Tom Horwood
Joint Chief Executive of Guildford
and Waverley Borough Councils

www.guildford.gov.uk

Contact: Andrea Carr
Committee Services
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3 February 2023

Dear Councillor

Your attendance is requested at a remote meeting of the **JOINT EXECUTIVE ADVISORY BOARD** to be held on **MONDAY 13 FEBRUARY 2023** at **7:00 pm**. The meeting will be held remotely via Microsoft Teams.

If for any reason Councillors lose their wi-fi connectivity to the meeting and are unable to re-join using the link in the Outlook calendar invitation, please re-join using the telephone number 020 3855 4748. You will be prompted to input a conference ID: 491 947 805#

Yours faithfully

Tom Horwood
Joint Chief Executive

MEMBERS OF THE EXECUTIVE ADVISORY BOARD

Councillor Paul Abbey
Councillor Jon Askew
Councillor Christopher Barrass
Councillor Dennis Booth
Councillor Ruth Brothwell
Councillor Colin Cross
Councillor Graham Eyre
Councillor Andrew Gomm
Councillor Angela Goodwin
Councillor Angela Gunning
Councillor Gillian Harwood
Councillor Diana Jones
Councillor Steven Lee
Councillor Ann McShee
Councillor Bob McShee
Councillor Masuk Miah
Councillor Ramsey Nagaty
Councillor Jo Randall
Councillor Tony Rooth
Councillor Will Salmon
Councillor Pauline Searle
Councillor Fiona White
Councillor Catherine Young

Authorised Substitute Members:

Councillor David Bilbé
Councillor Chris Blow
Councillor Guida Esteves
Councillor Liz Hogger
Councillor Nigel Manning
Councillor Ted Mayne
Councillor Marsha Moseley
Councillor Susan Parker
Councillor Maddy Redpath
Councillor Deborah Seabrook
Councillor Paul Spooner
Councillor James Walsh
Councillor Keith Witham

QUORUM: 5

Guildford Borough Council
Millmead House, Millmead, Guildford, Surrey GU2 4BB

WEBCASTING NOTICE

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THE COUNCIL'S STRATEGIC FRAMEWORK (2021- 2025)

Our Vision:

A green, thriving town and villages where people have the homes they need, access to quality employment, with strong and safe communities that come together to support those needing help.

Our Mission:

A trusted, efficient, innovative, and transparent Council that listens and responds quickly to the needs of our community.

Our Values:

- We will put the interests of our community first.
- We will listen to the views of residents and be open and accountable in our decision-making.
- We will deliver excellent customer service.
- We will spend money carefully and deliver good value for money services.
- We will put the environment at the heart of our actions and decisions to deliver on our commitment to the climate change emergency.
- We will support the most vulnerable members of our community as we believe that every person matters.
- We will support our local economy.
- We will work constructively with other councils, partners, businesses, and communities to achieve the best outcomes for all.
- We will ensure that our councillors and staff uphold the highest standards of conduct.

Our strategic priorities:

<u>Homes and Jobs</u>

- Revive Guildford town centre to unlock its full potential
- Provide and facilitate housing that people can afford
- Create employment opportunities through regeneration
- Support high quality development of strategic sites
- Support our business community and attract new inward investment
- Maximise opportunities for digital infrastructure improvements and smart places technology

<u>Environment</u>

- Provide leadership in our own operations by reducing carbon emissions, energy consumption and waste
- Engage with residents and businesses to encourage them to act in more environmentally sustainable ways through their waste, travel, and energy choices
- Work with partners to make travel more sustainable and reduce congestion
- Make every effort to protect and enhance our biodiversity and natural environment.

<u>Community</u>

- Tackling inequality in our communities
- Work with communities to support those in need
- Support the unemployed back into the workplace and facilitate opportunities for residents to enhance their skills
- Prevent homelessness and rough-sleeping in the borough

The information contained in the items on this agenda has been allowed into the public arena in a spirit of openness and transparency to gain broad input at an early stage. Some of the ideas and proposals placed before this Executive Advisory Board may be at the very earliest stage of consideration by the democratic decision-making processes of the Council and should not be considered, or commented on, as if they already represent either Council policy or its firm intentions on the issue under discussion.

The Executive Advisory Boards do not have any substantive decision-making powers and, as the name suggests, their purpose is to advise the Executive. The subject matter of the items on this agenda, therefore, is for discussion only at this stage and any recommendations are subject to further consideration or approval by the Executive, and are not necessarily in final form.

A G E N D A

ITEM NO.

1 **ELECTION OF CHAIRMAN FOR THE MEETING**

2 **APOLOGIES FOR ABSENCE AND NOTIFICATION OF SUBSTITUTE MEMBERS**

3 **LOCAL CODE OF CONDUCT AND NOTIFICATION OF DISCLOSABLE PECUNIARY INTERESTS**

In accordance with the local Code of Conduct, a councillor is required to disclose at the meeting any Disclosable Pecuniary Interest (DPI) that they may have in respect of any matter for consideration on this agenda. Any councillor with a DPI must not participate in any discussion or vote regarding that matter and they must withdraw from the meeting immediately before consideration of the matter.

If that DPI has not been registered, the councillor must notify the Monitoring Officer of the details of the DPI within 28 days of the date of the meeting.

Councillors are further invited to disclose any non-pecuniary interest which may be relevant to any matter on this agenda, in the interests of transparency, and to confirm that it will not affect their objectivity in relation to that matter

4 **MINUTES** (Pages 5 - 10)

To confirm the minutes of the meetings of the Joint Executive Advisory Board (JEAB) held on 24 and 30 January (to follow) 2023.

5 **GUILDFORD CLIMATE CHANGE ACTION PLAN** (Pages 11 - 128)

JOINT EXECUTIVE ADVISORY BOARD

24 January 2023

* Councillor Ruth Brothwell (Chairman)
* Councillor Angela Goodwin (Vice-Chairman)

* Councillor Paul Abbey
Councillor Jon Askew
* Councillor Christopher Barrass
Councillor Dennis Booth
* Councillor Colin Cross
Councillor Graham Eyre
* Councillor Andrew Gomm
* Councillor Angela Gunning
Councillor Gillian Harwood
* Councillor Diana Jones
Councillor Steven Lee
* Councillor Ann McShee
* Councillor Bob McShee
* Councillor Masuk Miah
* Councillor Ramsey Nagaty
Councillor Jo Randall
* Councillor Tony Rooth
* Councillor Will Salmon
* Councillor Pauline Searle
* Councillor Fiona White
* Councillor Catherine Young

* Present

Councillors Joss Bigmore, Julia McShane and John Redpath were also in attendance.

56 ELECTION OF CHAIRMAN FOR THE MEETING

The Joint Executive Advisory Board (JEAB)

RESOLVED

that Councillor Ruth Brothwell be elected as Chairman for this meeting.

57 APOLOGIES FOR ABSENCE AND NOTIFICATION OF SUBSTITUTE MEMBERS

Apologies for absence were received from Councillors Jon Askew, Steven Lee and Jo Randall. There were no notifications of substitutions.

58 LOCAL CODE OF CONDUCT AND NOTIFICATION OF DISCLOSABLE PECUNIARY INTERESTS

Councillor Paul Abbey declared an interest in item number 6 relating to the Housing Revenue Account Budget 2023-24 and did not take part in any discussion, comments or questions thereon.

59 MINUTES

The minutes of the meeting of the Joint Executive Advisory Board held on 10 May 2022 were confirmed as a correct record, and would be signed by the Chairman at the earliest opportunity.

60 CAPITAL AND INVESTMENT STRATEGY 2023-24 AND 2027-28

The Joint Executive Advisory Board (JEAB) considered a report concerning the Council's Capital and Investment Strategy 2023-24 to 2027-28.

The Lead Specialist Finance presented the report and explained that the Strategy gave an overview of how capital expenditure, capital financing and treasury management activity

contributed to the provision of local public services. The Strategy also detailed how associated risks were managed and the implications for future sustainability.

Decisions made now, and during the period of the Strategy, in respect of capital and treasury management would have financial consequences for the Council for many years into the future. The report, therefore, included details of the capital programme, any new bids / mandates submitted for approval, plus the requirements of the Prudential Code and the investment strategy regarding treasury management investments, service investments and commercial investments. The report also covered the requirements of the Treasury Management Code and the prevailing Department for Levelling Up, Housing and Communities Statutory Guidance.

It was highlighted that the Housing Revenue Account (HRA) capital programme anticipated a considerable spend of £20 million in 2023/24 in respect of major repairs and improvements to the existing housing stock, in addition to the budget allocation of £26 million for such works in the current financial year. The General Fund (GF) had seven new bids totalling £10.4 million identified in the Strategy over 5 years increasing the Council's underlying need to borrow to £296 million from 2022-23 to 2027-28. Other bids in respect of the Spectrum and the Council's Operational Depot would come forward as separate mandates in due course. No further investment in North Downs Housing would be made until the Company's operation had been reviewed and its business plan updated accordingly.

Subject to Council approving the budget on 8 February 2023, the Executive would be asked to agree that the amount of £500,000 earmarked for the North Street scheme be removed from the capital programme owing to significant changes in the scheme and that the new bids, as shown in Paragraph 4.12 of the report, be approved for inclusion in the capital programme as indicated.

The JEAB received supplementary information advising that, at its meeting held on 19 January 2023, the Corporate Governance and Standards Committee had also considered this report and endorsed the recommendations to the Executive and Council in respect of this matter.

The following points arose from the ensuing discussion, comments and questions for forwarding to the Executive:

1. The Strategy was intended to represent an appropriate balance between risk and cost effectiveness in relation to new capital bids and mandates. Although some alternative borrowing / investment strategies and risk management implications were highlighted in the report for comparative purposes, none were recommended for adoption as the present approach of a mixture of policies was felt to be the most appropriate. It was acknowledged that, owing to constraints within its reserves, the Council was now entering a period where it would increasingly rely on external borrowing to fund schemes which would lead to increased exposure to risk, such as interest rate rises.
2. With regard to the proposed North Street redevelopment scheme, the Council had received £500,000 on exchange of contracts for its land forming part of the site with a significant capital receipt expected at a later stage. However, as planning permission in respect the current proposal had been refused, the future of the scheme and associated financial implications were now uncertain and under review. It was hoped that a similar scheme for the site could be pursued.
3. It was clarified that HRA capital programme expenditure in respect of existing and new housing stock included works to improve the energy efficiency of homes. The Council was working towards meeting the Government's zero carbon targets which would require further investment in the future. There was some uncertainty as to the costs

associated with the necessary green technology and, with the assistance of consultants, the Council was seeking to identify the correct balance between early adoption of technology at a higher cost or delaying installation until costs had reduced and systems became more efficient and effective.

4. A range of options were available regarding the future of the Spectrum. A significant investment in the existing facility would be required for it to meet the Council's 2030 carbon neutral target. The capital programme included a sum of approximately £7 million which was the estimated amount required to prolong the life of the existing building until a new facility could be provided. The Council was committed to continuing to provide this sports and leisure service which supported the health and wellbeing and the fitness of its many users, from within and outside the Borough.
5. It was recognised that the projected amount of £145 million included in the capital programme to spend between 2022-23 and 2027-28 in respect of development projects to build or acquire new housing, including Weyside Urban Village (WUV), may require revision when delivery options were known. Further information concerning measures to mitigate the deficit in relation to the WUV project would be reported in due course.
6. The cost associated with the provision of Walnut Bridge was anticipated to be £5-6 million and discussions with the contractor were taking place to establish the final cost.
7. Capital programme project ED32 related to the construction of an internal estate road at Slyfield Industrial Estate to facilitate the WUV development whilst project OP6(P) Replacement Programme referred to refuse and recycling collection vehicles.

61 HOUSING REVENUE ACCOUNT (HRA) BUDGET 2023-24

A report outlining the Housing Revenue Account (HRA) budget for 2023-24 was before the Joint Executive Advisory Board (JEAB) for consideration.

The Lead Specialist Finance and the Head of Housing jointly introduced the report, which provided a position statement on the 2023-24 draft budget and made recommendations to the Council in respect of the HRA revenue budget. Details of the HRA capital programme were set out within the Capital and Investment Strategy, which had been considered as a separate agenda item at this meeting.

The JEAB was reminded that the Council owned the freehold and managed over 5,200 council homes which it rented to tenants who qualified for social housing. The HRA was a ring-fenced account within which the Council recorded the income and expenditure for its operations as landlord to its residents and for the day-to-day management, repairs and maintenance of the Council housing stock.

The report outlined the proposed HRA budget for 2023-24, which had been built upon the estimates and assumptions in the updated 2023 HRA Business Plan. The annual budget and Business Plan assumed that any surpluses in the HRA would be used to invest in redevelopment and upgrading of the existing stock, invest in new build affordable housing to be retained and rented by the Council within the HRA and then, if sufficient monies were available, the repayment of debt taken on under HRA self-financing. The Business Plan had been reviewed to reflect changes in relevant legislation and guidance, along with consideration of the Council's declaration of a Climate Emergency and the ongoing challenges of the wider operating environment. It showed that there were sufficient resources within the HRA to carry out the Council's investment plans in addition to repaying the debt over the 30 year plan period and leave a healthy reserve balance at the end of the 30 years for further investment not yet identified. There were further expected investment needs that were yet to be fully developed in order to meet carbon targets and expected

regulatory changes, and work on these continued. These factors were not fully reflected within the current Plan and would be considered in future reviews.

Although a new Direction issued by the Regulator of Social Housing on 12 December 2022 indicated that rents should be capped at 7%, the Council was proposing to adopt a 5% rent cap in respect of its housing stock in recognition of the challenging wider climate faced by residents. This reduced cap was achievable due to the ongoing prudential management of the overall HRA to provide households with some additional financial assistance at this time. Although the Government had not set a rent cap for those living in shared ownership properties, the Council was proposing to cap those rents in line with rented homes at 5%. A 3% increase in garage rents was proposed to correspond with the wider Council policy concerning fees and charges.

