Greenhouse Gas Emissions Report

Babergh District Council

April 2023 to March 2024

BABERGH DISTRICT COUNCIL
SOUTH SUFFOLK

Contents

Glossary

• Air-source Heat Pump	ASHP
• Carbon Dioxide Equivalent Tonnes	tCo2e
• Combined Heat and Power	CHP
• Greenhouse Gas	GHG
• Electric Vehicle	EV
• Hydrotreated Vegetable Oil	HVO
• Kilowatt Hour	kWh
• Kilowatt Peak	kWp
• Megawatt Hour	MWh
• Global Warming Potential	GWP
• Sheltered Housing Unit	SHU
• Solar Photovoltaic	Solar PV
• Methane	CH4
• Nitrous Oxide	N20
• F-gas hydrofluorocarbon	CFC
• F-gas perfluorocarbon	PFC
• Sulphur hexafluoride	SF6

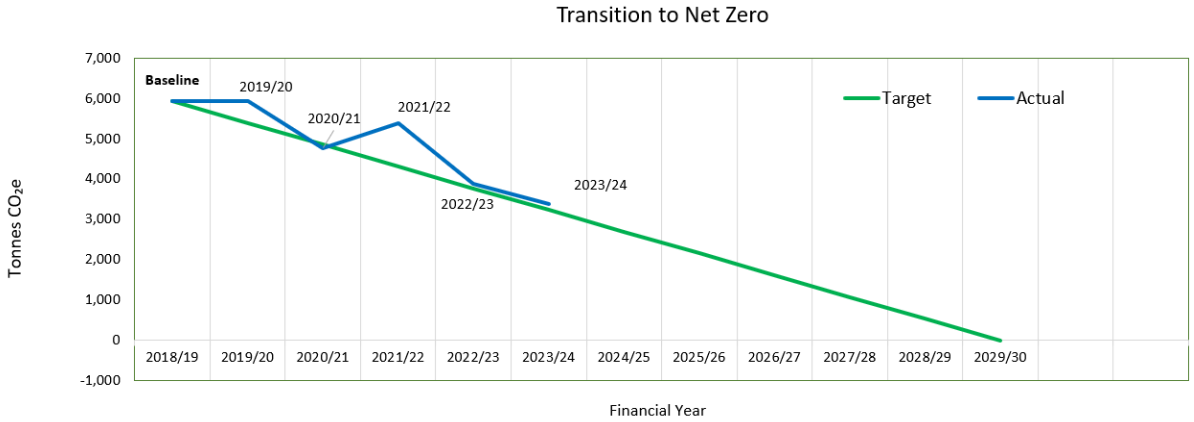
Executive Summary

In 2019, Babergh District Council together with Mid Suffolk District Council declared a climate emergency. This included the ambition of the councils to achieve net zero emissions by 2030 against the 2018 combined baseline emissions of 5,933 tCO2e.

This report was previously a joint document covering both councils. However, in most areas, data has now been split to create an individual report for Babergh.

This report aims to set out our council's Greenhouse Gas (GHG) emissions and monitor progress towards our net zero goals. This annual analysis is crucial in identifying areas that need greater focus, as well as understanding the impact of measures implemented in previous reports.

Graphic 1: *The transition from 2018-2030 to Net Zero for Babergh and Mid Suffolk*



For both councils combined, 2023/24 emissions saw an overall reduction of 13% in tCO2e emissions compared to 2022/23. For the 2023/24 reporting year, emissions amount to 3,388 tCO2e, which is 152 tCO2e (4.7%) above the projected target of 3,236 tCO2e.

There could be any number of reasons for being above target including:

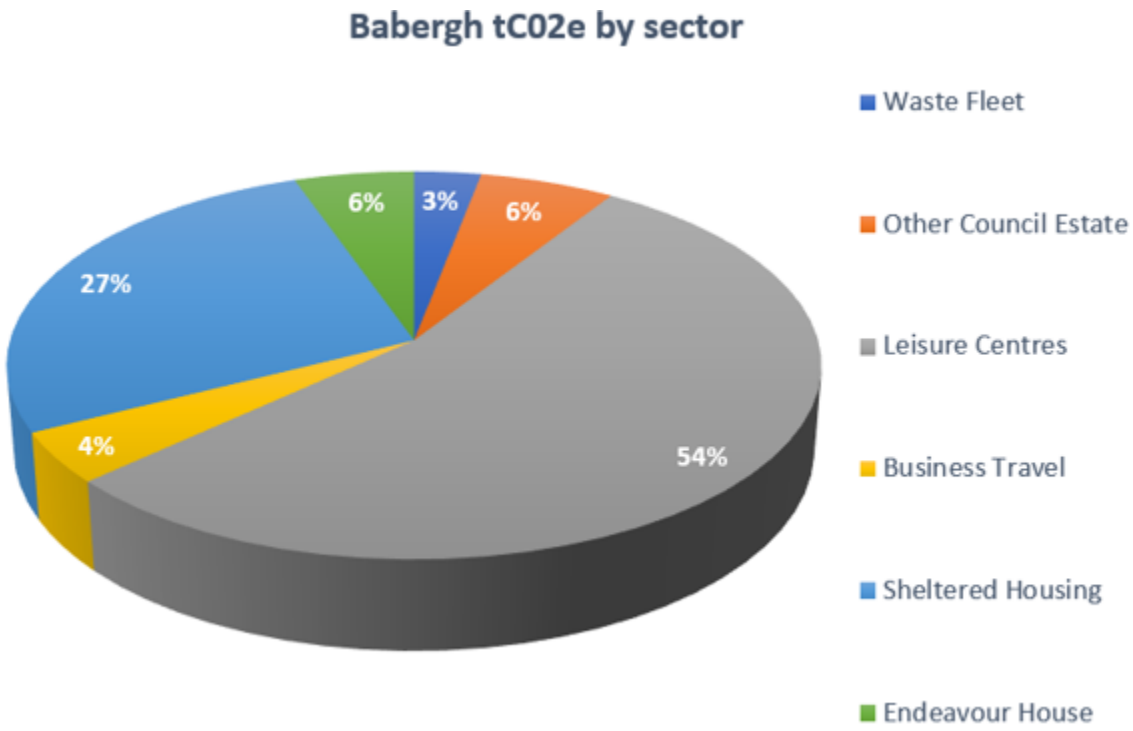
Slight changes to conversion factors from those used in previous years - central Government GHG conversion factors are being used in 2023/24 compared with conversion factors from varied sources in 2022/23.

