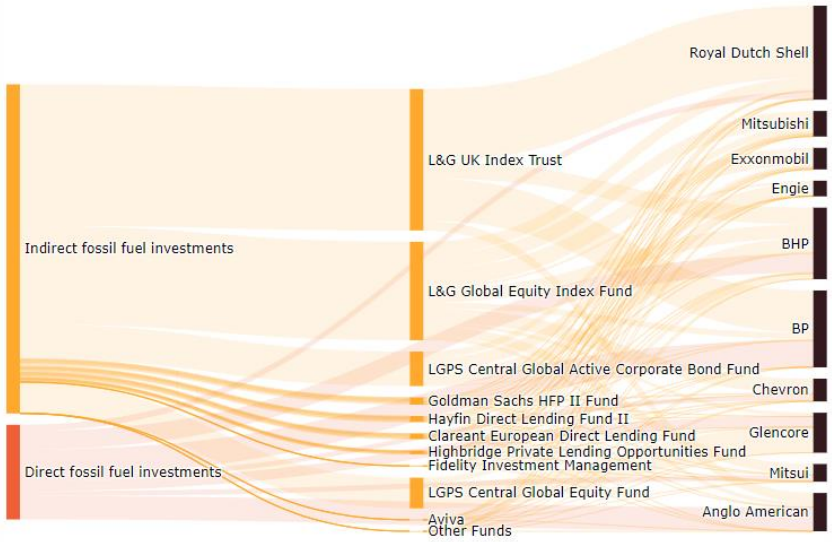
- Integrate climate change considerations into the complete investment process through the selection, due diligence, monitoring and stewardship of assets, Staffordshire Pension Fund either directly or through the Fund's appointed investment managers, with the aim of decarbonising the entire investment portfolio.
- Access the best possible climate change data available, to be able to assess climate risks and opportunities. This will enable the Fund to make the best possible decisions and understand the impact of climate change on itsFunding and Investment Strategies.

[12] https://www.divest.org.uk/wp-content/uploads/2021/03/UKDivest_Report.pdf
[13] https://www.ssga.com/uk/en_gb/institutional/etfs

- Work collaboratively with other investors and organisations, to improve the quality, relevance and availability of climate-related data and encourage alignment with the 2015 Paris Agreement.

The fund has set an interim climate change targets for 2030 which are to; reduce the proportion of the Fund invested in Fossil Fuels reserves to less than 4% by 2030, Reduce the proportion of the Fund invested in thermal coal to below 1% by 2030 and Increase the proportion of investments where carbon metrics are reported to over 95% by 2030.

Figure 4: The largest 10 direct and indirect fossil fuel investments as part of the Staffordshire Pension Fund



Source: https://divest-dashboard.herokuapp.com/

10.1 Case studies

The **London Borough of Waltham Forest** became the first local authority in the UK to announce that it would be divesting its pension funds from fossil fuels.

By the end of the 2016/17 financial year when the divestment announcement was made, the Waltham Forest's pension fund held £53.4 million of oil, gas and coal stocks (6.6% of the fund's total value). By 2021 this proportion had further dropped, leaving only £3.5 million still to divest – huge progress in just a few years.

See: https://takeclimateaction.uk/climate-action/how-waltham-forest-divesting-pensions-out-fossil-fuels

10.2 Recommendations

As SCC has operational control of the pension fund, TBC has limited control over divestment. However, TBC can monitor the progress that SCC makes against their climate targets committed to within the Staffordshire Pension Fund Climate Change Strategy and the annual Climate Stewardship Plan that they publish. UK Divest have

produced useful resources on divesting from fossil fuels, including a briefing for councillors entitled *Protecting our pensions and the planet*[14]. Published in November 2021, the briefing provides information on fossil fuel divestment, current progress by local governments to divest, and action that can be taken to divest in fossil fuels. TBC should review this guidance to ascertain if any action could be taken for investments other than the pension fund held by SCC.

[14] https://www.divest.org.uk/wp-content/uploads/2021/12/UKDivest_Cllr_Briefing.pdf

11 Conclusions and Recommendations

11.1 Conclusions

Tamworth Borough Council declared a climate emergency in 2019 and set a target for its estate to reach net zero carbon by 2050, or 2030 if financially able to do so. This project was commissioned to aid the council to understand its baseline emissions and to present opportunities and potential barriers for climate reduction to meet this commitment.

A greenhouse gas baseline inventory was compiled for the 2019/20 financial year, the scope of which was agreed during a scoping workshop with council staff in January 2022. Tamworth Borough Council's GHG emissions for 2019/2020 were estimated to be 1,783 tCO2e. The largest source of emissions was council waste collection (31%). Gas consumption within council-owned buildings make up a significant proportion of total emissions, 26%. The methodology for procurement is not well established and has a high uncertainty and were therefore presented separately. Emissions from this source was comparable to total emissions.