The following points arose from the related discussion, comments and questions for forwarding to the Executive:

1. Although the Government had set a social rent increase cap of 7%, the report was proposing an increase of 5% in the Borough to reflect balances in the HRA and the impact of the cost of living situation on tenants. There was no risk that levying a lower rent increase in 2023/24 would lead to more significant compensatory increases in the future as rent levels were currently governed by the Secretary of State and Regulator of Social Housing. It was understood that the Government would be consulting in respect of a new rent setting strategy in the future.
2. In line with Government guidance and the findings of the National Housing Federation, it was proposed that people living in shared ownership properties should receive the same level of rent increase as tenants of social housing as they were facing the same cost of living challenges.
3. All tenants would be advised of the proposed rent increase and offered support and advice if required. The aid would be provided by two new postholders who would identify where assistance was required and offer the appropriate support liaising with third parties such as job centres and social care where necessary. Technology enabled tenants' rent accounts to be closely monitored to identify those possibly in need of assistance. This method enabled the Council to achieve a low level of rent arrears.
4. With regard to garage rent levels, a 3% increase was proposed. The approach that had been adopted in recent years was that garage rental amounts should fall in line with fees and charges set in the wider Council budget. Although some garages fell within the HRA, others were included in the General Fund and it was felt that there should be consistency in rent increases across both areas. There was currently a national level debate as to whether any garages should be held within the HRA. A more significant increase in garage rents was likely to deter people from renting them leading to vacant garages. The associated licence agreement clearly stated that garages should be utilised for parking, which would relieve parking pressure in residential estates, and not for storage purposes.
5. A further factor relating to garages was that they were not sufficiently large to accommodate modern vehicles and occupied land which could otherwise be utilised for housing provision. Although some house building on garage plots had taken place and some more was expected to follow, it did present some challenges such as access issues.
6. The intention to allocate a further sum of £20 million towards housing stock repairs and improvements was welcomed. There was confidence that this amount was adequate to meet the Council's anticipated maintenance responsibilities, although possible

changes instigated by the Government could lead to the need to review the funding situation.

7. The Council continued to pursue a programme of replacing traditional boilers with air source heat pumps in a number of properties. However, financing was an issue as the installation of heat pumps cost in the region of £9,000 whereas the price of replacement conventional boilers was approximately £1,800. Future options, such as utilising traditional boilers to burn alternative green fuel which did not emit carbon dioxide, were possibilities.
8. The Right to Buy initiative had been reviewed by the Government on a number of occasions. A positive factor of the scheme was that when tenants opted to purchase their home, it provided the Council with funding to invest in providing alternative accommodation for people unable to purchase a home.
9. It was highlighted that unhealthy living conditions involving factors such as damp, mould and lack of ventilation were not limited to social housing. The Council's approach was to expedite related repairs without delay in line with regulators' guidance and recommendations and also offer tenants advice if their lifestyle appeared to be contributing to unhealthy living conditions.

62 GENERAL FUND BUDGET 2023-24 AND MEDIUM TERM FINANCIAL PLAN 2024-25 TO 2026-27

The Joint Executive Advisory Board (JEAB) was invited to consider a report in respect of the Council's General Fund Budget 2023-24 and Medium-Term Financial Plan 2024-25 to 2026-27. The report was introduced by the Lead Councillor for Finance and Planning Policy who sought councillors' views thereon.

The JEAB was advised that the report set out the draft General Fund Budget for 2023/24 and Medium-Term Financial Plan (MTFP) ending 2026/27. The MTFP set out a four year view and highlighted the key issues and work streams that the Council must focus on over this period to address the projected significant shortfall in the General Fund budget. The report also requested that the Council approve the budget and Council Tax for 2023/24.

The Board's attention was drawn to the first column in Appendix 1 to the report in particular, which indicated the changes in various elements from the 2022/23 base budget in terms of inflationary pressures and contractual changes. However, there were some off-setting factors and it was noted that the budget deficit of approximately £3 million would be met from reserves. The JEAB's views regarding the position were sought.

The following points arose from related discussion, comments and questions for forwarding to the Executive:

1. The JEAB was reassured that the Council's financial position was sound and it had not over extended its borrowing capability in order to fund capital projects. In terms of projects, the Weyside Urban Village scheme represented the greatest risk. A governance audit of the scheme had been undertaken and resulted in some recommendations to strengthen the governance arrangements. There was an intention to keep councillors informed of the financial projections relating to the scheme.
2. During the last year, the Council's asset base had been revalued and found to have increased in value by £60 million. During the same timeframe, debt in the region of £40 million had been repaid, increasing the value of the authority's asset position by £100 million to reach a total of £750 million. This was a strong asset base compared to many other local authorities.

3. The majority of assets held by the Council were revenue generating and if sold would reduce income to the revenue account, therefore there was no intention to sell such properties. There was a need to identify the correct balance to be achieved between selling assets to release cash and incurring the cost of borrowing funds.
4. There were opportunities to consolidate services and operational buildings to free properties for sale and the Assets Team was undertaking a review to identify under utilised or surplus property or land which could be sold to generate income.
5. There was no guarantee that the New Homes Bonus would be paid to the Council by the Government in future years and the Medium-Term Financial Plan made an assumption that this funding would not be received. In the absence of the Bonus, it was felt that the Government should identify an alternative incentive to encourage the delivery of housing. The Revenue Settlement Grant could play a role in this area.

The Lead Councillors and officers were thanked for their input during the course of the meeting.

The meeting finished at 8:39 pm

Signed …… Date ……
Chairman

Executive Report

Ward(s) affected: All

Report of Director of Transformation and Governance

Author: Nathaniel Prodger Climate Change Officer

Tel: 07970032651

Email: nat.prodger@guildford.gov.uk

Lead Councillor responsible: George Potter

Tel:

Email: george.potter@guildford.gov.uk

Date: 23/02/23

Climate Change Action Plan

Executive Summary

On 23 July 2019, at a meeting of Full Council, Guildford Borough Council:

1. Formally declared a Climate Emergency that requires urgent action.

2. Called on the UK government to provide the powers, resources and funding support to make local, as well as national, action against climate change possible.

3. Committed to working with partners across the Borough to evaluate and determine how and when Guildford Borough could become carbon neutral, with a target goal of 2030 for reaching net zero emissions.

4. Committed to working towards making the Council's activities net-zero carbon by 2030.

5. Committed to establishing the necessary governance structures, investment plans and officer resources in order for the Council to build a strong foundation to deliver progressively ambitious carbon reductions across our operations.

6. Committed to establishing a borough-wide Climate Change Partnership consisting of representatives from all stakeholders across all sectors.

7. Committed to developing, within 12 months, a clear action plan and timescale for being net-zero carbon across our Council operations, starting with a review of what has already been achieved and plans already instigated.

8. Committed to delivering a joint Member-Officer training programme to enable a shared understanding of how to deliver the above, starting in September 2019.

Building on the high-level plan that was previously agreed by this report recommends a detailed action plan for adoption.

Recommendation to Executive

That the Executive

1. Notes, as set out in paragraph 6.2, that the indicative forecast of the cost to achieving net zero across Guildford Borough Council for Scope 1 and 2 emissions (as calculated by consultants APSE Energy in July 2022) is £58.6 million and the total annual savings achieved by 2030 would be equivalent of £962,900 per year;

2. Asks officers to explore how these costs can be met in the short (0-2.5 Years), medium (2.5–5 Years) and long term (5–7 years) and to bring forward further proposals in this respect as part of GBC Annual Budget processes (for example through direct funding, match funding, invest-to-save proposals or borrowing);

3. Endorses the Climate Change Action Plan attached as Annexe 1 as the Council's high level strategic plan for responding to the climate emergency;

4. Notes that the delivery of the actions within the plan will be contingent on identifying and securing the requisite funding and resources and on the development of further detailed plans and feasibility studies; and

5. Requests annual updates on the plan in terms of progress and any recommended changes to the structure or content of the plan brought forward by officers or the climate change board.

Reason(s) for Recommendation:
The action plan enables the Council to progress the climate change programme in accordance with Council strategic priorities and the declared climate emergency of 2019.

Is the report (or part of it) exempt from publication?
No

Purpose of Report

1.1 When it formally declared a climate emergency on 23 July 2019, Guildford Borough Council made a number of commitments as listed above. One of those was to develop a clear action plan for achieving net-zero carbon across Council operations. The purpose of the report is to propose a programme of actions to enable GBC to achieve net zero by 2030 in accordance to the Climate Emergency Declaration. The Action Plan includes the development of programmes to encourage and facilitate a reduction of borough-wide carbon emissions, aiming to achieve net-zero by 2050, in accordance with the Climate Change Act 2019. The Action Plan includes actions to develop programmes in response to current environmental changes caused by climate change and improve environmental resilience across the Borough of Guildford. The Executive are asked to approve the recommended actions as laid out in appendix 1.

Strategic Priorities

2.1 The action plan detailed in Appendix 1 supports many of GBC's strategic priorities including:

Homes and Jobs

• Provide and facilitate housing that people can afford – through implementing and accessing funding streams to enable homeowners and residents to reduce fuel costs by creating more sustainable, well insulated, and energy efficient homes.

• Create employment opportunities through regeneration – through actions that develop the emerging 'green' economy and encouraging climate change innovation within the commercial and industrial sector.

• Support high quality development of strategic sites – by providing clear guidance and access to funding to foster sustainable and energy efficient developments.

• Support our business community and attract new inward investment – enabling access to national funding to develop sustainable solutions to climate change challenges.

• Maximise opportunities for digital infrastructure improvements and smart places technology – by supporting the private sector to develop the digital infrastructure across Guildford and the wider area.

Environment

• Provide leadership in our own operations by reducing carbon emissions, energy consumption and waste

• Engage with residents and businesses to encourage them to act in more environmentally sustainable ways through their waste, travel, and energy choices

• Work with partners to make travel more sustainable and reduce congestion

• Make every effort to protect and enhance our biodiversity and natural environment.

Community

• Tackling inequality in our communities – through actions that help residents improve the efficiency of their properties and focusing on reducing fuel poverty.

• Work with communities to support those in need – by developing a holistic approach to increasing resilience within the community through schemes that focus on reducing food poverty, fuel poverty and encouraging inclusion within communities through support of existing organisations.

• Support the unemployed back into the workplace and facilitate opportunities for residents to enhance their skills – supporting the development of 'green' skills and encouraging the development of the green economy.

Background

3.1 In 2019, Guildford Borough Council declared a climate emergency. In response to this declaration, GBC committed to reducing carbon emission across its activities with an aim to achieve net zero by 2030. Surrey County Council (SCC) and many neighbouring districts and boroughs have also committed to reduce carbon emissions from their organisations with the aim of achieving net zero by 2050.

3.2 The Department for Business, Energy, and Industrial Strategy (BEIS) publishes an annual report of greenhouse gas (GHG) emissions. The data is a subset of the UK GHG Inventory. Data from 2019 show that the total emissions for the Guildford area were in excess of 766.8 $ktCO_2e$. Transportation contributes to 51% of GHG emissions across the borough. It is important to note that Transport is outside of direct control of Guildford Borough Council. Domestic emissions contribute to a further 27%. Industry and Commercial combined make up a further 13%. Public Sector emissions contribute to 5% of the boroughs emissions, with GBC directly responsible for approximately one percent of borough wide emissions. (For further details of borough emissions please see Appendix 1).

3.3 GBC had developed a high-level Action Plan which was adopted in 2021.

3.4 An Action Plan is required to identify and prioritise those areas where programmes can be introduced to reduce carbon emissions and to allow for forward planning for the allocation of resources and funding.

3.5 The Greener Futures Programme is a county wide strategy developed by Surrey County Council. The programme sets out a wide range of priorities tailored to reducing carbon emissions across the county. Guildford Borough Council have identified the need for a targeted climate change action plan to address specific challenges within the Guildford area.

Consultations

4.1 The Climate Change Board (CCB) have been consulted on the actions and principles contained in Appendix 1. The CCB is made up of Councillors, Officers, and leading members of the community with a view to informing the direction that the Council will take in regard to climate change. Comments from the CCB have been collated and integrated into Appendix 1.

Climate Change Officers have discussed the principles of the Action Plan with the Portfolio Holder for climate change to determine the principles and scope of the actions contained within Appendix 1.

A review of the Surrey Greener Futures Delivery Plan and its impact on existing GBC service plans was discussed with Council Officers and presented to the Corporate Management Board.

Key Risks

5.1 The key risks are high costs and uncertainty over government policy. The Council's existing risk management and programme delivery processes will be used to track and manage associated risks with the delivery of the action plan.

6. Financial Implications

6.1 Achieving net zero by 2030 is a corporate policy as is ensuring Guildford is financially sound with infrastructure and services fit for the future. Some of the actions contained within the Climate Change Action Plan will require significant financial investment. However, in many cases there will be an associated return of investment from energy savings. Each action will need to be assess on its own merit and a programme developed to achieve the aim of the action. This is to include the financial implications and identification of funding streams.

6.2 Cost Projection

Based on a trajectory analysis carried out by APSE Energy in July 2022, the indicative forecast of the cost to achieving net zero across Guildford Borough Council for Scope 1 and 2 emissions is £58.6 million and the total annual savings achieved by 2030 would be equivalent of £962,900 per year. While this cost is significant, it is noted the information used to estimate the capital cost is not complete and that a separate exercise should take place to review all existing council owned vehicles and assets to provide a clear plan of what interventions can be provided, their capital costs, funding opportunities and the cost/carbon savings.

7. Legal Implications

7.1 No legal implications apply to the climate change action plan however each action will need to be assessed on its own merits.

8. Human Resource Implications

8.1 No HR implications apply to the climate change action plan however each action will need to be assessed on its own merits.