Installation of 30 EV charge points across the districts which may have increased Scope 2 emissions this year, but overall and there will be wider benefit to the people of Babergh in the long run in terms of cleaner air and decreased emissions.

Introducing the inclusion of water consumption data (Scope 3) where possible, which has not been included in previous reports.

The trajectory shown in Graphic 1, is a combined figure for both councils; however, we will aim to separate the data for subsequent reporting periods.

Graphic 2: Pie chart showing the % C02e produced by each sector in Babergh in 2023/24



Graphic 2 shows that the leisure centres (Kingfisher and Hadleigh) emit the most potential greenhouse gas emissions, accounting for 54% of all emissions.

6% of emissions are from ‘other council estate’ properties and services delivered by the council, which are essentially all other council buildings which are not sheltered housing such as public toilets, temporary housing and landlords lighting.

Reduction in energy consumption at both leisure centres and sheltered housing units are priorities identified in the council’s Carbon Reduction Management Plan.

There is a direct relationship between carbon emissions and costs and therefore a reduction in emissions will be a win-win for the council.

1. Introduction

This Greenhouse Gas report for Babergh is for the fiscal reporting year 2023/24. The report defines the trajectory of greenhouse gas emissions since the baseline year 2018/2019 to support policymaking and action planning towards the desired outcome of net zero by 2030. This report should be read alongside the refreshed Carbon Reduction Management Plan for the council's operations published in 2024 which identifies areas of focus for reducing carbon emissions.

This report, as with the previous ones, use 2018/19 emissions data as the baseline and measures the progress in terms of carbon emission reduction, together with the trajectory in which we will need to travel to meet the council's aim of being carbon neutral by 2030.

In the longer term, further work will need to be undertaken to put measures in place that allow the council to report more Scope 3 emissions in a quantifiable format.

Scope 3 emissions include indirect emissions such as water supply and treatment, the impact of energy conservation attempts in social housing and temporary accommodation, and employee's vehicle use. However, currently the focus is on ensuring the Scope 1 and Scope 2 consumption data held is reviewed and correct.

2. Methodology

The methodology to monitor, measure and report the council's carbon footprint follows the HM Government Environmental Reporting guidelines[2].

For each council-operated service delivery activity, we assess both direct and indirect energy consumption including electricity, gas and water usage (where available) in council buildings; fuel consumption for council-owned vehicles and mileage of private (and leased) cars used for council business.

The carbon footprint of each activity and building is evaluated using consumption data (Kwh) provided by Vertas who provide energy billing, monitoring and support services to the councils, internal service departments, for example for fuel purchases for waste fleet ad our third-party partners, for example leisure center service providers.

In the longer term, further work will need to be undertaken to put measures in place that allow the council to report more Scope 3 emissions in a quantifiable format.

Scope 3 emissions include indirect emissions such as water supply and treatment, the impact of energy conservation attempts in social housing and temporary accommodation, and employee's vehicle use. However, currently the focus is on ensuring the Scope 1 and Scope 2 consumption data held is reviewed and correct.

2.1 Carbon Dioxide Equivalent

Conversion factors, which are published annually in June by the UK Government[3], were then applied to consumption figures (electricity, gas, water, fuel etc.) to produce Co2e.

Table 1: 2023/2024 fiscal year UK central Government conversion rates

UK Government Conversion Factors	Unit	UK Government Conversion Factors	Unit
Natural Gas	0.20264	Petrol (aver car)	0.26473
Burning oil	2.54000	Aver car (fuel unknown)	0.26860
Petrol (aver biofuel)	2.10000	Aver car (plug in hybrid)	0.15062
Diesel (aver biofuel)	2.51000	Biodiesel HVO	0.03558
Gasoil	2.76000	Electricity (grid mix + T and D)	0.22535
Elec generated (grid mix)	0.20705	Water (m3)	0.15311
Elec (transmission & distribution)	0.01830	Homeworking	0.33378
Diesel (aver car)	0.27334		

For the purposes of this report, we have used the UK government 2023/24 conversion rates to maintain a cohesive and dependable approach to our carbon reporting that can be replicated annually. In the 2022/23 GHG report, the majority, but not all, conversion factors were from the published Government source.

In addition, use of the Local Government's Greenhouse Gas Accounting tool was explored as an alternative to the current process. Although it was easier to use, it did not provide a sufficient level of detail that would allow identification of trends from specific sources of emissions to support decisions on future areas of focus in terms of carbon emission reduction.