There are some sources which are currently not included within the baseline, or for which the methodology could be improved. Staff commuting is an indirect emission source which could be included through development of a staff survey. Working from home and procurement emissions were reported separately due to the high uncertainty associated with the methodologies to calculate these emissions.

The findings of this report aim to aid the council in identifying opportunities for climate action and to assist in the formation of a Climate Action Plan.

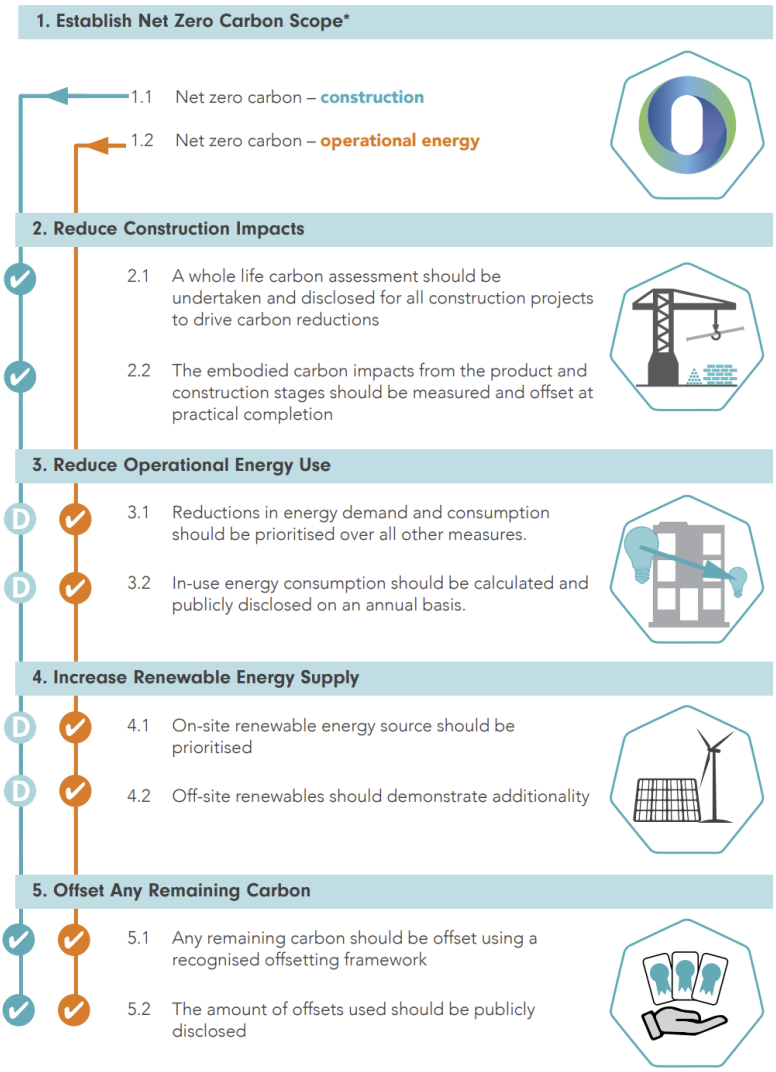
11.2 Key Recommendations

Recommendations have been identified throughout the report, which the council will need to reflect on when developing its Climate Action Plan on how to deliver its Net Zero Carbon commitment. As a small local authority, there will be challenges in meeting this commitment, such as funding climate measures. The following concluding headline recommendations, which encompass the detailed recommendations in the report are offered to the council.

Recommendations:

- To improve future emissions estimates, data should be collected for the following sources: energy usage within standard council housing (currently only communal spaces), staff commuting, and homeworking.
- The council should reduce emissions using a carbon emission reduction first, carbon offsetting last approach, as per set out by the UK Green Building Council[15] as outlined below:

[15] https://www.ukgbc.org/wp-content/uploads/2019/04/Net-Zero-Carbon-Buildings-A-framework-definition.pdf



- Develop a long-term strategy for funding of Net Zero Carbon measures, together with a pipeline of projects to enable the council to be in the best position to secure funding as opportunities arise.
- Build the Net Zero Carbon knowledge, capacity and skills of council staff and Members through training, accessing additional expertise and cross departmental working groups.
- Develop systems to embed delivery of Net Zero Carbon into the council's decision making and operational processes. For example, development of a Net Zero Carbon procurement policy, development of a Net Zero Carbon options appraisal system for committee reports.
- Explore joint Net Zero Carbon opportunities with neighbouring councils and other public sector bodies, e.g. for joint procurement, shared services, funding bids.