9. Equality and Diversity Implications

9.1 The Action Plan sets out a pathway to achieve net zero carbon emissions however it does not stipulate the individual processes for each programme to achieve these actions, where required, individual projects, initiatives and policies will be assessed for their equality impact on a case-by-case basis

10. Climate Change/Sustainability Implications

10.1 The Climate Change Action Plan sets out a number of actions that GBC should progress in order to tackle the challenges set by climate change. Agreement of the report itself does not have any implications with regards to climate change, the actions therein will affect the following:

- carbon emissions
- energy use
- waste / recycling
- air quality
- water supply/conservation
- flood / climate resilience
- procurement (economic, social and environmental, community well-being)
- biodiversity
- public health of communities
- collaboration with statutory partners, agencies and/or businesses to tacking climate change

Careful consideration will be needed to assess the impact of each action and identify any conflicts between the above categories.

Executive Advisory Board comments

11.1 "Click to insert details here"

You should insert any comments or recommendations from the EAB(s) here. These comments should be incorporated into your discussion, conclusion and final recommendations. Delete this section if the matter has not been considered by an EAB and re-number subsequent paragraphs.

12. Summary of Options

12.1

Option 1. Do nothing – GBC does not adopt a climate change action plan.
Option 2. Do Most – GBC adopts an action plan which focuses on reducing carbon emissions directly controlled by GBC and seeks to address opportunities for addressing climate change on a wider scale, including incorporating the principles set out in Surreys Greener Futures Delivery Plan.

13. Conclusion

13.1 The Climate Change Action Plan sets out a pathway to achieve the aims of the Climate Emergency which was declared by Guildford Borough Council on 23rd July 2019. The Action Plan seeks to facilitate forward planning for the allocation of resources and funding by identifying and prioritising those areas where programmes can be introduced to reduce carbon emissions.

The Action Plan supports several GBC's strategic priorities, including:

- Homes and Jobs
- Environment and,
- Community

2019 data published by BEIS show that the total emissions for the Guildford area were more than 766.8 $ktCO_2e$. Guildford Borough Council is directly responsible for 1% of carbon emissions within Guildford Borough.

There are significant financial implications associated with achieving net zero by 2030, however, the forecast provided by APSE uses incomplete information to produce an estimate of the costs. A review of all existing council owned vehicles and assets is to be undertaken to provide a clear plan of what interventions can be provided, their capital costs, funding opportunities and the true cost/carbon savings.

14. Background Papers

Guildford Borough Council Net Zero Carbon Emissions Trajectory Rev. C, APSE, July 2022

15. Appendices

Guildford Borough Council Climate Change Action Plan V.1.7

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Committee Services	

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GUILDFORD BOROUGH COUNCIL

Climate Change Action Plan

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Contents

Foreword

By Cllr George Potter

1.0: Introduction to Climate Change

1.1: What is Climate Change?

The term *Climate Change* refers to the shift in global weather patterns caused by a rise in global atmospheric temperature. Naturally occurring greenhouse gases including carbon dioxide and methane, support life on Earth by trapping solar heat within our atmosphere and creating stable, regional, weather conditions. When measured over time these predictable weather patterns determine a regions climate.

Over the last 150 years, human activity has significantly increased the level of greenhouse gases in our atmosphere, leading to a rise in global temperatures and subsequently causing dramatic changes

in regional weather patterns. These changes have serious environmental, social, and economic consequences.

1.1.1: Additional information: Greenhouse gases (GHG)

Greenhouse gas is any gas that is found in the atmosphere which absorbs and reemits infrared energy (heat). This heat contributes to the greenhouse effect which keeps Earth's atmosphere warmer than it would be without GHGs.

1.1.2: Additional information: The importance of carbon

The element Carbon is found everywhere on Earth. It is in the rocks and the soil, in Earth's atmosphere and within the oceans, it can be stored for long periods of time within these "reservoirs". Living organisms create another carbon reservoir as carbon is an essential element for all life. It makes up the framework for organic cells and provides the energy needed to develop and grow. Carbon is not a static element staying in one of the above 'reservoirs' forever, its moves between these regions providing an important role in each of them, this is known as the carbon cycle.

A simplified description of how carbon moves between reservoirs is described below.

Geological processes, such as volcanoes and weathering of rocks, transports carbon from the geological to the atmospheric reservoir, as carbon dioxide gas. Carbon traps heat from the Sun and warms the atmosphere to a temperature which allows for liquid water on Earth's surface.

Plants absorb carbon dioxide from the atmosphere and use it to grow. Once the plant dies, the carbon in its cells may become buried within the soils, or it is released back into the atmosphere as carbon dioxide as the plant decays. Alternatively, organisms eat the plant and use the carbon within their own bodies. The carbon may be released back to the atmosphere through respiration or is buried within soils once the organism dies.

Carbon enters the oceans through water running off the land or by absorption from the atmosphere, where it can be used by marine organisms. Once the organisms die the carbon becomes trapped at the bottom of the ocean as sediment. Over time these sediments are compressed and form rock, where the organic carbon is stored until it is released through further geological processes.

Without human interference, the flow of carbon into, and out of, these reservoirs is roughly stable, creating a balance of carbon within each of these reservoirs.

Through geological processes, organic carbon can form carbon rich sediments such as oil and coal. These sediments are extracted from the ground and used as fuel for industrial and domestic purposes. The burning of these fuels releases carbon dioxide into the atmosphere at a greater rate than would naturally occur. This raises the amount of carbon dioxide in the atmosphere which increases the warming affect and drives climate change.

1.2: The Impact of Climate Change

On a global scale we are already experiencing the effects of climate change, retreating ice caps at the poles and from glaciers, loss of biodiversity due to changing weather patterns, deadly flooding and droughts from extreme weather events, and the acidification of our oceans from the absorption of excess carbon in our atmosphere, all have a devastating effect on global communities, infrastructure, and wildlife.

Nationally we see these effects as warmer annual temperatures, increased rainfall and flooding, and an increase in extreme weather events such as heat waves and storms. More frequent and severe

weather events are predicted for the future, resulting in significant environmental and economic impacts and risks to health and wellbeing:

- Hotter summers and more frequent heatwaves lead to increased risks to vulnerable members of our community and result in an additional strain on our health services.
- Droughts during the summer months increases the wildfire risk to Guildford's rare heathland, damaging important habitats and affecting local biodiversity.
- Increased rainfall results in more severe flooding events, damaging local infrastructure and placing local emergency services under pressure.
- Food production and water supplies are affected resulting in higher food prices and creating a financial impact on Guildford's residents.

By providing a holistic and comprehensive Climate Change Action Plan, Guildford Borough Council seeks to identify the gaps and opportunities to increase climate resilience within the borough and support residents, businesses, and the wider community in the mitigation of, and adaptation to, climate change.

1.2.1: Additional information: Climate adaptation, mitigation, and resilience; what is the difference and why are they important?

Carbon emissions can remain in the atmosphere for hundreds of years, which means that while efforts are being undertaken to reduce our current emissions, the excess carbon in the atmosphere will remain and cause further environmental challenges and atmospheric warming.

Climate adaptation means preparing for the impact of climate change, taking actions to prevent or minimise the damage from the climatic changes already in process, and benefitting from the opportunities that climate change may present. This forward planning reduces the vulnerability of Guildford and the individuals and organisations that make up our community.

Mitigation looks to reduce or prevent carbon emissions from our existing activities to ensure atmospheric warming is kept to a minimum.

Improving resilience enhances the ability of individuals, the community, and organisations to absorb the stresses of climate variability and climate change.

1.3: Why do we all need to act?

In 2015 world leaders recognised the global threat from climate change and signed the Paris Agreement[1] with the aim of keeping global atmospheric temperatures from increasing by 2°C through cutting carbon emissions.

In 2018, the Intergovernmental Panel on Climate Change (IPCC)[2] warned of catastrophic impacts for life on Earth should increases in global atmospheric temperatures exceed 1.5°C. A report published by the IPCC found that to achieve a 1.5°C limit in increasing global atmospheric temperatures:

"*Global net human-caused emissions of CO_2 would need to fall by about 45 percent from 2010 levels by 2030, reaching net zero around 2050*"

Due to the scale and urgency of the climate emergency, everybody, not just world leaders, have a responsibility in reducing global carbon emissions.

[1] The Paris Agreement | United Nations
[2] Global Warming of 1.5 ºC — (ipcc.ch)

1.3.1: Additional information: Carbon emissions:

For simplicity we refer to all greenhouse gas emissions within this document as 'carbon emissions'. However, it is important to note that it is not just carbon dioxide (CO_2) that is being referred to here. Other gases include methane (CH_4), nitrous oxides (N_2O), and any other greenhouse gases that are emitted through human activity, many of these gases have a greater warming effect on our atmosphere than CO_2, however carbon dioxide is the most commonly emitted GHG from human activity.

The term CO_2e refers to 'carbon dioxide equivalent', which allows for all greenhouse gases to be described as a standard unit. CO_2e represents the amount of carbon dioxide required to create the same level of atmospheric warming.

1.4: The Co-Benefits of Tackling Climate Change

Tackling carbon emissions through a robust and ambitious climate change action plan can bring many inter-linked local and national co-benefits. Encouraging a 'multi-solving' view of issues allows for several positive aims to be met.

For example, improving cycling routes with the primary objective of reducing local vehicle emissions would also benefit the health of the local population through increased physical activity and improved air quality. Expanding and developing our green spaces to accommodate these cycle routes provides additional benefits to local biodiversity which also provides a further benefit to the wellbeing of the local population. A healthier/happier population reduces the strain on local medical facilities and community care organisations.

Including a co-benefits approach in this action plan has many advantages,

- Several positive outcomes can be achieved at once creating a stronger business case for implementing climate change actions.
- By prioritising those actions that have multiple beneficiaries there is more co-operation and support for the action plan.
- Creates opportunities for seeking additional funding and resources from a wider range of stakeholders.

Co-benefits have been considered as part of this action plan and are listed under the following categories,

Enabling local, open, and participative government – Actions that support GBC's key values in developing open and transparent governance contribute to improving the reputation of GBC within the community. Promoting greater accountability within GBC through informed and connected citizenship ensures achievements are not overlooked and outcomes are scrutinised. Participative governance improves trust within the local authority, encourages public education and engagement and promotes innovation and resilience within our community.

Supporting a strong, resilient, local economy – Climate change presents an opportunity to develop a strong and resilient green economy. Developing green skills and jobs, supporting locally produced green energy, and improving links between local suppliers, will work towards creating an economy that can respond more easily to changes caused by the impacts of climate change.

Providing good quality housing – Fuel efficient, well insulated, and comfortable housing will help to manage fuel costs, tackle fuel poverty, and promote social equality in the borough. Warmer homes

during cold weather and cooler homes during heat waves, work towards protecting vulnerable people and may reduce excess deaths and further demand on health care and the NHS.

Ensuring effective strategic planning and development management - A robust policy on new developments will allow for innovation within the construction industry and mitigate the risk of having to retrofit developments in the future. Effective planning increases the resilience of the community to the effects of climate change by reducing the risk of flooding and diminishing localised heatwaves. Addressing the causes of climate change and planning our response to the effects of these changes provides an opportunity for partnership work amongst key stakeholders, sharing resources and promoting closer ties to the community.

Improvements to health, wellbeing, and biodiversity – Actions tackling carbon emissions have a qualifiable impact regarding health and wellbeing. Poor air quality contributes to an estimated 40,000 deaths per year in the UK. Improving air quality through a reduction in fossil fuel use may ease demand on the NHS and local healthcare services. Improving local biodiversity has additional benefits such as storing and locking in atmospheric carbon and providing resilience to environmental change and flooding.

2.0: Climate Policy Background

2.1: Global

The United Nations Framework Convention on Climate Change (UNFCCC) and the global scientific community have identified that carbon emissions from human activities cause climate change. These global changes have severe environmental, economic, and social consequences. Global action is required to stabilise greenhouse gas concentrations in our atmosphere to:

"… a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner." (UNFCCC Article 2).

To tackle climate change and its negative impacts, 192 countries plus the European Union signed the Paris Agreement at the 2015 UN Climate Change Conference (COP21) in Paris. The Paris agreement is committed to addressing greenhouse gas mitigation, climate change adaptation, and finance. Under the Agreement, each country must determine, plan, and regularly report on the actions that it undertakes to mitigate global warming. In the 2021 UN Climate Change Conference (COP 26) held in Glasgow, 200 countries agreed to policies that aim to prevent global temperatures exceeding a 1.5^{o}C rise.

2.2: National

In 2008, the UK government passed the Climate Change Act[3]. The Act committed the UK to lower net greenhouse gases by 80% or more of the 1990 emission baseline. The Act also established a Climate Change Committee to advise the Government on Carbon emission targets. In 2019 the Climate Change Act was amended to include a carbon neutrality target with a deadline of 2050. In December 2020, the Climate Change Committee (CCC) published its Sixth Carbon Budget[4] which advised that the UK would need to deliver a 78% reduction by 2035 if it is to meet its long-term net zero commitment.

[3] Climate Change Act 2008 (legislation.gov.uk)
[4] Sixth Carbon Budget - Climate Change Committee (theccc.org.uk)

2.3: Local

In 2019, Guildford Borough Council declared a climate emergency and committed to achieving net zero carbon emissions within the organisation by 2030. Surrey County Council (SCC) and many of the districts and boroughs within Surrey declared their commitment to reduce carbon emissions from their organisations aiming to achieve net zero by 2050.

While more ambitious in its targets, the Guildford Climate Change Action Plan is aligned with national policy including the 78% reduction in national emissions by 2035 which became law in June 2021.

2.3.1: Additional information: What is net zero carbon?

'Net zero carbon' also referred to as 'carbon neutrality' refers to the balance between the carbon emissions entering the atmosphere being equal to the amount of carbon being removed from the atmosphere. To achieve net zero an individual or organisation needs to reduce their carbon footprint to as close to zero as possible, then balance (offset) the remaining emissions through removing carbon from the atmosphere.