2.2 Council Properties

The Babergh properties and services that are included in this Greenhouse Gas report include the following:

- Endeavour House
- Kingfisher and Hadleigh leisure centres operated by third-party provider, Abbeycroft
- Sheltered Housing Units (SHU)
- Streetlighting and landlords lighting
- Sewage treatment works
- Council-owned vehicles
- Emissions by Councillors to attend council business meetings
- Emissions by staff on council business
- Emissions created from employees working from home

2.3 Scope 1,2 and 3 emissions

This Greenhouse Gas report primarily focuses on Scope 1 (direct emissions) and Scope 2 (indirect emissions from purchased energy). It is extremely difficult to quantify Scope 3 emissions (emissions from suppliers), but we are keen to make progress in this area wherever we can, although this is likely to take time.

The work currently taking place by the Head of Commissioning and Procurement is key to enabling us to reduce our Scope 3 emissions.

Graphic 3: Explanation of the different Scope emissions

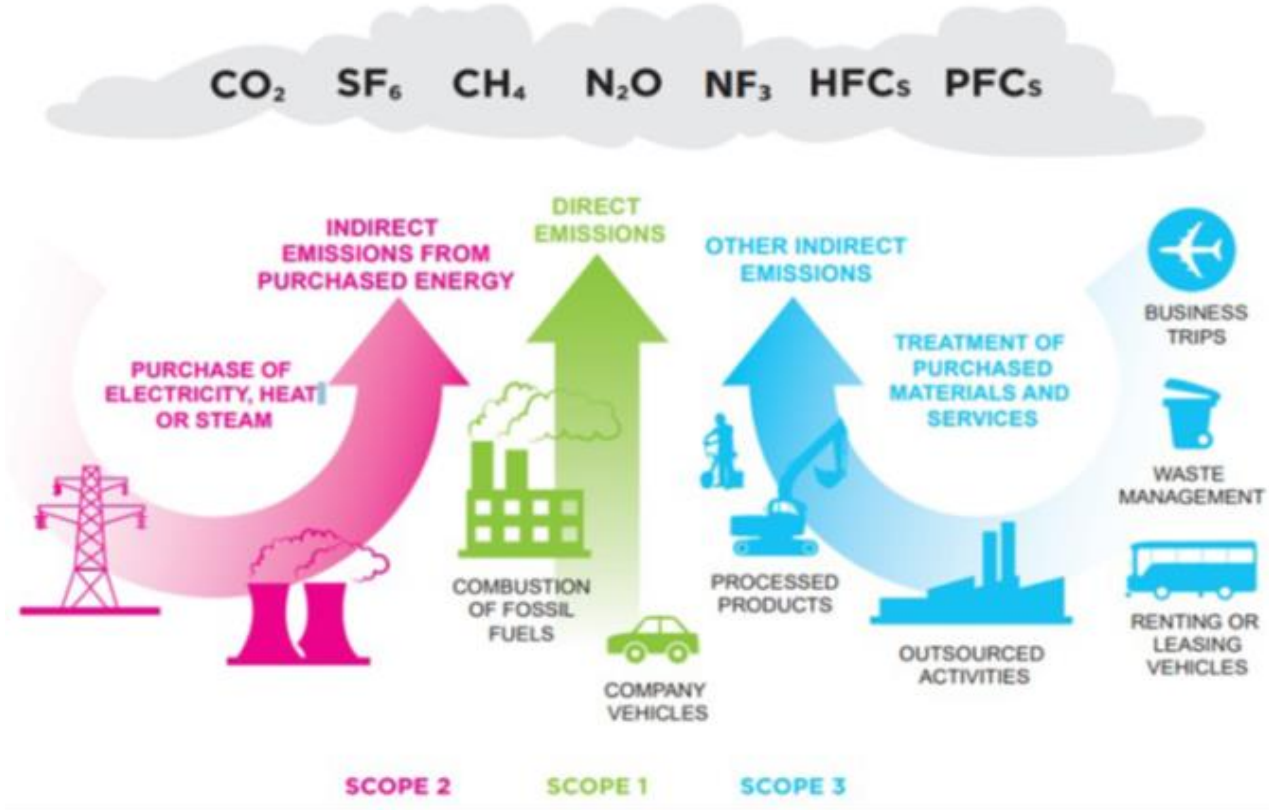


Table 2: Babergh emissions included in each Scope as defined in Graphic 5.

Scopes	Included	Explanation and changes from last year	Excluded data and why
Scope 1	• Oil (Kerosene) • Leisure centre gas • Sheltered Housing gas • Babergh proportion of Endeavour House gas • Diesel and HVO (Waste trucks) • Depot gas	Scope 1 inclusions are the same as last year	
Scope 2	• Endeavour House electricity • Street lighting • Sheltered Housing electricity • Leisure centre electricity • Depot electricity • Sewage treatment works	Leisure Centre electricity has all been included in Scope 2 this year. In 2022/23 it was spread across Scopes 2 and 3 due to supply contracts moving from leisure centre operators to BMSDC and therefore being interpreted as being under Scope 3.	Apart from the discovery of some anomalies in the data, most of the social housing is the responsibility of the tenant. For this reason, data for social housing is not included in GHG reporting, despite the council having responsibility for the state of the housing stock. There is currently a mixed picture as to the inclusion of the councils' temporary accommodation facilities as some are the responsibility of tenants and others are chargeable. This is an area that requires more consideration.

Table 2 continued: Babergh emissions included in each Scope as defined in Graphic 5.