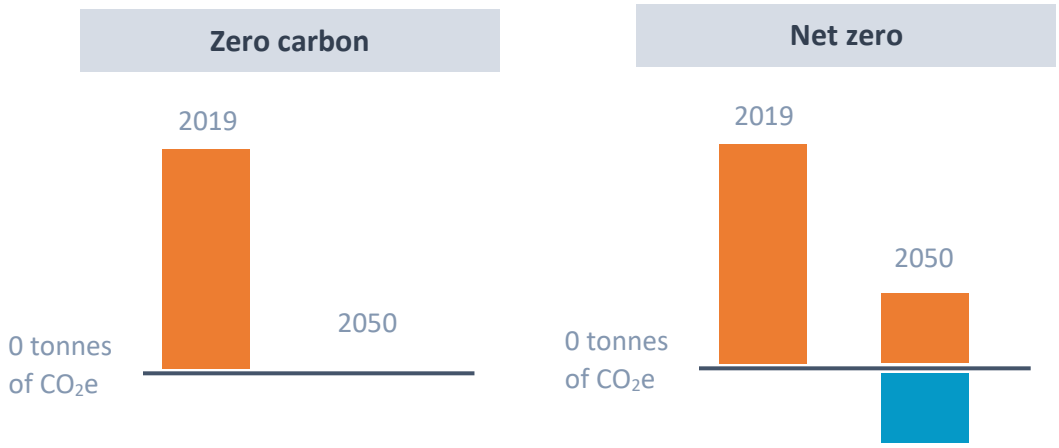
Appendix 1

12 Data and Methods

12.1 Definitions

In line with the council's resolution, the term "decarbonisation" is used in this and accompanying report to mean the same as becoming "carbon neutral" or "net zero carbon": the balancing of carbon emissions against carbon removals and/or carbon offsetting with the net result being zero, as illustrated in **Figure 5**. “Net zero” is used in this report as shorthand to cover the net balancing of the main greenhouse gases: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The global warming potentials of CH_4 and N_2O are used to calculate the equivalent warming to CO_2, to allow the estimation of total GHG effects on the atmosphere in one unit, CO_2-equivalent, or CO_2e. The council agreed that their net zero targets should cover carbon dioxide, methane and nitrous oxide, not just carbon dioxide. Any reference to “carbon neutral” and “decarbonisation” in this report is understood to be shorthand to cover methane and nitrous oxide as well as carbon dioxide.

Figure 5: Options for achieving net zero



As defined by the Climate Change Committee (CCC), a net-zero (i.e. carbon neutral) target requires “deep reductions in emissions, with any remaining sources offset by removals of CO_2 from the atmosphere (e.g. by afforestation)”. This removal requires either the purchase of carbon offsets[16] or direct carbon removal through additional carbon removal and storage (“sequestration”) activity on an organisation’s estate.

[16] Where a project for reduction in greenhouse gas emissions is funded in order to compensate for emissions made elsewhere.

12.2 GHG inventories

A GHG inventory is a dataset which presents estimates of emissions of various greenhouse gases from a wide range of activities in an organisation, country or other geographical area. The standard approach to estimate GHG emissions is by multiplying activity data by an emission factor associated with the activity being measured (**Equation 1**).

Equation 1: Emission factor approach for calculating GHG emissions.

GHG emissions = activity data * emission factor

Emission Factor - This is the emissions per unit of activity, which usually comes from scientific literature. It is typically derived from measurement.

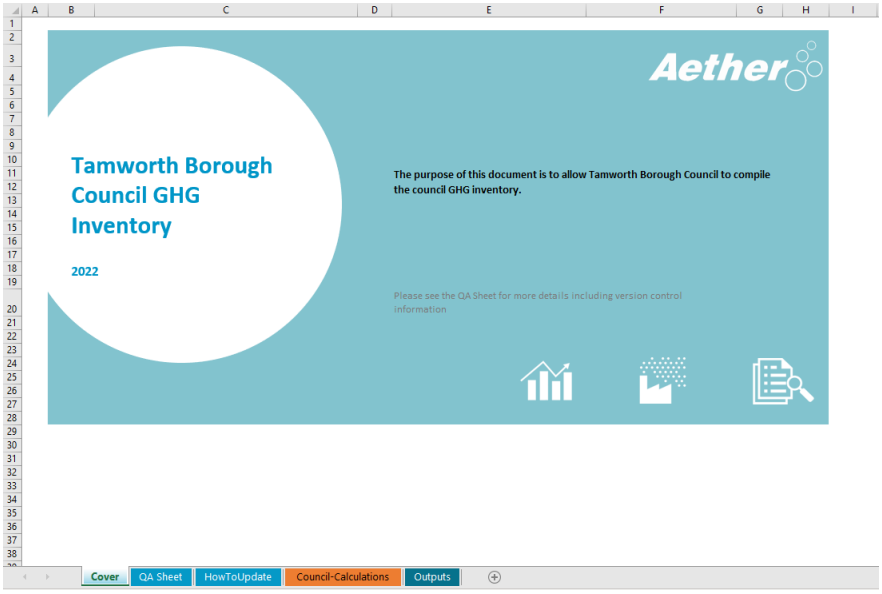
Activity data - This is a measure or estimate of the activity which is taking place, such as number of cows or tonnes of fuel. This data typically comes from national statistical datasets or from the organisation in question, in this case Tamworth Borough Council.