Net zero carbon is different from 'Zero Carbon', which requires an activity to produce no carbon emissions.

3.0: Guildford Borough Council - Climate Emergency Declaration

On 23 July 2019, the Council adopted a motion to declare a Climate Emergency and passed a motion committing to actions including:

- Achieving net-zero carbon across all Guildford Borough Council services by 2030
- Establishing borough-wide partnerships to evaluate and determine how and when Guildford Borough could become carbon neutral.
- Developing a clear action plan and timescale for being net-zero carbon across our Council operations.

The climate change declaration is supported by the Council's Corporate Plan 2021 – 2025 to establish:

"*A green, thriving town and villages where people have the homes they need, access to quality employment, with strong and safe communities that come together to support those needing help.*"

To meaningfully address these commitments, the Council set up the Climate Change and Innovation Board.

The Climate Change declaration was made by the Council in July 2019, since then there had been a development in understanding of the issues and terminology involved. As the Council moves forward it is important that its ambitions are clear. On the 30th November 2022, the original declaration was reviewed and clarified by the CCB.

The definition of Scopes 1, 2 and 3 emissions were addressed. Scope 1 was defined as the direct emissions created by the actions of the Council itself, such as gas and direct fuel usage such as from vehicles. Scope 2 is the indirect emissions from electricity generation for use within our buildings in the pursuit the activities the Council, and Scope 3 is defined as the indirect emissions arising from the Council's third-party relationships, through the procurement or supply of goods and services. There is not, as yet, a defined methodology for calculating or influencing Scope 3 emissions.

While Scope 3 is to be included in the Council's definition due to the credibility of the intent, it is necessary to understand that Scope 3 emissions might be outside of the ambition for 2030 as it may take additional time to work with partners and providers to achieve that outcome which would be in accordance with the targets as described under the Paris Agreement. GBC's procurement policy will be reviewed to understand current procurement practice, and whether the Council are bound to certain legal or procedural constraints. A review would also look at whether GBC are able to stipulate to businesses acting as providers to the Council that their emissions should be benchmarked with a plan for decarbonising to facilitate measuring and reducing Scope 3 emissions.

It was decided that Scope 1 and 2 emissions are to be set within the 2030 target, but Scope 3 emissions be subject to a separate ambition, once measurements to make accurate calculations are standardised. Adoption of an accurate measurement application would inform the declaration of net zero for Scope 3 and any offsetting implications.

It was also noted that the original declaration made no mention of the biodiversity emergency, air quality or resilience and adaptation to climate change when it had become clear these were important related challenges. The CCB asked that these challenges are incorporated into the GBC's Climate Change Action Plan.

The Climate Change Board suggested certain parts of the Council's portfolio might be reassessed and placed outside of the 2030 target if it appeared that could not be met by precisely the cut off year of 2030 but could be achieved more flexibly.

The primary focus of the Climate Emergency Declaration was to reduce the emissions the Council could control within the resources available, but also to act in a wider leadership role with stakeholders, partners and the community by setting an example and enabling change. The Action Plan is to be reviewed every two years to ensure it remains at the forefront of GBC's ambitions.

4.0: Emission baseline and projections

4.1: Organisational baseline

In 2008 Guildford Borough Council recorded its non-domestic carbon emissions inhouse and again in every year between 2013 to 2016. From 2016 to present, APSE Energy have calculated the carbon emissions over a financial year period (April – March). 2019 is used as the baseline year to measure the progress made since declaring a climate emergency, however data from 2008 has been included to address the long-term carbon emission trends of GBC and to account for the lowered emissions recorded during the Covid years .

Emissions are calculated as carbon dioxide equivalent (CO_2e), which combine the seven most potent greenhouse gases into one measurement. These gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride.

The Greenhouse Gas Protocol (an international carbon accounting tool) categorises emissions under Scope 1 (direct emissions from fuel combustion such as within gas boilers and fleet vehicles), Scope 2 (indirect emissions from electricity purchased), and Scope 3 (indirect emissions due to Council related activities that occur at sources the Council do not own or control and are not classed as Scope 2 emissions, for example, waste disposal).

Due to covid, emissions data for 2020 – 2021 is considered to have been measured during a 'non-standard' year, meaning that comparisons to earlier years would not reflect an accurate trend. For

this reason, this report uses 2019 as the comparable year and will be updated once new data has been published.

Since 2008 Guildford Borough Council have reduced their carbon emissions by around 45%, a reduction of approximately 11% per year. **Figure 1** shows that Scope 1 & 2 emissions are the leading source of carbon emissions within the Council.

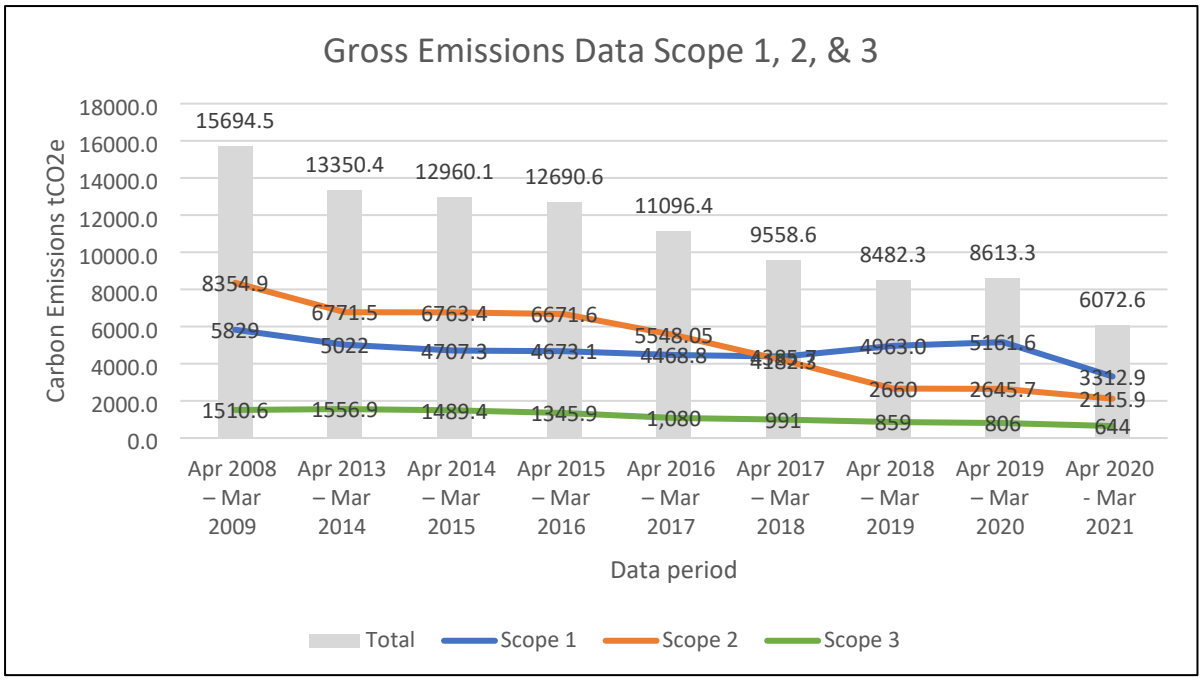

Figure 1: Gross emission data for Guildford Borough Council dating from 2008 covering a period of one financial year. Total gross emissions are broken down into Scope 1, 2, & 3 emissions. *(Guildford Borough Council 2019-2020 Scope 1, 2 and 3 Carbon Emissions, APSE, 2021).*

4.2: Social Housing Emissions

The Councils Housing Revenue Account holds just over 5220 homes for which it has responsibility to manage and maintain the quality of the homes, but while the Council has direct duty for the performance of the building fabric, it has little control over the behaviour of its tenants with regards to energy consumption and sustainability.

In October 2021, the UK Government published the Net Zero Strategy: Build Back Greener[5] which introduced policies and proposals for the decarbonisation of the UK by 2050. The strategy set out a pathway and potential funding streams for the retrofitting of existing social housing to achieve net-zero within this timescale.

Due to the scale and complexity of ensuring GBC's social housing stock achieves net-zero, and due to the timescales of available funding through various funding opportunities, GBC's Housing Revenue Account (HRA) Business Plan aligns with the UK Governments Net Zero Strategy: Build Back Greener and works towards achieving net-zero across our social housing stock by the 2050 target.

The UK Governments Net Zero Strategy: Build Back Greener, also reinforced the aims of an earlier publication (Clean Growth Strategy, 2017)[6] to ensure that rented properties obtained a minimal Energy Performance Certificate Rating of 'C' by 2035, or 2030 for fuel poor households. Ensuring that

[5] net-zero-strategy-beis.pdf (publishing.service.gov.uk)
[6] Clean Growth Strategy (publishing.service.gov.uk)

council housing stock meet the standards set by the national Energy Performance Certificate (EPC), is a high priority for GBC. This will not only contribute to a reduction in carbon emissions, but it will also work towards reducing fuel poverty within the borough. Further savings can be achieved through an engagement programme with residents to inform, educate and encourage more sustainable behaviours.

The National Housing Federation produced guidance on the emissions from social housing and the responsibility of LA's to achieve net-zero by 2050.[7]

4.3: Borough wide emissions

In 2022, GBC commissioned APSE Energy to calculate the total carbon emissions for Guildford Borough.

To provide a calculated estimation of the borough-wide emissions, APSE considered three main models:

- Emissions of carbon dioxide for Local Authority areas published by BEIS[8];
- SCATTER[9];
- The Tyndall Centre carbon budget[10].

While the methodology behind gathering the data of all three models is very similar, there are slight differences. The methodology is based on the Accounting and Reporting Standard[11] developed by the Greenhouse Gas Protocol, the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories[12] and the data sources from the same databases such as the Digest of UK Energy Statistics (DUKES) which contains data of actual energy usage for each sector.

This ensures that the data gathering process is robust, established, and enables a comparison with other local authorities.

4.3.1 BEIS Calculation

Since 2005, The Department for Business, Energy, and Industrial Strategy (BEIS) have published an annual report of GHG emissions by region, this is further broken down into Local Authority area. The data is a subset of the UK GHG Inventory, which underpins both the National Statistics publication and the UK's other international and national reporting requirements for greenhouse gases. Between 2005 - 2018, the data published by BEIS only accounted for carbon dioxide emissions. Since 2022 BEIS have included the three most potent greenhouse gases, carbon dioxide, methane, and nitrous oxides and have included these three gases in the 2018 – 2020 reports.

The data from BEIS can be used to track performance annually however, the related years' carbon emissions will not be published by BEIS until two years later due to the data lag (e.g. short term actions in 2020/21 will not be in the released reported emissions until 2022).

Data from 2019 show that the total emissions for the Guildford area were 766.8 $ktCO_2e$. **Figure 2** reveals that the greatest contributor to GHG emissions is from transportation (51%), 61% of these

[7] National Housing Federation - Decarbonisation: a guide for housing associations
[8] UK local authority and regional greenhouse gas emissions national statistics - GOV.UK (www.gov.uk)
[9] SCATTER (scattercities.com)
[10] Tyndall Carbon Budget Reports (manchester.ac.uk)
[11] The Global GHG Accounting and Reporting Standard for the Financial Industry | Greenhouse Gas Protocol (ghgprotocol.org)
[12] Global Protocol for Community-Scale Greenhouse Gas Emission Inventories | World Resources Institute (wri.org)

emissions stem from the use of A-Roads. It is important to note that issues relating to Transport are outside the direct control of Guildford Borough Council.

Domestic emissions contribute to a further 27% of total emissions across the borough. This is comprised of approximately 70% generated from the use of gas fuel.

Industry and Commercial combined make up a further 13% of the total.

The Public Sector contributes to 5% of the boroughs emissions, data supplied by APSE in the GBC annual emissions report suggests that GBC is responsible for a fifth of these emissions and contributes to approximately one percent of the total borough wide emissions.

Land use, land use change and forestry (LULUCF) accounted for an emission offset of 54.8 $ktCO_2e$ with most of the offset being provided by forest land.

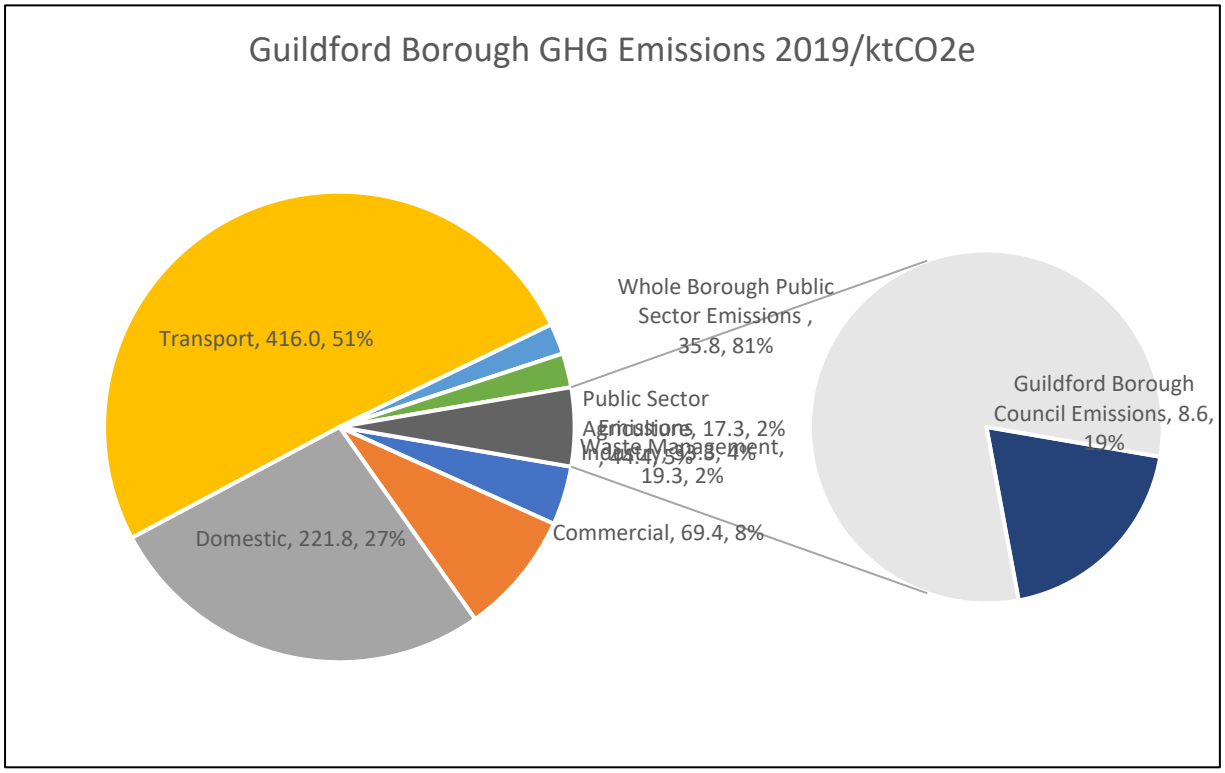

Figure 2: Percentage by source of greenhouse gas emissions across Guildford Borough in kilotonnes of CO2e (GHG measured: carbon dioxide, methane, & nitrous oxides), (*UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2020,* BEIS, July 2022) Guildford Borough Council emissions provided by APSE (Guildford Borough Council 2019-2020 Scope 1, 2 and 3 Carbon Emissions, APSE, 2021).