Scopes	Included	Explanation and changes from last year	Excluded data and why
Scope 3	• Business travel – councilors and employees • Homeworking emissions • Water Supply and Treatment • T+ D (Transmission and Distribution) Electricity	Indirect emissions, upstream and downstream. T + D electricity is the electricity (roughly 7%) that is lost in bringing electricity to our buildings from the Grid. It is included in Scope 3 because it is not included in the consumption figures used to produce Scope 2 emissions and the council can directly influence these emissions through reducing the amount of electricity it uses from the grid.	Food and Drink waste is excluded because there is no landfill in Suffolk. Paper is not included because it is recycled within Endeavour House. Third party supplier Diesel and HVO have been excluded. We do not currently have access to this data and it is likely it will be difficult to quantify this going forward because unless the council is the sole contractor for an organisation it will be time-consuming to retrieve this data from a third party.

2.4 Data gaps and reliability

Accurate GHG reporting is often dependent on third parties providing buildings energy consumption data. For example, Abbeycroft, managing Babergh leisure centres, has responsibility for managing the metering and supply of water. We are reliant on Abbeycroft for ensuring that meters are functional, and readings are accurate.

The emissions produced in Endeavour House have been calculated by Suffolk County Council. Babergh and Mid Suffolk District Councils utilise 14% of the building's area so we have divided their calculations to work out 14% of this total and then divided by two to reflect Babergh's share of the space. Shared spaces, such as communal areas, the canteen and toilets are mostly included in this calculation, although it is difficult to be precise with these areas.

For Scope 3 emissions we are reliant on the provision of accurate vehicle mileage and have had to make assumptions about vehicle sizes which affect the conversion factors. Missing or incorrect data/assumptions could therefore lead to a margin of error.

This could be +/- 5% in this report and therefore the figures in this report should not be taken as absolute figures. Whilst there will always be some assumptions made and therefore a margin of error, it is hoped that over time this could be reduced by improvements in energy data management and general data collection.

3.1 Emissions by scope

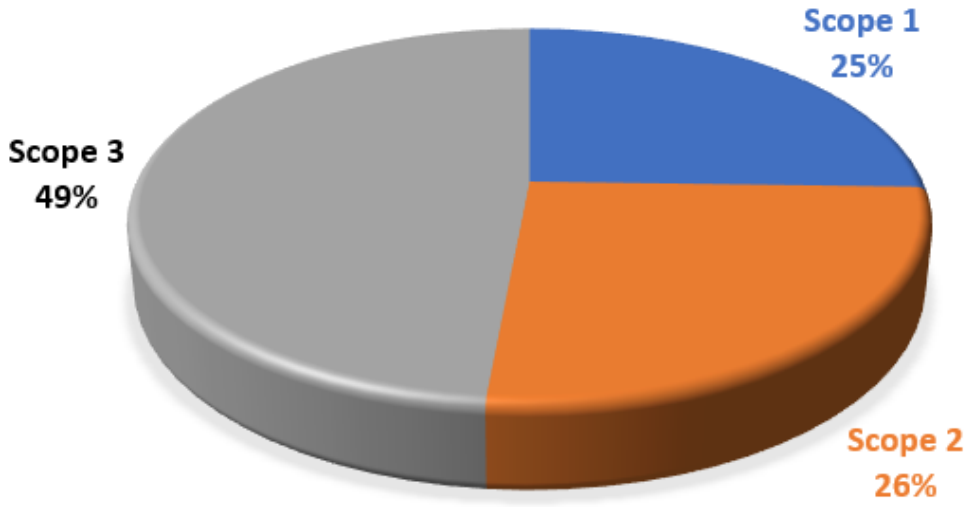
This report primarily focuses on Scope 1 and 2 emissions because of the difficulty in obtaining data and therefore quantifying Scope 3 emissions (emissions from suppliers). This is a universal problem, but we will seek to make progress wherever we can.

- Scope 1 = gas and oil
- Scope 2 = electricity

Graphic 4 shows that the biggest emitter for Babergh is Scope 3 emissions at 49%. This is largely due to third party gas supplies for the leisure centres being included in Scope 3.

Note that gas for leisure centres is included in Scope 1 for Mid Suffolk as the supply is directly with the council, compared with Scope 3 for Babergh where Abbeycroft are responsible for the supply.