For example, estimating CO_2 emissions from the use of electricity involves multiplying data on kilowatt-hours (kWh) of electricity used by the emission factor ($kgCO_2/kWh$) for electricity, which will depend on the technology and type of fuel used to generate the electricity.

A GHG dashboard has been developed to contain the GHG inventories for both the council and the borough. These are colour-coded for transparency within the tool. Data sources are fully referenced in the calculations and within a 'How To Update' sheet in the workbook. This contains step-by-step instructions on how council officers can update the inventories annually in the future. **Figure 6** shows the cover page of the GHG inventory tool. The sheets of the tool are as follows:

- **QA Sheet** – containing meta-data on version control, authors, quality assurance checks
- **How To Update** – containing steps on how to update the inventories and tracker in future iterations, as well as full references for data sources
- **council-Calculations** - containing activity data, emission factors and emissions calculations for the council
- **Outputs** – containing summary figures of the inventories.

Figure 6: Structure of TBC's GHG Inventory tool



12.3 Geographical and temporal scope

Setting the geographical and temporal boundaries is relatively straightforward at a high level:

- The geographical boundary is the area covered by the council administrative area. Emissions from the council's own assets and activities are included and calculated as a subset of those emissions.
- The year for the inventory is determined by the latest available data from the relevant sources not affected by the COVID-19 pandemic; this is therefore the 2019/20 financial year[17].

Emissions were estimated for 2020 (see Section 12.7) but were not included in the main report due to lack of data availability for all sources, most notable energy consumption within council-owned buildings. However, as the council will be transitioning to a hybrid working from home setup, indicative emissions have been calculated where possible.

12.4 Operational Scope

When reporting emissions, it is important to consider which sources to include. The Greenhouse Gas Protocol provides a widely used set of standards which describe emission sources and "scopes" which should be considered as part of a local carbon accounting process; the definition of the three scopes is shown in **Table 1**, below, as applied to the 2019 inventory for the council.

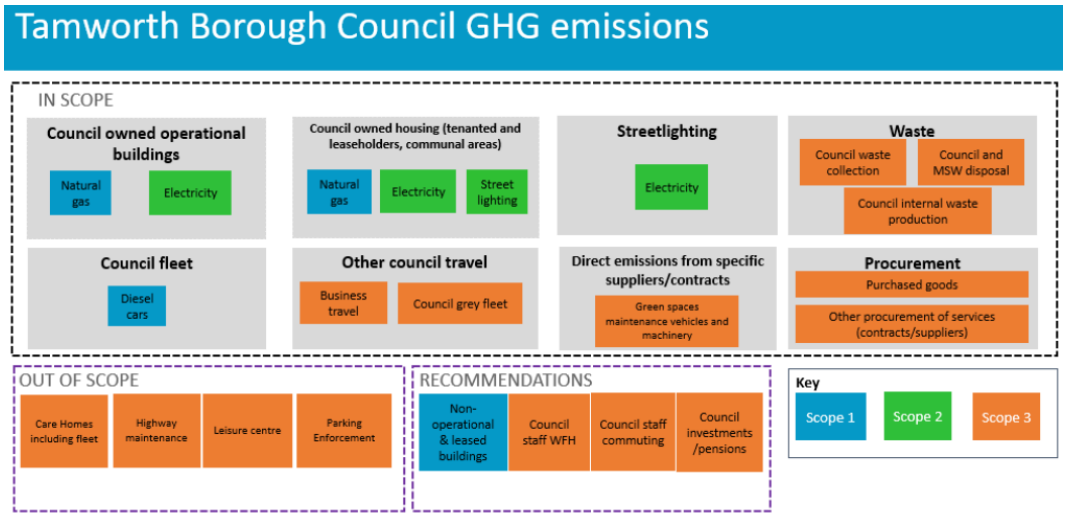
[17] Data sources for the council inventory are available on a financial year basis only.

Table 5: Summary of emissions sources by scope in Tamworth Borough Council's GHG inventory

Scope of emissions	Tamworth Borough Council
1	Direct fuel consumption of (gas, petrol, diesel) in council-owned buildings (operational, community, housing and other), council transport fleet
2	Electricity use purchased from the national grid in council-owned buildings (operational, community, housing and other), streetlighting and council transport fleet
3	Fuel consumption (petrol and diesel) in council contracts for waste collection, highway works, green spaces maintenance, council grey fleet, and transmission and distribution of electricity use

An Internal Scoping Workshop was held in January 2022 with all key cross-department colleagues from Tamworth Borough Council to discuss the scope of the council 2050 target and GHG emission inventory. These discussions and one-to-one meetings continued into February and March with council Members and the Corporate Management Team to finalise and agree on the scopes for both targets. This is presented in **Figure 7.**

Figure 7: Emissions boundary for the council GHG inventory



Note: Electricity includes transmission and distribution losses from electricity supply.