The population of Guildford Borough is continually growing. The "*Guildford Borough Local Plan: Strategy and sites 2015 – 2034*", shows that the population is predicted to grow from 145,473 in 2015 to 167,126 by 2034. The document also sets out the housing requirement for Guildford. During the plan period, provision has been made for at least 10,678 new homes with 562 dwellings being built per annum over the plan period (2015 – 2034). Inevitably, due to the increase in population, the direct carbon emissions for the borough are also expected to rise.

To demonstrate carbon emissions within the context of a growing population, an alternative measurement of the boroughs carbon footprint based on emissions per capita provides an overview of changes within carbon emissions. **Figure 3** describes the population growth within the Guildford

borough area and the emissions per capita per year. It shows that there has been a reduction in carbon emissions of approximately 53% per capita in the 14-year period to 2019.

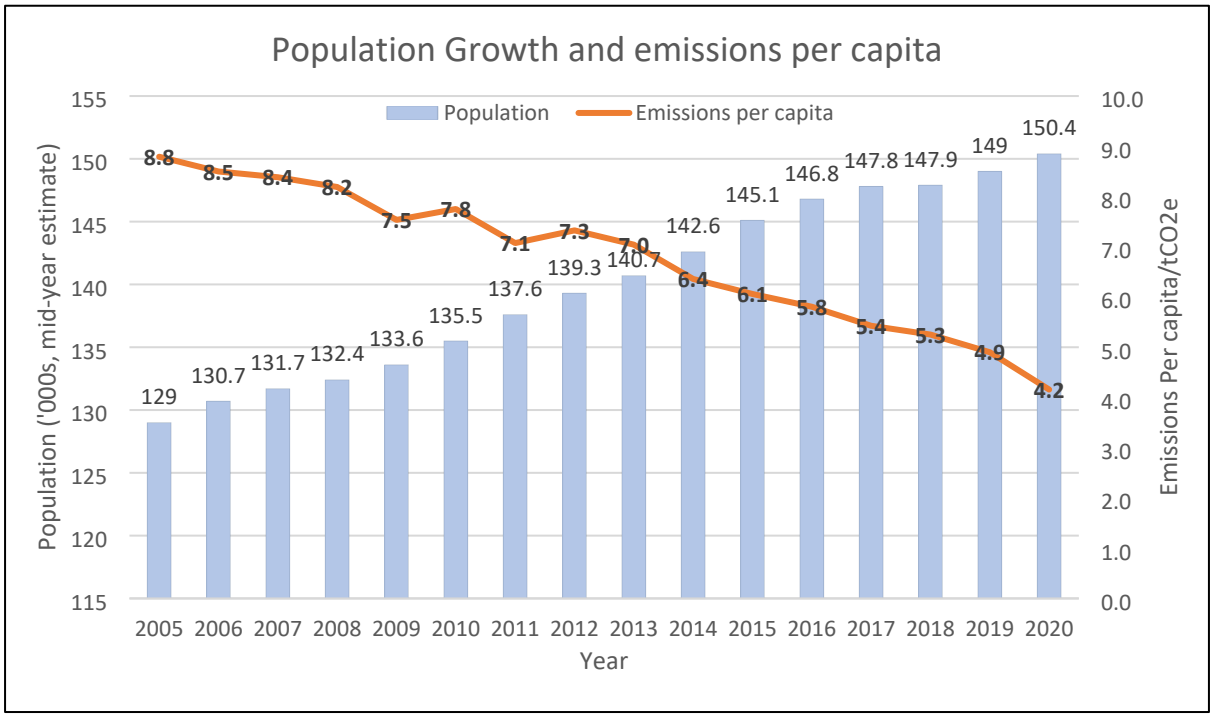

Figure 3: Guildford Borough population growth ('000's) compared with GHG emissions per capita (tCO2e). *(*UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2020, *BEIS, July 2022)* (Please note, the 2018 – 2020 per capita figures appear slightly lower (-0.2) than the published BEIS data as agriculture and waste totals have been omitted to ensure consistent comparisons with earlier years.

Analysis of the data provided by BEIS and carbon emissions estimations provided by APSE have shown that the contribution of carbon emissions to the borough by Guildford Borough Council are approximately 1.1%.

4.3.2: Additional information: What is a carbon footprint?

A carbon footprint is the amount of CO_2e released into the atmosphere by an individual, organisation or community through their activities. Per Capita Footprint refers to the amount per person in a given area. The per capita footprint for Guildford in 2019 was 4.9 tCO_2e (tonnes of CO2 equivalent)

4.3.3 SCATTERCITIES and The Tyndall Centre carbon budget calculation

SCATTER (Setting City Area Targets and Trajectories for Emissions Reduction) is a tool dedicated to calculating the GHG emissions of local authorities and follows the Global Protocol for City-wide Greenhouse Gas emissions.

SCATTER and BEIS use the same data sources, but the methodology for calculating emissions differ. SCATTER includes additional GHG emissions such as methane and nitrous oxide, it uses different starting data, and includes categories not covered by the BEIS dataset. Therefore, the total emissions calculated by SCATTER differ from those reported by BEIS. The 2019 estimated carbon emissions as calculated by SCATTER is 1052.9 $ktCO_2e$ this is an additional 286.1 $ktCO_2e$ of carbon emissions as compared to the BEIS calculation.

4.3.4 The Tyndall Centre carbon budget

The term 'carbon budget' is used to indicate the maximum amount of carbon a Council can produce in a particular period to stay within the goals of the Paris Agreement. A carbon budget should not be confused with a monetary budget to reduce carbon emissions.

The Tyndall Centre analyses the carbon emissions of local authorities and sets a carbon budget for each authority as an indicator on how emissions need to be reduced between 2020 to 2100. This allows the local authority to comply with the commitments of the Paris Agreement to keep global temperature increases well below 2°C.

The methodology and data sources are based on the same principles of SCATTER and the BEIS local authority emissions data; however, it differs from the above methods as it only accounts for CO2 and not CO2e and excludes LULUCF. The carbon budget is calculated on a global and national level and then allocated to each LA area proportionally based on their regional emissions.

Guildford has a maximum cumulative emissions budget of 5.2 million tonnes (MtCO2) for the period of 2020 to 2100. Should Guildford continue emitting carbon at the levels recorded in 2017, Guildford would use this entire budget by 2027`.

4.4: Trajectory

4.4.1: Borough wide targets

To deliver a carbon budget that is aligned with the Paris Agreement as recommended by the Tyndall Centre, Guildford will need to reduce its carbon emissions by a minimum average of -13.3% per year. By 2040, 95% of the recommended carbon budget will have been emitted and low-level CO2 emissions will continue at a diminishing level to 2100. It should be noted that since 2005, the average reduction in carbon emissions in Guildford has been 2.7%, which is largely attributed to grid decarbonisation.

The data from the BEIS calculator has shown that between 2005 – 2019, transportation emissions were reduced by approximately 17%. Domestic emissions have similarly fallen by 48%, largely thanks to grid decarbonisation. However, if the carbon reduction trend continues at its current pace, borough emissions will not achieve the National Government's target to reach net zero by 2050.

4.4.2: Additional information: Grid decarbonisation

The National Grid is the infrastructure used to transport electricity generated from power stations and plants across the UK to consumers. Decarbonisation of the grid is the actions taken to reduce the amount of CO_2e emissions associated with the production of electricity. This has been achieved through the increase in renewable energy generation such as wind farms and solar power, and the reduction in the use of fossil fuels such as coal and gas.

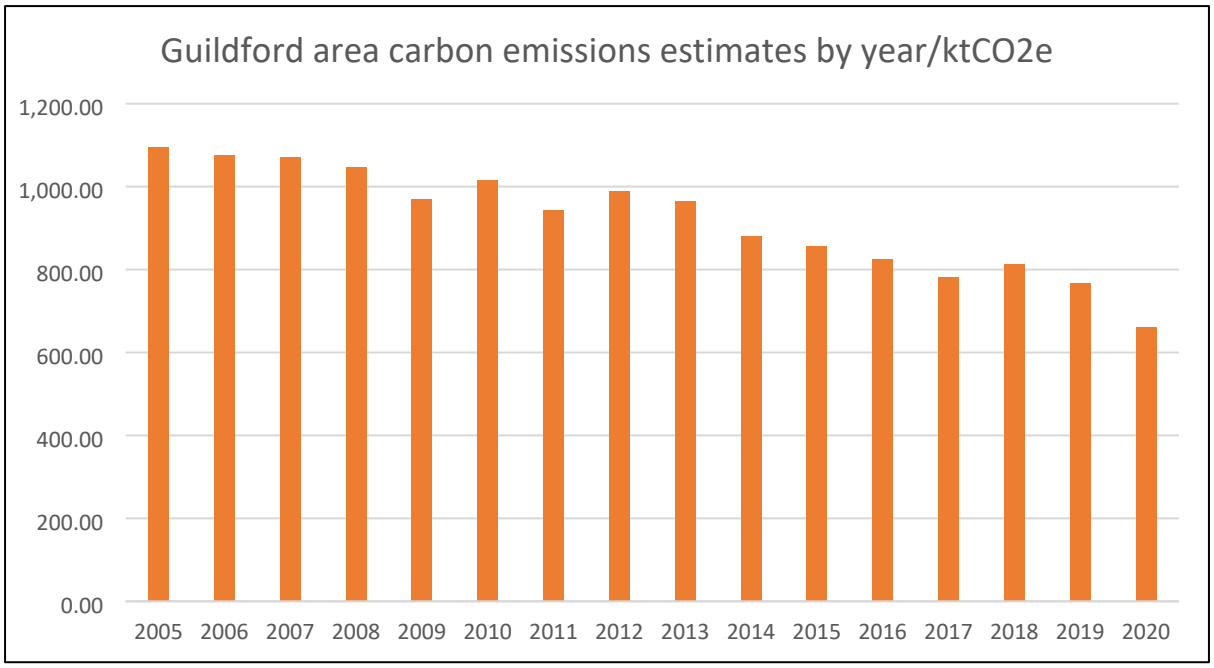

Figure 4: estimated total emissions from the Guildford area from 2005 to 2020. *(*UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2020, *BEIS*)

4.4.3: Organisational targets

Since 2008 Guildford Borough Council have reduced their carbon emissions by approximately 45%, a reduction of approximately 4% per year, grid decarbonisation has contributed to this reduction. At this current rate, GBC will not achieve net zero by 2030.

APSE have calculated that to achieve GBC's target of net zero by 2030, air source heat pumps (ASHP) are to be installed within the entire building estate, the council is to become more energy efficient, GBC is to invest in their own renewable energy generation and are to develop a tree planting scheme. All fleet owned by GBC is to be upgraded to electric vehicles. APSE have identified that 733 tCO_2e will be unavoidable and will need to be offset through the development of 5 MW of solar farm generation capacity and an additional tree planting scheme. (APSE Energy, *Guildford Borough Council – Net Zero Carbon Emissions Trajectory*, July 2022)

4.5: Carbon offsetting and sequestration

In the "*Climate Change, Sustainable Design, Construction and Energy SPD*"[13] (adopted by GBC September 2020), an energy hierarchy was developed which set out the steps to be followed to reduce carbon emissions. This Climate Change Action Plan uses the same key principles as detailed within the SPD; consumption/demand should first be eliminated wherever possible, and then reduced, before sustainable sources are used to meet any remaining need.

Energy Hierarchy:

Step 1: Eliminate energy need – Energy use is to be identified and measures to be taken to reduce the amount of energy used.

Step 2: Use energy efficiently – Where energy use is unavoidable, efficient practices should be used.

[13] Climate Change, Sustainable Design, Construction and Energy SPD - Guildford Borough Council

Step 3: Supply energy from renewables and low carbon sources – the energy that is required should be sourced from renewable and sustainable low carbon sources.

Step 4: Offset carbon emissions – Any unavoidable carbon emissions should be offset through measures that reduce carbon emissions to, or remove carbon from, the atmosphere.

Carbon offsetting is a compensation method of balancing carbon emissions. This can be achieved by developing or participating in schemes that remove, or prevent the generation of, the equivalent amount of carbon from those unavoidable GHG emissions.

Carbon sequestration is the act of securely storing the carbon once removed from the atmosphere.

It is estimated that by 2030 GBC will continue to produce approximately 733 tCO_2e emissions from hard to reduce sources and a scheme to offset these emissions will be required.