Graphic 4: Pie chart showing the % emissions in Babergh by Scope

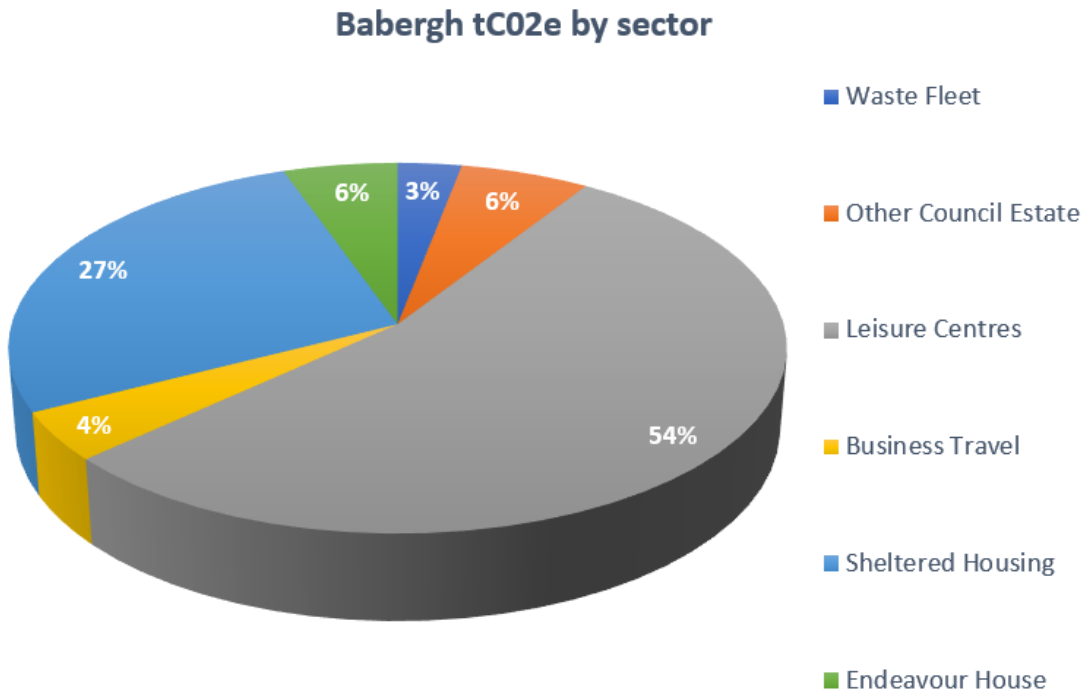


3.2 Emissions by sector

Graphic 5 shows that the leisure centres (Kingfisher and Hadleigh) emit the most potential greenhouse gas emissions, accounting for 54% of all emissions.

The second largest source of emissions (27%) is from sheltered housing units.

6% of emissions are from ‘other council estate’ properties and services delivered by the council, which are essentially all other council buildings that are not sheltered housing such as public toilets, social housing and landlords lighting.



Graphic 5: Pie chart showing the % C02e produced by each sector in Mid-Suffolk in 2023/24

3.2.1 Sheltered Housing

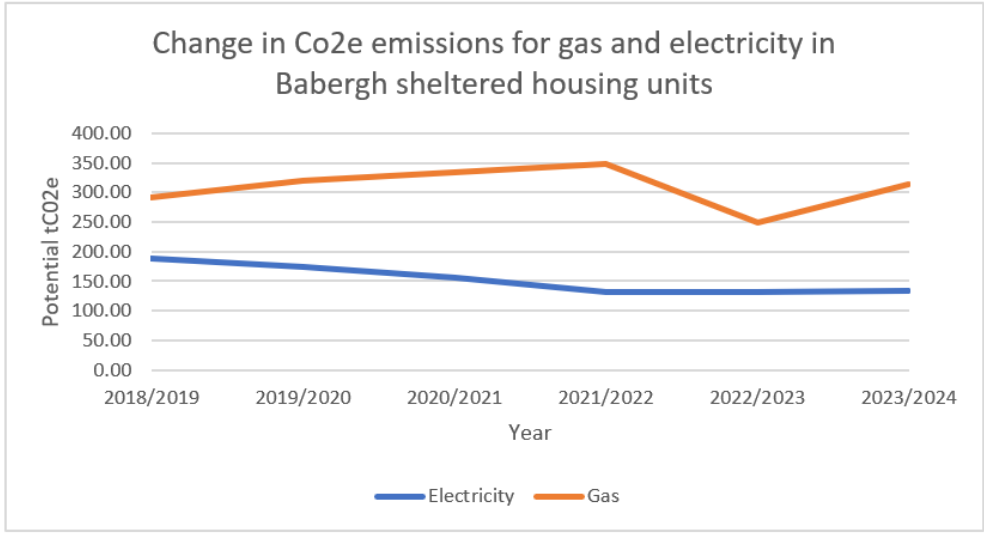
In the 2023/24 reporting year, sheltered housing emissions amounted to 448 tCO2e compared to 381 tCO2e in 2022/23 an overall increase of 17%. Over the past year, there has been an increase of 26% in gas usage. Electricity usage has increased by 1.4%.

The specific care needs of elderly residents along with degree factors have not been accounted for in this report but have undoubtedly contributed to the increase in emissions. Given the essential nature of heating and similar utilities for resident care, reducing emissions in sheltered housing can only realistically be achieved through further investment in the buildings themselves.

.

This year, we have also begun to introduce water consumption to our GHG calculations where data is available. There is still some way to go in this area though and as this is a work in progress, we have therefore not shown it in Graphic 6.