12.5 Exclusions from scope for this project

As noted in **section 12.4**, there are some sources which cannot be quantified to an acceptable level of certainty, either because data do not exist or because the data are not available for specific local authorities. Such sources will be addressed in TBC's climate action plan but have not been included in the GHG inventory.

Emission sources that were not included in the inventory as data were not available include:

- Water consumption (scope 1)
- Non-operational and leased buildings (scope 1)
- Council staff commuting (scope 3)
- Highway maintenance (scope 3)
- Parking enforcement (scope 3)
- Council waste disposal transport (scope 3)

Including these sources will help prevent "carbon leakage" where services are outsourced (or brought back in-house) in the future. To include emissions from all outsourced scope 3 emissions sources would require the collection of data from contractors who may not be contractually obliged to provide such data and may regard it as commercially sensitive. Some scope 3 emissions sources which are not currently included in the council inventory include emissions from other council contracts and suppliers, staff commuting, and activities funded by pensions and investments. If data are obtained on such activities in the future, estimates can be included in the inventory. To ensure time-series consistency, any additions to the inventory should be added in for historical years as well. If historical data is not available, extrapolation or proxy methods could be used.

12.6 Input data

12.6.1 Activity data

Data were collected directly from Tamworth Borough Council and in the case for waste emissions, from Lichfield District Council. **Table 6** summarises the data sources used for the GHG inventory. Detailed references are provided in the "How to Update" sheet of the GHG inventory tool.

Table 6: Data sources for the council GHG inventory

Source number	Data Source	Sector	Description
1,4	Energy consumption spreadsheet (received from Tamworth Borough Council	Energy	Electricity and gas consumption for council owned operational buildings, community building, council housing and other council-owned buildings, all in kWh.
9	Streetlighting (received from Tamworth Borough Council)	Energy	Electricity consumption for streetlighting in £, with an approximate kWh/£ unit price provided. This covers unmetered street lighting and car parking in addition to highway lighting maintained by TBC.
3	Fleet fuel consumption (received from	Transport	Data collected on the total fuel consumed by council vehicles (two diesel vans). The fuel is supplied by the depot.

Source number	Data Source	Sector	Description
	Tamworth Borough Council)		
3	Green spaces fuel consumption	Green spaces maintenance and vehicles	Data collected on fuel consumption in vehicles used within the borough for green spaces by the relevant supplier, including on-road, off-road and other machinery.
5	Business travel expenditure data (received by Tamworth Borough Council)	Transport – business travel	Data collected on business travel car milage and expenditure claims for public transport (assumed all rail).
2	Waste collection (received by Lichfield District Council)	Waste collection	Data collected on tonnage of waste collected in council waste collection vehicles by the relevant supplier. This includes municipal waste, recycling, and green waste which is sent for processing.
11	Expense reports for 2019/20 and 2020/21	Procurement of other goods and services	council expense reports for the 2019/20 and 2020/21 financial years.

The energy consumption data covers a range of council-owned buildings which were categorised into four groups: operational, community, housing and other council-owned buildings. Consumption data provided were for the whole site, aside for non-sheltered council housing wherein data applies to consumption within communal areas. The buildings covered are summarised in **Table 7**.

Table 7: Buildings covered within the energy consumption data included in the council emissions inventory

Category	Buildings included	Data coverage
Operational buildings	Marmion House Town Hall Assembly Rooms	Whole site
Community buildings	Sports pitches (3G football pitches, rugby pitch) Activity Centre Market/street displays Tamworth Castle and museum	Whole site
Housing	Sheltered housing Standard housing	Whole site Communal areas
Other council-owned buildings	Depot Cemeteries Public conveniences	Whole site

Table 8 contains the activity data used to calculate emissions for Tamworth Borough Council.

Table 8: Activity data for the council GHG inventory

Sector	Category	Fuel	Unit	Source number	Activity data for the 2019/20 financial year
Energy	Operational Buildings	Electricity	KWh	1	589,733
Energy	Operational Buildings	Gas	KWh	1	483,422
Energy	Community Buildings	Electricity	KWh	1	343,357
Energy	Community Buildings	Gas	KWh	1	28,922
Energy	Housing - sheltered	Electricity	KWh	1,4	377,353
Energy	Housing - sheltered	Gas	KWh	1,4	1,855,537
Energy	Housing - standard	Electricity	KWh	1,4	343,291
Energy	Housing - standard	Gas	KWh	1,4	109,034
Energy	Other council buildings	Electricity	KWh	1	79,387
Energy	Other council buildings	Gas	KWh	1	80,004
Energy	Streetlighting	Electricity	KWh	9	424,605
Transport	Council fleet - Van	Diesel	litres	3	22,434
Transport	Business travel - car	Unknown	miles	5	60,414
Transport	Business travel - rail	Unknown	£	5	3,252
Waste	Municipal refuse to EFW	-	tonnes	2	15,903
Waste	Kerbside recycling	-	tonnes	2	7,774
Waste	Garden Waste	-	tonnes	2	3,763
Green spaces vehicles and machinery	Mechanical sweepers	Diesel	litres	3	15,752