5.0: The Path to becoming carbon neutral council

5.1: Vision

This action plan reflects the values held by Guildford Borough Council as detailed within the Corporate Plan[14]:

- we will put the interests of our community first
- we will listen to the views of residents and be open and accountable in our decision-making
- we will deliver excellent customer service
- we will spend money carefully and deliver good value for money services
- we will put the environment at the heart of our actions and decisions to deliver on our commitment to the climate change emergency
- we will support the most vulnerable members of our community as we believe that every person matters
- we will support our local economy
- we will work constructively with other councils, partners, businesses, and communities to achieve the best outcomes for all
- we will ensure that our councillors and staff uphold the highest standards of conduct

5.2: The Council's Role

Guildford has a crucial role in tackling climate change. We have a role as a community leader, setting an example by adopting our own policies and publishing our achievements and plans to effect change, with a view to encourage and influence others. GBC recognises the magnitude of achieving the 2030 net zero target and acknowledges that it has limited powers, responsibilities, resources, and finances. The council is committed to reducing its own carbon footprint to net zero, to champion businesses who are actively working to reduce their carbon footprint, and to create both the infrastructure and provide the information to aid our residents to reduce their individual/household carbon footprint.

Many of the changes that will be required to achieve net zero will be in the control of those outside of the council's sphere of responsibility, including members of the public, private and third sector parties, and individuals. The council will work closely with stakeholders in implementing this action plan by:

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- **Delivering –** Ensuring that GBC takes those actions that are directly within our control to deliver a defined outcome.
- **Enabling and facilitating -** Actions where the role of GBC is to facilitate delivery of climate change programmes by empowering organisations and communities to deliver beneficial outcomes.
- **Supporting and encouraging** - Actions where the council can encourage or contribute to the delivery of a quantifiable outcome.
- **Lobbying** - Actions where the primary role of GBC is to push for change within our community.

These categories will be defined throughout each individual action within the action plan.

5.2.1: Additional Information: The Community Wellbeing Team

GBC recognise their role as a leader within the borough to support and develop community efforts to reduce carbon emissions and in tackling the challenges set by climate change. The climate change action plan seeks to involve all members of Guildfords community especially those that that may not be able to access our services through regular means.

Within the council's Community Services, the Community Wellbeing Team aim to improve the lives of residents in the borough's least advantaged areas by working with partners, businesses, and communities in delivering the changes local people wish to see. The Community Wellbeing Team aims to enable people feel empowered, care about themselves and their neighbours so that they can live well for longer, with independence and a sense of belonging within a resilient self-sustaining community. The team looks to engage and assist communities that might otherwise be missed and providing outreach and support to those who are more vulnerable.

5.3: Key Priorities and Targets

To identify the key priority areas for this action plan, GBC have considered the recommendations as set out within the APSE Trajectory report (July 2022) and previous emission reports also provided by APSE. We have reviewed Surrey County Council's Climate Change Strategy and subsequent Greener Futures Delivery Plan. GBC have also reviewed the information provided by BEIS for an overview of the total carbon emissions from the Borough. Guildford Councillors have set the strategic direction and Officers have had an input on service specific capabilities. The nine key areas of focus are set out below.

5.3.1: Focus on Climate Emergency Funding

Achieving carbon neutrality by 2030 will be a huge challenge for Guildford Borough Council due to the scale of financial investment required. While some measures will provide a direct financial investment, many may not. Where projects do not meet the requirements to be included within the Council's budget setting process, grant funding opportunities will be explored.

5.3.2: Focus on Organisational Governance Emissions Reduction

As a community leader the Council will set an example and set high standards in reducing carbon emissions to net zero by 2030. Not only exclusively on its own estate but also across its policies, service delivery and investment decisions.

5.3.3: Focus on Transport, Active Travel, and Air Quality

Active travel offers the opportunity to minimise carbon emissions however it also presents several co-benefits such as reduced congestion, improved local air quality and promotes health and

wellbeing within Guildford's communities. However, as Guildford is not the responsible transport authority within our Borough, GBC is restricted as to how much we are able to deliver.

5.3.4: Focus on Renewable Energy Generation

Renewable energy generation is an essential element of achieving net zero. To reduce carbon emissions, decreasing the reliance on fossil fuels is vital. Renewable energy generation through domestic installations and community energy schemes will provide the opportunity to create a clean, sustainable, and resilient local energy supply. Identifying opportunities for large-scale schemes within the borough or wider community will be key.

5.3.5: Focus on the Built Environment

Guildford has a growing population of approximately 150,400 (BEIS, 2020), and is predicted to grow to 167,126 by 2034. (Local Plan, 2015 – 2034) The housing requirement for Guildford is for at least 10,678 new homes with 562 dwellings being built per annum over the local plan period (2015 – 2034).

We are the second largest borough in the county in terms of area, covering approximately 270 square kilometres (*Local Plan*, 2015 – 2034)

Our borough has a particularly rich and varied architectural heritage with 1,200 listed buildings and 38 conservation areas. It contains 151 designated Areas of High Archaeological Potential, 37 County Sites of Archaeological Importance, 35 scheduled monuments and 10 registered parks/gardens. The borough is also home to a series of great historic country houses set within designed landscape and parklands. (*Local Plan*, 2015 – 2034)

Pressure on existing infrastructure and additional stress caused by planned growth must be addressed if we are to maintain and enhance the borough's prosperity and quality of life. Many people are attracted to Guildford by the quality of life and environment. This places a high demand on school places and access to amenities such as open spaces. The local and strategic road networks, rail network and local facilities in village settlements are also facing increasing pressure. (*Local Plan*, 2015 – 2034)

5.3.6: Focus on Waste and Resources

Guildford is one of 11 Districts and Boroughs who are part of the Surrey Environmental Partnership (SEP) with Surrey County Council. Guildford is a waste collection authority and Surrey are responsible for the waste disposal. Targets for recycling and waste to landfill are set by the SEP and the Surrey Waste Local Plan (2019-2033) sets out how and where different types of waste will be managed in the future.

This action plan promotes the key principles of the waste hierarchy in reducing the amount of waste being sent to landfill. Like the steps set out within the energy hierarchy, the waste hierarchy seeks to:

- **Step one:** Eliminate waste by reducing single use plastic use, excess packaging, and careful planning in the use of materials and products. Reducing consumerism through repairing goods and promoting the use of second-hand items.
- **Step two:** Reusing waste materials by finding alternative uses for products or items that would usually be thrown away.
- **Step 3:** Recycling/composting waste materials.
- **Step four:** Recover energy from waste, using waste instead of fossil fuels for energy generation to recover the energy embedding within it.

- **Step five:** As a last resort, disposal of waste at landfill sites.

5.3.7: Focus on Land Use and Adaptation/Green and Blue infrastructure

Offsetting by sequestering carbon (removing and storing carbon from the atmosphere) be essential to achieving net zero by 2030. Many additional benefits can be gained through the application of a comprehensive land management policy, including a reduction in food miles through the promotion of locally grown food, increasing biodiversity through improving land and woodland management, and reducing damage to infrastructure through improving natural flood defences.

5.3.8: Focus on Improving Communications and Digital Connectivity

While GBC has the opportunity and ambition to reduce carbon emissions to net zero within our organisation, the Council is not responsible for the majority of carbon emissions across the borough. For the borough to achieve net zero and to make real progress towards positive change, GBC will need to increase awareness of climate change issues through engaging those who live, work, and visit Guildford. We need to engage all aspects of the community and foster partnerships within our communities to work together towards a sustainable future.

Digital connectivity has a vital role to play in reducing the need to travel and influencing behaviour change by making more information available. Guildford Borough Council needs to encourage and support ongoing digital transformation, foster innovation, and become an attractive location for the development of sustainable technology.

5.3.9: Focus on Supporting Borough-Wide Initiatives

Guildford Borough Council recognises that while it is only responsible for approximately 1% of the borough's emissions, it has an important leadership role to play to enable, encourage and support climate change initiatives throughout both the borough and wider community.

Signposting to existing environmental groups will foster effective working partnerships, allow for the sharing of resources, and inform the wider community of funding opportunities.

5.4: Actions

This Action Plan is intended to be a *'living document'*, and to evolve as new opportunities and information arise. The actions contained within the plan seek to provide the foundation to the pathway to net-zero, both within GBC activities and within the wider boroughs. Several actions contained within **Appendix 1.0** are to be reviewed, feasibility studies conducted, and further developed into prioritised programmes and implemented where appropriate.

For a list of actions please see Appendix 1.0 attached to this document.

6.0: Embedding Change

Guildford Borough Council is committed to reducing carbon emissions within the wider setting through leading by example. Having recognised that our response to climate change is a key priority for GBC, we have embedded the key priorities of the Climate Emergency within all of GBC's ongoing works.

6.1: Policies and Strategies relevant to the Action Plan

The Climate Change Action Plan is designed to link to and compliment many other existing policies and strategies, both within Guildford Borough Council and the wider County. At the time of writing, these include:

- The Local Plan,
- The Corporate Plan 2021 - 2025
- Planning Policy,
- Climate Change, Sustainable Design, Construction and Energy SPD
- Air Quality Action Plan,
- Shaping Guildford's Future,
- GBC Procurement Plan,
- Economic Development Strategy,
- The Local Nature Recovery Strategy,
- Surrey County Council Greener Futures,
- Guildford Local Cycling and Walking Infrastructure Plan,

7.0: Finance and Resources

Achieving net zero by Guildford Borough Council has been adopted within our corporate policy, as is ensuring Guildford is financially sound with infrastructure and services fit for the future. This plan will require significant financial investment. However, in many cases there will be an associated return of investment from energy savings.

To achieve the objectives of this action plan, the council will:

- Consider identified projects every year to coincide with capital budget setting. While there are financial constraints, the council has developed a prioritisation methodology which covers a number of criteria including any ongoing revenue costs or savings, deliverability, the extent to which the proposed scheme meets the council's priorities and the environmental credentials for the project. Invest to save capital projects are encouraged and supported particularly when achieving a revenue payback of 5 years or less.
- Use of Power Purchase Agreements (PPAs) to fix the councils long-term energy costs whilst supporting community energy that retains wealth in the borough and generates renewable, net zero carbon power generation
- Continue to look for external sources of funding as they become available to supplement the cost of projects. This often requires GBC to ensure that projects are at a stage where funding can be applied (project ready).

7.1: Cost Projection

Based on the trajectory analysis carried out by APSE Energy in July 2022, the indicative forecast of the cost of achieving net zero across the Council for Scope 1 and 2 emissions is £58.6 million and the total annual savings achieved by 2030 would be equivalent of £962,900 per year. It is estimated that approximately £32 million is required for the installation of air source heat pumps (ASHP) in all council estate, developing 5 MW of solar generation, and to implement a tree planting scheme. £26.6 million will be required to upgrade GBC's fleet to electric, with much of that cost being put towards upgrading 46 refuse lorries.

While this cost is significant, it is noted the information used to estimate the capital cost is not complete and that a separate exercise should take place to review all existing council owned vehicles and assets to provide a clear plan of what interventions can be provided, their capital costs, funding opportunities and the cost/carbon savings.

Table 1: Forecast Capital Cost and Financial Savings from Initiatives including ASHP (Guildford Borough Council Net Zero Carbon Emissions Trajectory, APSE, July 2022)

Forecast Capital Cost and Financial Savings from Initiatives including ASHP Intervention	**Cost of all interventions**	**Accumulative cost saving up to 2030**	**Total annual saving of all interventions in the year 2030**	**Accumulative CO2e Savings by 2030**	**Accumulative £/CO2e Savings by 2030**
Transition from Gas Boilers to ASHP	£25,803,900	£2,658,800	£745,490	13,238	£1,949
Transition to EV Accumulative Savings	£26,599,500	£96,200	£33,302	5,234	£5,082
Electricity Saving from energy efficiency	£1,185,700	£890,600	£241,574	12,260	£97
Electricity Increase for transition to ASHP	£0	-£1,641,900	-£445,395	-821	N/A
Building PV (500kWp by 2030)	£450,000	£255,500	£69,318	128	£3,524
Land Based PV (5MWp by 2030)	£4,500,000	£1,115,300	£318,613	11,567	£389
Tree Planting	£12,201	N/A	N/A	1,791	£7
Total	**£58,551,301**	**£3,374,500**	**£962,900**	**43,396**	**£11,048**

8.0: Programme Management

To succeed in achieving carbon neutrality it is important to demonstrate leadership at the highest level. Good programme governance is key to achieving net zero in Guildford and therefore GBC have put in place the following governance structure to maintain a high level of commitment and management of the climate change programme.

8.1: Executive Committee

The Executive will be responsible for the delivery of the action plan, making key decisions to enable progress and to report to Full Council.

8.2: Climate Change Board

A Climate Change Board (CCB) has been established to have scrutinising role, tracking and monitoring progress of the Climate Change Action Plan. The CCB will draw on the expertise of the advisory members to update and review the Action Plan and to make recommendations to the Executive regarding opportunities.

8.3: Climate Change Response Officers Group

A Climate Change Response Officers Group is to be established from the individual project owners that are responsible for the delivery of the projects within the action plan. The CCRO Group will be responsible for collating progress reports, to share opportunities and challenges, and to offer support and shared resources for inter-departmental projects.

8.4: Annual Progress, Monitoring, and Reporting

This action plan is intended to be a live document and will be updated frequently as new information and opportunities become available.

The CCB have suggested that reports are submitted to full council every 6 months for at least 2 years and that climate change should be a standing agenda item for Executive. Action Plan to be revised every two years to allow project completion and development.

9.0: Conclusion

Governments around the world have recognised that global climates are changing. The change is being driven by an increase global average temperature caused by the amount of carbon being released into the atmosphere through human activity. To reduce the severity of climate change, many national governments have agreed to curb carbon emissions to prevent a 2^{o}C average temperature rise.

In 2019 Guildford Borough Council declared a climate emergency and committed to reducing their Scope 1 and 2 emissions to net zero by 2030. GBC also recognised the importance of biodiversity and improving air quality within the declaration.