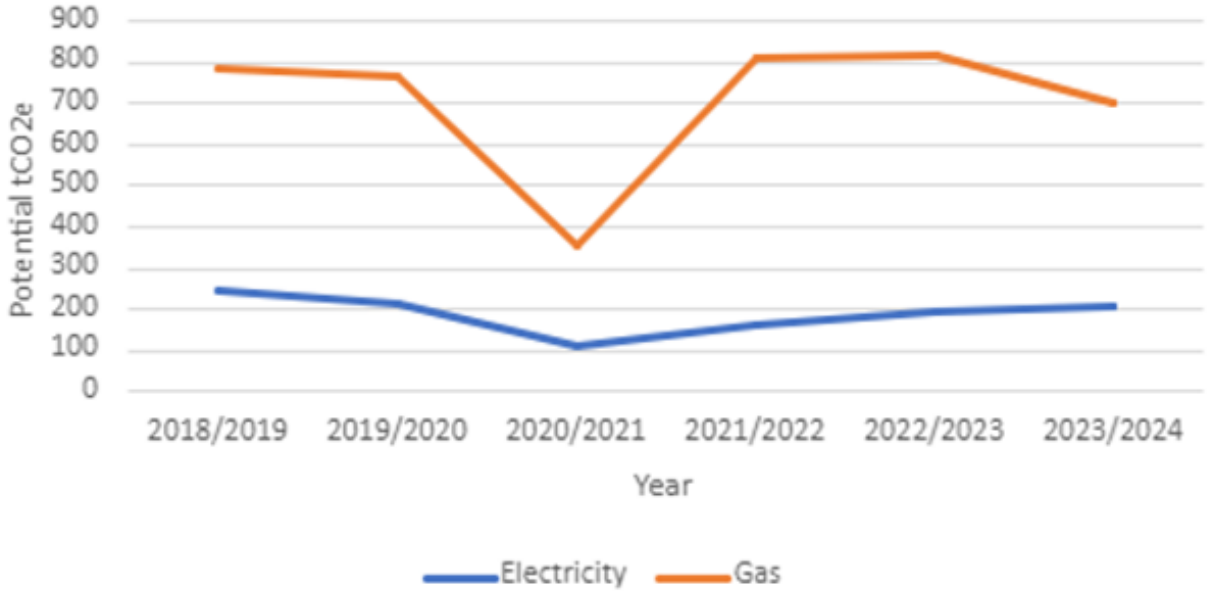
Graphic 6: Change in Co2e emissions for gas and electricity in Babergh sheltered housing units



3.2.2 Leisure Centres

In 2023/24, total leisure centre emissions reduced by 112.8 tC02e to 905 tC02e, an 11% decrease. This is due to the benefits of solar car ports and battery storage installed at Kingfisher leisure centre via funding obtained by the central government Getting Building Fund.

Graphic 7: Change in Co2e emissions for gas and electricity energy used at leisure centres in Babergh



3.2.2 Leisure Centres (continued)

Kingfisher Leisure Centre already has combined heat and power, a water filtration system and building management system installed. Ongoing issues with water meters at both leisure centres have been resolved.

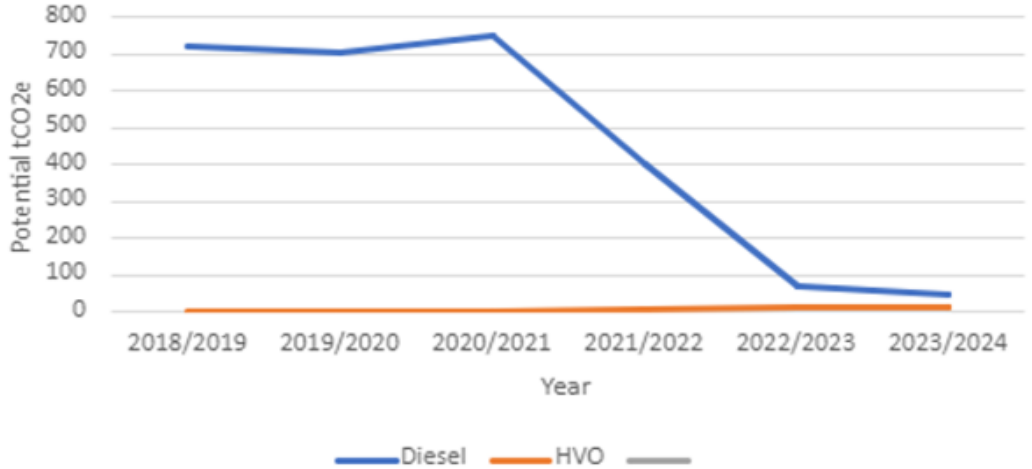
Over the next year, the aim is to get the leisure centres to integrate and actively use half-hourly data (day+1), solar energy data and battery storage to further improve the timing of their processes and building management. It is anticipated that these changes and improved use of the batteries installed at Kingfisher will result in further reductions in next years' GHG report.

Hadleigh Pool has been successful in securing £103 500 Sport England Funding for energy efficiency measures that will include smart metering and pool covers, and these should be completed by March 2025. Any emissions reductions from these will not be seen until the financial year 2025/26 reporting (in two years' time).

3.2.3 Waste and fleet services

Emissions from the waste refuse collection fleet service continues to reduce, dropping by 21.4 tC02e (27%) to 58.9 tC02e this year, and a total reduction of 659.7 tC02e since 2018 when the council's greenhouse gas reporting commenced.

Graphic 8: Change in Co2e emissions for diesel and HVO used in the waste fleet



Our public realm service also uses HVO, unfortunately, we are unable to split this between councils at present. For 2023/24, emissions for both councils combined were 3.9 tC02e, an increase from 2022/23 of 0.8 tC02e (26%).

3.2.4 Endeavour House

The emissions produced in Endeavour House have been calculated by Suffolk County Council. Babergh and Mid Suffolk District Councils utilise 14% of the buildings area so we have divided their calculations to work out 14% of the overall total and then divided by two to reflect Babergh's share of the space.

Shared spaces, such as communal areas, the canteen and toilets are mostly included in this calculation, although it is difficult to be precise with these areas. Endeavour House accounts for 4% of Co2e emissions for Babergh.

Energy consumption in Endeavour House is also impacted by visitors and the workforce of other organisations and it is impossible to quantify (without energy sub-metering) how behavioral changes by our staff and visitors would impact energy usage, especially electricity, to potentially reduce emissions.

3.2.5 Business Travel

Business travel contributes 4% of the councils' overall emissions. The most recent ‘Travel to Work’ (RM Travel, 2024) survey revealed that only 7% of employees own an electric vehicle, with affordability being the main reason for the low percentage.