Sector	Category	Fuel	Unit	Source number	Activity data for the 2019/20 financial year
Green spaces vehicles and machinery	Mechanical plant	Diesel	litres	3	20,787

12.6.2 Emission factors

Emission factors for the council GHG inventory are taken from "UK Government GHG Conversion Factors for Company Reporting"[18] for the applicable sources and years. The 2019 emission factors are applied to the data sources which relate to the 2019/20 financial year. **Table 9** contains the emission factors used to calculate emissions for Tamworth Borough Council.

Table 9: Emission factors for the council GHG inventory

Sector	Fuel	Unit	Data source	Emission factor for the 2019/20 financial year
Energy	Grid Electricity	kgCO_2e/kWh	UK Government GHG Conversion Factors for Company Reporting - UK Electricity - Electricity generated	0.25560
Energy	Grid Electricity T&D	kgCO_2e/kWh	UK Government GHG Conversion Factors for Company Reporting - Transmission and distribution - T&D- UK electricity	0.02170
Energy	Natural Gas	kgCO_2e/kWh	UK Government GHG Conversion Factors for Company Reporting - Fuels - Gaseous Fuels - Natural Gas - kWh (Gross CV)	0.18385
Transport	Car - Diesel - Average	kg CO_2e/miles	UK Government GHG Conversion Factors for Company Reporting - Passenger vehicles - Cars (by size) - Average car - Diesel	0.27901
Transport	Car - Unknown fuel - Average (km)	kg CO_2e/km	UK Government GHG Conversion Factors for Company Reporting - Passenger vehicles - Cars (by size) - Average car - Unknown	0.1771
Waste	Mixed recycling (tonnes)	kg CO_2e/tonne	UK Government GHG Conversion Factors for Company Reporting - Waste disposal - Refuse - Municipal - Open Loop Recycling	21.3538

[18] https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting

Sector	Fuel	Unit	Data source	Emission factor for the 2019/20 financial year
Waste	Organic Garden Waste Composting (tonnes)	kg CO_2e/tonne	UK Government GHG Conversion Factors for Company Reporting - Waste disposal - Refuse - Organic: garden waste - Composting	10.2039
Waste	Refuse Municipal to EFW (tonnes)	kg CO_2e/tonne	UK Government GHG Conversion Factors for Company Reporting - Waste disposal - Refuse - Municipal - Combustion (EFW)	21.3538
Transport	HGV - Diesel - Average all types and sizes - average laden (tonne.km)	kg CO_2e/tonne.km	UK Government GHG Conversion Factors for Company Reporting - Freighting Goods - HGV - Diesel - Average all types and sizes - average laden (tonne.km)	0.1113
Transport	Diesel - average biofuel (litres) - Transport	kg CO_2e/l	UK Government GHG Conversion Factors for Company Reporting - Fuels - Liquid Fuels - Diesel (average biofuel blend) - litres	2.5941
Transport	Rail - annual revenue per passenger km	£/passenger km	Office of Rail and Road - Revenue per passenger kilometres and per passenger journey - Table 12.10	0.1553
Transport	Rail - National rail - passenger km	$kgCO_2e$/passenger.km	UK Government GHG Conversion Factors for Company Reporting - Business travel land - Rail - National Rail (passenger.km)	0.0412

12.6.3 Procurement emissions

Emissions from procurement were calculated separately as there is a high level of uncertainty associated with the calculations. Standard industrial classification codes (SIC) are used by industries to categories different activity types. In 2014, Defra published 'Indirect emissions from the supply chain'[19] which contains a list of carbon factors for each SIC code. Using expense reports provided by Tamworth Borough Council, emissions from the procurement of goods and services were calculated by assigning expenses related to procurement against the relevant carbon factor included within the SIC dataset. This method is highly uncertain, as it presents a generic carbon factor across a given activity and assumes that carbon emissions scale with spend. This is not always the case, for example investing in lower carbon technologies such as electric vehicles would be reported as an increase in emissions using this method.

Procurement emissions were calculated for both the 2019/20 and 2020/21 financial years (see section 2.3.1 for further information on emissions during the 2020/21 financial year). As Tamworth Borough Council provided an expense report, activity related to the transfer of finances, were excluded from estimates. This includes the following:

- Council Tenant Rent Rebates
- Rent Allowances
- Item 8 Debit
- External Interest Payable
- Rates

Expenses related to activity already included within the baseline were additionally excluded to avoid double counting. This covers sources such as refuse and recycling joint arrangements and electricity.