Studies have shown that GBC are directly responsible for 1% of carbon emissions within the borough, of which, Scope 1 and 2 emissions make up a significant proportion of the total emissions. GBC look to assume a leadership role within the community to support action in reducing the remaining 99% outside of GBC control, in line with national government ambitions of achieving net-zero by 2050.

The actions contained within Appendix 1.0 are set to be reviewed frequently. Programmes are to be developed based on feasibility studies and the document is to be updated regularly to ensure that the actions remain current and relevant.

An indicative figure of £58.6 Million has been estimated as the cost to achieve net-zero by 2030 from GBC emissions. This figure does not provide any context as to how the programmes are to be funded, either by GBC directly, through government grants, or by other available funding streams. The figure does not account for the development of technology or new policies and only focuses on a small number of potential solutions in achieving net-zero. Therefore, the figure should be viewed only as the potential cost.

Management programmes will be applied to oversee the implementation of the action plan and regular reporting will ensure that targets are realised.

10.0: Contact Details

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Climate Change Officer
Organisational Development
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11.0: Appendix 1.0 - Climate Change Action Plan Actions

Key:									
Timescales		Council's role		Indicative Costs		Carbon Impact		Co-Benefits	
S	Short - < 1year	D	Deliver	£	Low - £0 - £50k	L	Low - <1% reduction in council emissions	**G**	Local, open, participative government
M	Medium – 2023 to 2025	E	Enable and facilitate	££	Medium - £50 - £250k	M	Medium – 2-5% reduction in council emissions	**E**	Supporting a strong, resilient local economy
L	Long – 2025 to 2030	S	Support and encourage	£££	High - £250k - £1M	H	High – 5-10% reduction in council emissions	**H**	Good quality housing
O	Ongoing	L	Lobby	££££	Very High - £1M +	NQ	Not yet quantified	**P**	Effective strategic planning and development management
				NQ	Not yet quantified			**W**	Improvements to health, wellbeing, and biodiversity

Key focus area	**No**	**Actions**	**Sub-Action No**	**Sub- Actions**	**Timescale**	**Council's role**	**Indicative costs**	**Carbon impact**	**Co-benefits**
Climate Emergency Funding	1.1	Develop budget for Climate Change funding			O	D	££	NQ	**P**
	1.2	Ensure that projects are identified prior to funding becoming available. Tie in with 4.2			O	D	£	NQ	**P**

			1.2.1	Develop list of available and planned available funding and list the criteria for a successful bid.	O	D	£	NQ	**P**
	1.3	Explore Council Fund Bidding officer post			S	D	£	NQ	**P**
	1.4	Seek funding opportunities which support emissions reduction across Guildford and support delivery of actions within the Climate Change Action Plan			O	S	£	NQ	**P**
	1.5	Explore opportunities for securing joint funding opportunities with SCC and other boroughs			O	S	£	NQ	**P**
Organisational Governance Emissions Reduction	2.1	Develop a comprehensive energy monitoring and targeting programme to understand the council's current carbon/energy performance and identify areas for reduction.			S	D	£	L	**P**
			2.1.1	Develop procedure for gathering and storing data as it is made available using Systemslink to store all the Scope 1 & 2 data.	S	D	£	L	**P**
			2.1.2	Consider a collaboration with an energy monitoring organisation such as GridEdge.	S	D	£	L	
			2.1.3	Appoint Energy Strategy Officer	S	D	£	L	**P**
			2.1.4	Investigate feasibility of an officer led "Emissions Reporting working group" to ensure collaboration across the services on reporting emissions data in a timely manner.	S	D	£	L	**G, P**
			2.1.5	Investigate Utilities Officer Post	S	D	£	L	**P**

			2.1.6	Continue to report annual emissions to Executive	O	D	£	L	
			2.1.7	Map potential emissions reduction pathways against set budget periods for the Council to achieve net zero carbon emissions by 2030	S	D	£	L	**P**
	2.2	Undertake an assessment of GBC Scope 3 emissions and use this to inform future procurement decision making processes.			S	D	£	L	**P**
			2.2.1	Commission a report to investigate GBC's Scope 3 emissions and assess the carbon impact of current contracts	S	D	£	L	
	2.3	Develop an LGA guidance document for reporting on supply chain emissions associated with Council operations			S	D	£	L	**G, E**
			2.3.1	Develop policy and procedure to gather Scope 3 data from third parties and incorporate these policies and procedures within the procurement process and future contracts.	S	D	£	L	**P**
	2.4	Adopt a low carbon procurement framework			M	D	£	L	
			2.4.1	Modify procurement policies to reflect the promotion of sustainable and ethical practices in accordance with the Scope 3 assessment.	M	D	£	L	**G, E**
			2.4.2	Undertake targeted engagement with key contractors and market foster collaboration	M	D	£	L	

			2.4.3	Consider the feasibility of applying a scoring mechanism that favours emission reduction	M	D	£	L	
			2.4.4	Develop a carbon reduction statement within tender documents provided to suppliers to ensure they prioritise emissions reduction, sustainability and environmental considerations within their proposals and that suppliers provide a sustainability statement with all tenders	M	D	£	L	**G, P**
			2.4.5	Ensure tender documents include a section on supplier commitment to reduce single use plastics.	M	D	£	L	**G, W**
			2.4.6	Introduce a social value policy	M	D	£	L	**W**
			2.4.7	Adopt joint SCC Procurement policy	O	S	£	L	**G**
	2.5	Encourage all existing contractors to reduce their carbon emissions from fuel consumption and to make explicit their goals for carbon reduction			S	S	£	L	**W**
	2.6	Continue to engage with SCC and other Surrey districts on joint carbon reduction opportunities.			S	S	£	L	**G**
			2.6.1	Continue to support Surrey County Council Greener Futures Climate Change Delivery Plan	S	S	£	L	**G, P**
			2.6.2	Continue to collaborate with Waverley Borough Council on Climate Change Matters	O	D	£	L	**G, P**
			2.6.3	Explore shared resources potential with Waverley and Surrey Councils	S	D	£	L	**G, P**
	2.7	Review organisational paper use			S	D	£	L	**G**

			2.7.1	Identify and resolve any barriers to the use of existing Mod.Gov use by all Councillors and officers to access and use all committee papers electronically.	S	D	£	L	**G**
			2.7.2	Phase out printed agendas and reports.	M	D	£	L	**G**
			2.7.3	Investigate paperless alternatives such as tablets.	M	D	£	L	**G**
			2.7.4	Identify and resolve accessibility issues through an Equality Impact Assessment	S	D	£	L	**G**
			2.7.5	Review paper purchasing and move to a more sustainable supplier.	S	D	£	L	
			2.7.6	Continue the delivery of digital transformation projects to enable increased access to online services to reduce printing.	M	D	~~£~~£	L	
			2.7.8	Develop policy for the printing of large documents in the most efficient way possible	S	D	~~£~~£	L	
			2.7.9	Develop feasibility study in reducing the number of multifunctional Devices (MFD's (printers)) at Millmead Offices to reflect the reduction of office-based staff	S	D	£	L	
	2.8	Continue realisation assessment of Millmead House. Prioritise moving Services to a Carbon Neutral base of operations.			M	D	~~£~~£~~£~~£	M	**E, P**
	2.9	Deliver a Climate Change Communications Plan to improve our approach to climate change communications and community engagement			S	D	£	L	**G, P**
			2.9.1	CCB to sign off on the Climate Change Communications Plan	S	D	£	L	

			2.9.2	Investigate Climate Change Engagement Post	S	D	£	L	**G**
	2.10	Collaborate with Surrey County Council to work towards a portfolio of responsible pension investments			M	L	£	L	
	2.11	Adopt a Climate Change Adaptation and resilience Plan			M	D	£	L	**E, H, P, W**
			2.11.1	Continue to progress 'Shaping Guildford's Future' programme to develop GBC's Climate Adaptation and Resilience measures.	M	D	~~£~~~~£~~~~£~~~~£~~	M	**G, E, P, W**
			2.11.2	Commission a report into the demographic of the borough to identify stakeholders in high risk of Climate Change harm.		D	£	L	**H, W**
	2.12	Ensure that Climate Change is incorporated within a future refreshed Council Plan and all other relevant council policies, strategies, plans and contracts			S	D	£	L	**G, P**
			2.12.1	Climate Change to be considered a Core Council Value and is to be included in internal service plans.	S	D	£	L	**G, P**
			2.12.2	All council decision reports to include a carbon calculation and subsequent passage on the impact of any change to council emissions. Additional opportunities for carbon reduction or wider environmental opportunities can be explored within the report.	S	D	£	L	**G, P**
	2.13	Review policies for air quality, transport, waste management and sustainability at events and festivals			S	D	£	L	**W**

	2.14	Identify training needs for staff, councillors and other stakeholders on the climate emergency and the impact of decisions on carbon emissions			M	D	£	L	
			2.14.1	Provide carbon literacy/climate change training to staff. Consider base level training for all staff and more targeted training for decision makers	M	D	£	L	
			2.14.2	Identify opportunities to include carbon management to existing training courses.	M	D	£	L	
			2.14.3	Review climate change training needs for all new staff, newly appointed decision makers and newly elected Councillors	M	D	£	L	
	2.15	Explore opportunities for work placements and internship opportunities to support the delivery and development of the climate change action plan.			S	D	£	L	**E**
	2.16	Review the council's staff working at home policy, business travel mileage policy, essential car user policy and staff parking provision			M	D	£	L	
			2.16.1	Continue the delivery of digital transformation projects to enable increased access to online services to reduce the need for travel.	M	D	£	L	**W**
			2.16.2	Review essential car user policy and assess the compatibility with carbon reduction measures. Reflect the use of EV, stop rewarding larger engine sizes.	S	D	£	L	
			2.16.3	Explore improvements into council ICT for home working and distance learning	M	D	£	L	

	2.17	Develop a Heatwave and Cold Weather Plan to be reviewed annually			O	D	£	L	**E, H, W**
	2.18	Develop an emissions reduction plan for Guildford Borough			O	D	£	L	
			2.18.1	Commission a carbon footprint assessment for Guildford Borough	O	D	£	L	**P**
			2.18.2	Define emissions trajectory for the borough towards 2030 and beyond	M	D	£	L	**P**
			2.18.3	Define emissions trajectory scenarios against national 2050 target	M	D	£	L	
Transport, Active Travel, and air quality	3.1	Review GBCs grey fleet and improve the provision of ULEV pool cars for business use.			M	D	£	L	
	3.2	Develop a staff travel plan which compliments the Council Transport Policy. The Plan will consider a variety of travel options for staff including car clubs, ULEV pool cars and active travel incentives.			S	D	£	L	
			3.2.1	Install EV charging and bike storage to enable staff to switch to active travel and sustainable business travel and commuting	O	D	£	L	**W**
			3.2.2	Develop ‘EasitGUILDFORD’ travel scheme	S	D	£	L	**E**
			3.2.3	Develop annual staff travel survey to establish baseline data to understand barriers towards a shift towards more sustainable modes of transport.	S	D	£	L	
			3.2.4	Explore options to support more sustainable travel incentives including staff cycle hire/purchase schemes.	S	D	£	L	**W**

	3.3	Develop EV strategy and delivery plan			O	D	£	L	**G, P**
			3.3.1	In partnership with SCC continue with the installation of on street EV charging points. Promote the chargers once installed	O	D	NQ	NQ	**W**
			3.3.2	Phase II of the EV charger roll out in Guildford car parks to implement a robust EV charging network and encourage the switch to EV.	O	E	NQ	NQ	**W**
			3.3.3	Implement the DEFRA funded trial programme for EV taxis as detailed within GBCs Air Quality Action Plan.	M	D	NQ	NQ	**E**
			3.3.4	Investigate updating taxi Licensing conditions with new emissions standards	M	D	£	L	**E**
			3.3.5	Mapping project of EV charging potential include grid constraints	M	S	£	L	**P**
			3.3.6	Feasibility study for dedicated webpage on GBC website to help inform, identify demand, requested locations and other feedback for EV charging.	S	D	£	L	**G**
			3.3.7	Work with GBC private and public sector partners to identify EV charging point key locations	M	E	£	NQ	**G**
			3.3.8	Integrate EV charging infrastructure into new developments.	M	L	£	NQ	**E, W**
	3.4	Develop a cycle strategy in partnership with Surrey County Council as set out in the draft SCC Local Transport Plan.			L	S	£	NQ	**W**
			3.4.1	Support SCC to develop and implement a Guildford Local Cycling and Walking Infrastructure Plan for a network of walking and cycling routes across	M	S	£	NQ	**P, W**

				Guildford Borough, ensuring a high quality network of routes which accommodate a variety of users					
			3.4.2	Work with stakeholders and partners to provide secure cycle parking, bike hire and promotion of electric cargo bikes	M	E	££	NQ	**W**
	3.5	Phase in ULEV into GBC existing fleet			O	D	£££	H	**W**
			3.5.1	Implement EV charging, fleet replacement and management	O	D	£££	H	**W**
			3.5.2	Phase in Electric light commercial vehicles	O	D	££	M	**W**
			3.5.3	Phase in Electric Heavy Commercial Vehicles	O	D	££	M	**W**
			3.5.4	Explore the feasibility and benefits of providing internal eco driving courses for staff.	S	D	£	L	
			3.5.5	Explore the feasibility and benefits of setting up a local fleet recognition scheme.	S	E	£	L	
	3.6	Advocate the development of a mobility service app in collaboration with SCC and other Boroughs.			M	S	NQ	NQ	**E, W**
	3.7	Support SCC in implementing the adopted Bus Service Improvement Plan			O	S	£	NQ	
	3.8	Investigate options for car demand management such as emission-based charging			S	S	£	NQ	
	3.9	Work with stakeholders and partners to expand and promote the use of ULEV and car clubs			O	S	£	NQ	
	3.10	Investigate engagement opportunities to promote active and sustainable transport			S	D	NQ	NQ	**G, W**