Discounts and solutions provided by the council for employees are advertised widely with the aim of increasing this number. There are also car sharing schemes and discounts on public transport.

The Travel to Work Survey is not currently split between Babergh and Mid Suffolk employees, and so this could be a point of improvement for the future to establish whether there are different trends between the districts.

3.3 Pathway to net zero

The graph below compares actual emissions (tCo2e) for Babergh and Mid Suffolk District Councils combined (blue line) against the trajectory required to achieve net zero by 2030 (green line). To recap, in 2019/2020, carbon emissions increased slightly to 5,945 tCO2e but then decreased to 4,777 tCO2e in 2020/2021 mainly because of the Covid lockdown.

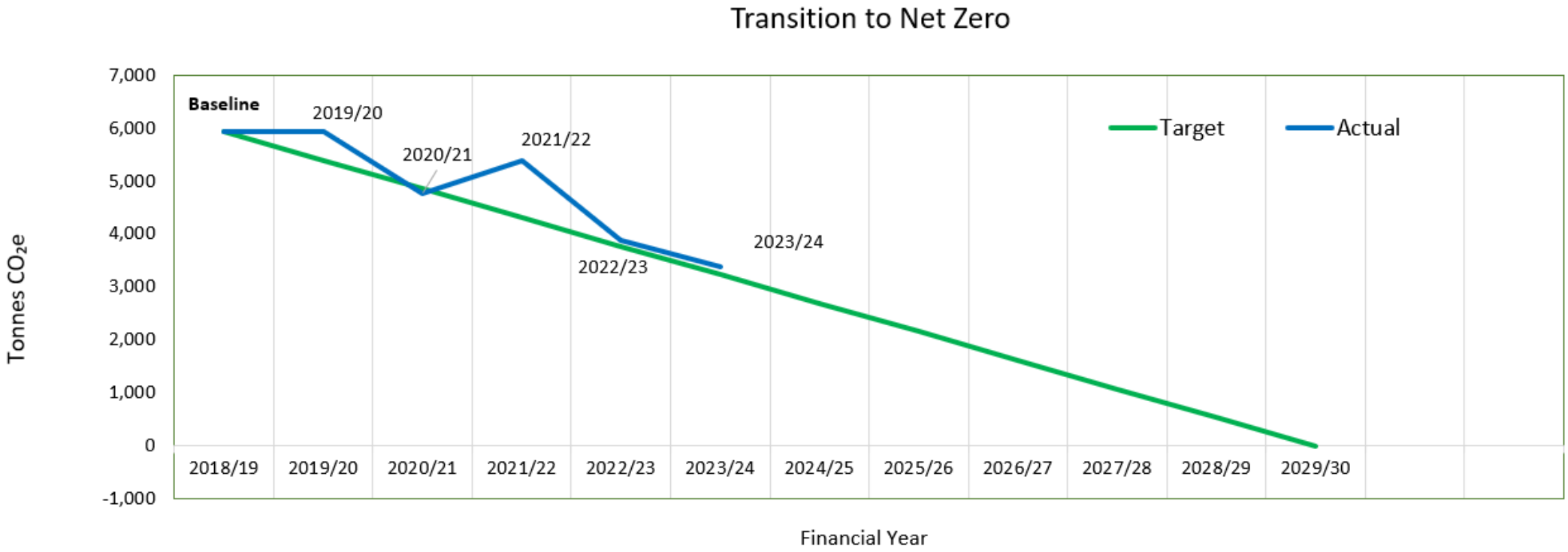
Performance to 2023/24 (year 5) is currently 4.7% (152 tCO2e) from where it needs to be. Last financial year, it was 107 tCO2e above target emissions. Going forward we must realise reductions on average of 539 tCO2e (9.1%) each year to follow the trajectory, although it will be increasingly difficult to achieve these reductions as we get closer to 2030 and net zero.

Decarbonising our council-owned assets requires a large capital investment. Even when government funding is available there is an element of match funding that is difficult to reconcile with the current financial pressures faced by the council.

Careful consideration of the costs versus the benefits and whether it is prudent to spend large sums of money on ageing assets is required.

3.3 Pathway to net zero

Graphic 9: shows where we need to get to and the progress we have made since 2018/19 for Babergh and Mid Suffolk



4. CO2 mitigation

In terms of Green House Gas emissions reporting, there are a number of activities undertaken that have helped mitigate the impacts of climate change.

4.1 Solar panel installations

In 2023/24 the solar panels installed within Babergh produced 2,861,810kWh of electricity, mitigating 592.5 potential tCo2e emissions. This is generated by installations shown in Table 3.

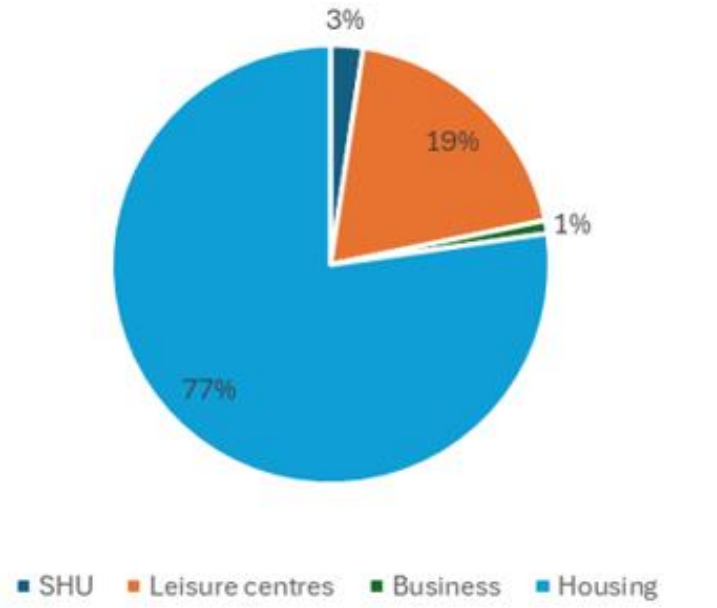
Table 3: Solar installations in Babergh and installed capacity