Overall, 97% of total expenses in 2019/20 were examined and 35% were for the procurement of goods and services. To ensure consistency across years, 35% of procurement spend in 2020/21 was captured. Categories included in both years remained largely consistent, with differences resulting from spend related to COVID-19 included within 2020/21. Therefore, there were some categories which were captured in 2019/20 that were not included in 2020/21 as they fell outside of the 35% threshold.

12.7 Council 2019/20 GHG emissions inventory

Table 10 below contains emissions by category for Tamworth Borough Council, for the 2019/20 financial period.

19 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/404542/Table_13_Indirect_emissions_from_supply_chain_2007-2011.xls

Table 10: Estimated tCO_2e emissions for Tamworth Borough Council in 2019/20, including procurement

Sector	Scope	2019/20 (tCO_2e)	% of total emissions
Operational buildings (electricity)	2/3	164	4%
Operational buildings (gas)	1	89	2%
Community buildings (electricity)	2/3	95	3%
Community buildings (gas)	1	5.3	0.1%
Housing (electricity)	2/3	200	5%
Housing (gas)	1	361	10%
Other buildings (electricity)	2/3	22	0.6%
Other buildings (gas)	1	15	0.4%
Streetlighting	2	118	3%
Transport (Council fleet/grey)	1	58	2%
Transport (Business travel)	3	18	0.5%
Green spaces vehicles and machinery	1	95	3%
Council waste collection	3	544	15%
Procurement of other goods and services	3	~2,000	52%
Total		**8,728**	

12.8 2020/21 GHG emission estimates

The 2020 COVID-19 pandemic resulted in a marked change in everyday operations for organisations, including Tamworth Borough Council. As a result, the 2019/20 financial year was agreed to be the most appropriate year to conduct an GHG emissions baseline. However, Tamworth Borough Council has elected to maintain certain changes to operations instigated by the pandemic, such as working from home, and this is not reflected in the baseline. This section outlines emissions estimates for the 2020/21 period to highlight the effect of these changes.

12.8.1 Methodology

Emissions were calculated in the same manner as outlined above. The scope of the input data was reduced in 2020/21 compared to 2019/20. Emissions were only calculated

where data were available for both years to ensure differences in emissions could be explained by genuine changes in activity data and/or emission factors. The most notable data source excluded from this section is energy consumption within council-owned buildings. Emissions from council fleet and green spaces and machinery were also not calculated.

A summary of the activity data and emission factors used are summarised in **Table 11** and **Table 12** below, with corresponding 2019/20 values for comparison.

Table 11: Activity data for the council GHG inventory, 2019/20 and 2020/21

Sector	Category	Fuel	Unit	Source number	Activity data for the 2019/20 financial year	Activity data for the 2020/21 financial year
Energy	Streetlighting	Electricity	KWh	9	424,605	490,919
Transport	Business travel - car	Unknown	miles	5	60,414	17,176
Transport	Business travel - rail	Unknown	£	5	3,252	8
Waste	Municipal refuse to EFW	-	tonnes	2	15,903	17,714
Waste	Kerbside recycling	-	tonnes	2	7,774	8,305
Waste	Garden Waste	-	tonnes	2	3,763	4,117
Green spaces vehicles and machinery	Mechanical sweepers	Diesel	litres	3	15,752	15,752
Green spaces vehicles and machinery	Mechanical plant	Diesel	litres	3	20,787	20,787

Table 12: Emission factors for the council GHG inventory, 2019/20 and 2020/21

Sector	Category	Fuel	Unit	Data source	Emission factor for the 2019/20 financial year	Emission factor for the 2020/21 financial year
Energy	UK	Grid Electricity	$kgCO_2e/kWh$	UK Government GHG Conversion Factors for Company Reporting - UK	0.25560	0.23314

Sector	Category	Fuel	Unit	Data source	Emission factor for the 2019/20 financial year	Emission factor for the 2020/21 financial year
				Electricity - Electricity generated		
Energy	UK	Grid Electricity T&D	kgCO_2e/kWh	UK Government GHG Conversion Factors for Company Reporting - Transmission and distribution - T&D- UK electricity	0.02170	0.02005
Transport	UK	Car - Diesel - Average	kg CO_2e/miles	UK Government GHG Conversion Factors for Company Reporting - Passenger vehicles - Cars (by size) - Average car - Diesel	0.27901	0.27108
Transport	UK	Car - Unknown fuel - Average (km)	kg CO_2e/km	UK Government GHG Conversion Factors for Company Reporting - Passenger vehicles - Cars (by size) - Average car - Unknown	0.1771	0.1714
Waste	UK	Mixed recycling (tonnes)	kg CO_2e/tonne	UK Government GHG Conversion Factors for Company Reporting - Waste disposal - Refuse - Municipal - Open Loop Recycling	21.3538	21.3167
Waste	UK	Organic Garden Waste Compostin g (tonnes)	kg CO_2e/tonne	UK Government GHG Conversion Factors for Company Reporting - Waste disposal - Refuse - Organic: garden waste - Composting	10.2039	10.2039
Waste	UK	Refuse Municipal to EFW (tonnes)	kg CO_2e/tonne	UK Government GHG Conversion Factors for Company Reporting - Waste disposal - Refuse - Municipal - Combustion (EFW)	21.3538	21.3167
Transport	UK	Diesel - average biofuel (litres) - Transport	kg CO_2e/l	UK Government GHG Conversion Factors for Company Reporting - Fuels - Liquid Fuels - Diesel (average biofuel blend) - litres	2.5941	2.5460

Sector	Category	Fuel	Unit	Data source	Emission factor for the 2019/20 financial year	Emission factor for the 2020/21 financial year
Transport	UK	Rail - annual revenue per passenger km	£/passenger km	Office of Rail and Road - Revenue per passenger kilometres and per passenger journey - Table 12.10	0.1553	0.1522
Transport	UK	Rail - National rail - passenger km	$kgCO_2e$/passenger.km	UK Government GHG Conversion Factors for Company Reporting - Business travel land - Rail - National Rail (passenger.km)	0.0412	0.0369

A significant change that Tamworth Borough Council made to operations since 2019 is a transition to home working for some of its staff. As of August 2021, 200 staff members were working from home. Emissions related to working from were calculated by applying a carbon factor to the number of employees working from home. The carbon factor used was 0.3 tCO_2e/FTE/annum, as reported by the Sustainability Scotland Network in their 2021 report, *SSN Guidance on Completing Public Bodies Climate Change Duties Annual Report* [20]. This factor assumes a full-time employee works 200 days of the year to account for annual leave and sick days.

It was assumed that the 200 staff members were all full-time employees and worked from home full time.

Additional information was provided on Tamworth Borough Council on future working from home. From the 1st April 2022, 163 of the 351 council staff will be working from home with an additional 65 hybrid workers. Again, it was assumed all staff working from home are full-time employees.

12.9 Inventory recommendations

12.9.1 Council buildings

Energy consumption data from council-owned building were not available to use to calculate emissions in 2020/21 due to lack of data availability. Energy consumption within council-owned building comprise a significant portion of the council's carbon footprint and were likely highly altered by the changes initiated by the COVID-19 pandemic. Therefore, it is recommended that energy consumption data is available in

[20] https://sustainablescotlandnetwork.org/uploads/store/mediaupload/1572/file/CC%20Reporting%20Master%20Guidance%202021%2013.07.21.pdf

future years to ensure that future emission estimates remain consistent with previous years.

12.9.2 Staff commuting

Emissions from council staff commuting are not included in the baseline due to data availability. In order to include emissions in future inventories, it is recommended that the council develops a staff travel survey. There are two methods to consider: a fuel-based approach or a distance-based approach. To ensure efficiency, current council capacity and resources should be considered when deciding which method is most appropriate, if this source is included within estimates.

A fuel-based approach would require the council to obtain fuel consumption data from staff members across the financial year. This could be reported simply as petrol/diesel consumption per employee, or if capacity allows a more detailed split on fuel type i.e. biofuel blend, 100% mineral fuel.

Another method is to collect the distance travelled by each staff member across the financial year. This, at a minimum, would need to be categorised by vehicle type – car, bus, train etc with assumptions made on the size and fuel type used within each vehicle. A more detailed approach would additionally include vehicle size (small/medium/large) and fuel type (petrol/diesel/hybrid). Additional categorisation allows for a more accurate estimate that accounts for variation in fuel efficiency across different vehicle sizes.

12.9.3 Procurement

Calculating emissions from procurement is highly uncertain. One area of uncertainty is regarding the expense categories provided within the council's expense transaction reports. A brief description associated with each category would assist in assigning spend to relevant carbon factors and aid in identifying which categories are related to the procurement of goods and services, as opposed to financial transactions.

To gain a more accurate representation of emissions from procurement it is recommended that the council:

- Improve the accuracy of the emission calculations by engaging with their highest spend sectors to enable suppliers to perform their own carbon baselines. The council may also consider it appropriate to make carbon reporting a requirement as part of supplier contracts.

12.9.4 Working from home

With the transition to reduced on-site office workers, emissions from working from home become more important. It is therefore necessary that in future years, Tamworth Borough Council is able to accurately estimate emissions from working from home. Calculating emissions from this source is a new and ongoing area of development, and as such there is no one recognised methodology. The emission factor used in this report

to calculate emissions provides a high-level estimate but involves assumptions based on factors such as heating systems and average number working hours.

The Ecoact *Homeworking emissions* white paper[21] documents a more detailed methodology to calculate emissions from working from home. It requires knowledge of energy consumption from work equipment, lighting, and heating used whilst working from home for all employees. This more in-depth methodology would provide a more realistic estimate, however, defining the boundary between energy consumption related working can be difficult, for instance if multiple people are at home during the workday and only one person is working from home.

[21] https://info.eco-act.com/en/homeworking-emissions-whitepaper-2020

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