Babergh	Installed capacity (kWp)
Roof mounted solar on Hadleigh and Kingfisher leisure centres	336.30
Solar car ports and battery storage at Kingfisher leisure centre	110.40
PV on 1,020 social housing	2.438.49
PV on Sydney Brown House and Playford Court	93.00
PV on South Suffolk Business Centre	10.80
PV on Wenham depot (shared facility)	21.84
TOTAL	**3,010.83**

4.1 Solar panel installations (continued)

The pie chart below (graphic 10) shows that out of the total solar generation, social housing generates the most energy from solar (77%), with leisure centres generating 19%.

Graphic 10: Solar energy generation by sector for Babergh



In terms of the councils' Greenhouse Gas reporting, the energy generated by social housing does not contribute to the Councils Net Zero trajectory. However, it does contribute to a reduction in emissions within Babergh of 458 potential tCo2e and supports council tenants with the cost of electricity.

It is difficult to know how much of the electricity generated is used by the tenant and we will attempt to get improved data in this area. Guidance has been produced as part of the tenant handbook about how to get the most out of the solar panels.

4.1 Solar panel installations (continued)

Solar PV on our leisure centres and sheltered housing has contributed to the overall reduction in emissions. Leisure centres contributed 114.8 tCo2e reduction in emissions and sheltered housing units 14.2 tCo2e.

The use of electricity in situ also means there are no Transmission and Distribution (T+D) energy losses from the transportation of energy from the grid to the property. Battery storage at Kingfisher leisure centre will help to maximise the utilisation of electricity from solar going forward.

4.2 Electric Vehicle Chargepoints (EVCP)

In 2023/24, 23 new Electric Charging Points (EVCPs) were installed in Babergh.

As 18 of the EVCPs were installed at the end of March 2024, there are no carbon emissions from these within this GHG report. Should the uptake in usage of the EVCPs increase, this could lead to increased council emissions.

In 2023/24, Babergh EVCP's used 47,000 kwh of energy, equivalent to 9.73 tCo2e emissions.

5. Conclusion and next steps

This report highlights the critical urgency of achieving carbon neutrality for the council by 2030, a goal that poses a substantial challenge.

Over the past year, Babergh has made notable progress, with leisure centres reducing energy consumption significantly thanks to successful external funding aimed at cutting emissions in our built environment. However, these centres remain the largest source of emissions in the district.

The second largest source of emissions comes from sheltered housing. Reducing emissions in this area will be more resource-intensive and require immediate action.

Every service area must take responsibility for their assets and energy use, recognising their direct impact on the council's ability to reach net zero by 2030. As carbon emissions are closely tied to expenditure, cutting emissions benefits both the individual service areas and the council overall, making it a critical win-win for the future.

To ensure that the data is robust and as accurate as possible it is essential that all service areas work collaboratively, taking ownership of their carbon emissions. Reducing carbon emissions is everyone's responsibility and this has the added benefit of reducing long term costs.

This raises important questions about the long-term viability and affordability of both leisure centres and sheltered housing and whether they are fit for sustainable change.

As reflected in the councils Carbon Reduction Management Plan efforts also need to be intensified in areas like travel and transport. Work is already underway to engage employees and tenants in working towards net zero through increasing understanding of areas and encouraging behaviour change, although this will continue to be a work in progress.

Education, awareness and behaviour change in our supply chain (Scope 3 emissions) must also be tackled if we are to stand any chance of achieving net zero.

The aim going forward is to improve the data we currently have, and subsequently confidence in this data. For example, one area for consideration could be how improved participation in the 'Travel to Work' survey is achieved (participation currently only at 14%) and whether analysis could be undertaken separately for each district council.

If emissions are not drastically reduced, the council risks failing to meet its net zero target, with serious consequences for both local environmental goals and wider climate commitments. Urgent and sustained action is crucial.

Appendix 1

Guidelines used to define the GHG reporting methodology: -

- HM Government, Environmental Reporting Guidelines
- Streamlined energy and carbon reporting guidance, March 2019 (Updated Introduction and Chapters 1 and 2)
- WRI / WBSCD - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), March 2004.
- WRI / WBSCD - The Greenhouse Gas Protocol: Scope 2 Guidance, An GHG Protocol Corporate Standard amendment, 2015
- UK Government Conversion Factors for Company Reporting (2023) - DBEIS / DEFRA

References

1. RM Travel plans (2024): ‘Travel to Work survey’, Available at: Travel to Work survey.pptx (sharepoint.com)
2. DBEIS / DEFRA, (2023), ‘UK Government Conversion Factors for Company Reporting’, Available at: ghg-conversion-factors-2023-condensed-set-update.xlsx (live.com)
3. Pan, C. (2019), ‘How to Cope with Scope 3 Emissions?’, Available at: How to Cope with Scope 3 Emissions? – Chloe Pan's Sustainability World (ubc.ca)