			3.10.1	Car free day scheduled for September 25th, 2022. Look to make an annual event	S	D	£	NQ	**G, E, W**
	3.11	Investigate options for traffic re-routing and delivery hubs to encourage lower freight, including 'last mile' delivery options			M	D	£	NQ	**E**
	3.12	Investigate feasibility of introducing an 'eco-levy (pay as you drive) and/or a Workplace Parking Levy.			S	S	£	NQ	
	3.13	Support SCC in the implementation of the Rail Strategy			O	S	£	NQ	
	3.14	Investigate travel planning opportunities, covering workplace, schools, and other educational settings, securing developer funding where available.			M	D	£	NQ	
	3.15	Review transport provision policies with private transport sector, including school transport providers, to incentivise the switch to ULEV.			M	D	£	NQ	
	3.16	Promote and facilitate walk and/or cycle to school initiatives, including local and national focus events.			M	D	£	NQ	**W**
	3.17	Work with local universities and colleges to identify and promote safe walking/cycle routes			M	E	£	NQ	**W**
	3.18	Undertake gap analysis on river accessibility, look to unlock walking/cycling routes.			L	D	£	NQ	**W**
	3.19	Continue to deliver the Air Quality Action Plan.			O	D	£££	NQ	**G, E, P, W**
	3.20	Investigate feasibility of engaging current partners and contractors			S	S	£	NQ	

		and encourage reducing fleet emissions							
			3.20.1	Consider a procurement clause for commitment to reducing fleet emissions. Tie in with 2.4.4.	M	D	£	NQ	
Renewable energy generation	4.1	Develop Renewable Energy Implementation Programme to build on the 2015 renewable energy report.			S	D	£	H	**G, E, P**
			4.1.1	High level geospatial mapping of building energy performance and sustainable energy potential.	S	D	£	L	
			4.1.2	Mapping of energy network constraints.	S	D	£	L	
			4.1.3	Solar study on feasibility and viability for standalone solar facilities and potential rooftop scheme at Slyfield Industrial Estate	S	D	£	L	
			4.1.4	Map potential for standalone renewable energy with specific GBC owned site recommendations (Hydroelectricity, solar, wind, heat pumps, etc)	S	D	£	L	
			4.1.5	Collaborate with Planning to secure Pre-application advice regarding any identified sites for GBC controlled renewable energy	S	D	££	L	**P**
			4.1.6	Undertake feasibility study for instillation of solar PV at GBC carparks, include solar canopies and EV charging.	S	D	£	L	
			4.1.7	Feasibility study of installing Solar PV on all GBC owned buildings	S	D	£	L	
			4.1.8	Work through GBC mandate process to develop renewable energy sites.	M	D	£	L	
			4.1.9	Undertake a landfill review to establish the potential for solar PV	M	D	£	L	

	4.2	Promote and provide information on renewable technologies on GBC website (Heat Pumps, Solar, etc.)			S	D	£	NQ	
	4.3	Collaborate with SCC, Waverley, and other boroughs to investigate joint renewable energy projects			O	E	£	NQ	**G, P**
	4.4	Investigate the available carbon offset from renewable energy projects			M	D	£	L	**P**
	4.5	River heat source mapping project to build on the 2015 renewable energy report.			M	D	£	L	**P**
	4.6	Feasibility study for larger scale renewable energy production within Guildford, to build on the 2015 renewable energy report.			M	D	£	L	**P**
			4.6.1	Investigate potential for larger scale solar PV generation through acquisition from a third party	M	D	£	L	**P**
			4.6.2	Consider purchasing land for solar and energy production	L	D	£	L	
			4.6.3	Engage with Guildford's largest businesses and organisations to work jointly on renewable energy initiatives.	M	D	£	L	**E**
			4.6.4	Explore opportunities to consider installing solar panels on commercial buildings and selling power generated from the panels.	M	D	£	NQ	**E, P**
Built Environment	5.1	Assess GBC assets for additional carbon reduction opportunities			M	D	£	NQ	**P**
	5.2	Develop a programme for retrofitting GBC estate and procurement arrangements –			M	D	£££	H	**H, P**

		potential carbon reduction measures to be assessed on a case-by-case basis. Feed into Action 2.1.7							
			5.2.1	Complete an Energy Performance Survey of GBC assets under direct control	S	D	££	L	**P**
			5.2.2	Complete an Energy Performance Survey of all GBC tenanted assets	M	D	££	L	**P**
			5.2.3	Build an Energy Performance Baseline	M	D	£	L	**P**
			5.2.4	Develop programme of works to replace all lighting with LED lights.	M	D	NQ	NQ	
			5.2.5	Building insulation programme of works to be developed for all GBC housing stock	L	D	NQ	NQ	**H**
			5.2.6	Boiler replacement programme to be developed for all GBC assets	L	D	NQ	NQ	**H, P, W**
			5.2.7	Develop register of all GBC owned property to include 'end of life' assessments for all plant.	S	D	£	L	**P**
			5.2.8	Identify and develop projects for replacement/retrofit of GBC owned plant to ensure that projects are 'bid ready' when funding becomes available.	S	D	£	L	**P**
			5.2.9	Continue with estate rationalisation	O	D	NQ	NQ	
			5.2.9	Introduce Buildings Management Systems – Heating Controls	S	D	NQ	H	
			5.2.10	Introduce Buildings Management Systems – Control Optimisation – Integrative Controls to monitor energy usage in council buildings and optimisation of spaces.	S	D	NQ	H	
			5.2.11	Introduce Buildings Management Systems – Introduce energy efficient appliances	S	D	NQ	H	

			5.2.12	Introduce Buildings Management Systems - Water usage within buildings to be monitored and reduced.	S	D	NQ	L	
				Identify and deliver priority actions for key buildings in a phased programme	M	D	NQ	H	
	5.3	Provide guidance and information regarding sustainable practices to encourage the reduction of environmental impact to all development site applications			O	D	£	NQ	**G, E, H, P**
			5.3.1	Provide clear carbon sustainability targets at the design stage	O	D	£	NQ	**G, H, P**
			5.3.2	Encourage developers to explore innovative construction methods and materials used in building schemes.	O	S	£	NQ	**G, H,**
	5.4	Encourage development site applications include potential for low carbon energy including heat networks			O	S	£	NQ	**P**
	5.5	Map viable local energy schemes and potential impact on emissions trajectory across the borough			S	D	£	NQ	**P**
	5.6	Develop a programme to encourage and facilitate the retrofitting of energy efficiency schemes across the borough			M	D	NQ	NQ	**H, P, W**
			5.6.1	Continue to support and promote 'Green Jump/Action Surrey' and other funding schemes providing grants for residents for energy efficiency home improvements.	O	S	£	NQ	**H, P, W**
			5.6.2	Continue to support and promote 'LoCASE' grants to SMEs for the installation of energy efficiency solutions and advice.	S	S	£	NQ	**E, P, W**

			5.6.3	Develop replacement scheme for LoCASE with SCC	S	S	NQ	NQ	**E, P**
	5.7	Develop mapping of building energy performance and sustainable energy potential across the borough			M	D	£	NQ	**P**
	5.8	Develop sustainable energy projects for GBC owned assets			M	D	NQ	NQ	**H, P**
			5.8.1	Implementation of rooftop solar PV on GBC owned assets. Tie in with 3.1.7	S	D	NQ	M	
			5.8.2	Hydro-electric private wire review	S	D	£	L	
			5.8.3	Mapping and feasibility study to be completed for the installation of heat pumps at GBC owned assets.	M	D	£	NQ	
	5.9	Energy efficiency improvements to the Lido Leisure Pool – Pool cover to be installed to reduce heating costs			S	D	££	NQ	
	5.10	Spectrum Leisure Centre – Decarbonisation options to be explored and programme developed to reduce carbon emissions from GBC asset			S	D	£££	H	**P, W**
			5.10.1	Explore all options for Spectrum through GBC mandate process	S	D	£	L	
			5.10.2	Develop Energy Performance Contract when procuring new Spectrum management contract	M	D	NQ	NQ	**P**
	5.11	Continue with streetlamp replacement with LED lamps			O	D	NQ	NQ	
	5.12	Move GBC energy procurement over to Green Tariff/Green Basket solutions			S	D	£33K allocated	H	
	5.13	Explore potential for GBC new builds to attain Passivhaus standards			O	D	£	NQ	**E, H, P**

	5.14	Collaborate with Housing contractors to modify response times or batching of work in areas within specific days to reduce travel costs.			S	E	£	NQ	
	5.15	Investigate and implement opportunities for community energy projects in conjunction with other stakeholders, including not-for-profit organisations.			M	S	NQ	NQ	**G, S, H, P, W**
	5.16	Develop plans for alternatives to individual gas boilers in new and existing Council homes			M	D	NQ	H	**H, P, W**
	5.17	Evaluate stock condition data held to ensure it is robust enough to inform plans for energy efficiency. Take remedial action on identified shortfalls.			S	D	£	L	
	5.18	Undertake a stock condition/energy efficiency survey of all senior living schemes to inform an asset management plan for the schemes			M	D	NQ	NQ	**H, P, W**
	5.19	Commission desktop modelling scheme on current private stock conditions to identify areas of interest for planned programme of works to meet the carbon neutral commitment.			M	D	£	L	
	5.20	Investigate enforcement of minimum efficiency standards for the private rented sector			S	D	£	NQ	**H**

	5.21	Continue with 'Shaping Guildford's Future' Programme to develop and implement a pipeline of place-making projects			O	D	NQ	NQ	**G, E, H, P, W**
	5.22	Continue to implement and update the Local Flood Risk Management Strategy and Action Plan			O	D	£	NQ	**P, W**
	5.23	Explore installing/improving shower and changing facilities within Council Buildings to promote active travel to work.			S	D	£	NQ	**W**
Waste and Resources	6.1	Continue to develop Waste and Recycling Initiatives			O	D	NQ	NQ	**P**
	6.2	Investigate community composting schemes to reduce garden waste volumes			M	S	£	NQ	**G**
	6.3	Continue to promote the textile and WEEE kerbside collection.			M	D	£	NQ	
	6.4	Develop a programme to work towards becoming a zero-waste borough encouraging waste reduction and reuse and recycling, for domestic, commercial, and industrial waste.			M	D	NQ	NQ	**E**
	6.5	Explore GBC controlled waste streams to identify opportunities for further waste reduction through the waste hierarchy.			M	D	£	NQ	**P**
	6.6	Establish a working group to conduct an audit of avoidable single use plastic across GBC owned buildings and working practices. Develop			S	D	£	L	

		timeline to achieve becoming a single use plastic free organisation.							
	6.7	Continue to support and increase regular community led litter picks across Guildford.			O	S	£	NQ	**G, W**
	6.8	Work with stakeholders and partners to develop innovative measures to reduce the amount of plastic waste across Guildford.			O	S	NQ	NQ	**G, W**
	6.9	Continue to work with stakeholders and partners to develop clean-up programmes of riparian and marine plastic pollution.			O	D	NQ	NQ	**W**
	6.10	Investigate sustainability issues associated with food production, food waste and food procurement.			M	D	£	NQ	**E, W**
	6.11	Review council commercial waste management practices and identify opportunities for improvement			O	D	£	NQ	
			6.11.1	Audit council waste management arrangements	O	D	£	NQ	
			6.11.2	Audit council waste arisings	O	D	£	NQ	
			6.11.3	Develop waste reduction programme for council operations	M	D	NQ	NQ	
	6.12	Continue to investigate innovative solutions to reduce the use of pesticides on council owned land.			S	D	£	NQ	**W**
	6.13	Work with SCC to make soil improver made from composting local food and green waste available to residents.			S	E	NQ	NQ	
	6.14	Support the implementation of the Extended Producer Responsibility			S	D	£	NQ	**E**

		(EPR) and promote to Guildford mail order and online businesses.							
	6.15	Develop waste communications plan			S	D	£	NQ	**G, P, W**
			6.15.1	Continue to work with stakeholders and partners to decrease the amount of household waste collected and to reduce levels of contamination in recycling streams.	S	D	NQ	NQ	**G**
			6.15.2	GBC website to link Waste and Climate Change webpages.	M	D	NQ	L	
			6.15.3	Continue to signpost residents to recycling facilities for products unable to be recycled at the correct methods for recycling batteries and electrical goods.	S	D	£	NQ	
			6.15.4	Household waste reduction and recycling campaign including educating Council tenants on need to reduce waste.	S	D	NQ	NQ	
			6.15.5	Promote season specific actions i.e., Halloween, Christmas etc.	S	D	£	NQ	
			6.15.6	Promotion of waste hierarchy – Refuse, Reduce, Reuse, Repurpose, Recycle.	S	D	£	NQ	
			6.15.7	Develop an education programme for families and communities to show how to reduce the amount of waste produced in daily lives.	S	D	NQ	NQ	
			6.15.8	Develop projects and networks to help facilitate sharing economy initiatives - Sustainable Cafes/Resource Libraries	M	D	£	NQ	
Land Use and Adaptation: the	7.1	Work with Parish and Town councils and relevant not-for-profit			M	E	NQ	NQ	**G, W**

green and blue infrastructure		organisations to encourage local food production via allotments and community farms							
			7.1.1	Secure new garden/allotment space to promote Grow Your Own initiatives and support community projects and activities	M	D	NQ	NQ	**G, W**
			7..1.2	Review of current allotment holding process to make better use of existing allotments	M	D	£	NQ	**W**
			7.1.3	Work with community partners, including housing, to develop more urban growing spaces, including edible trails and green walls	M	S	NQ	NQ	**W**
			7.1.4	Support education of stakeholders on how to design and cultivate urban growing spaces	M	S	NQ	NQ	**W**
	7.2	Investigate the opportunity to identify unused land that can be used for local food production.			M	D	£	NQ	**E, P, W**
	7.3	Collaborate with SCC and other boroughs to establish a badge system to identify food produced locally (less than 30 miles).			M	S	NQ	NQ	**G, E**
	7.4	Adopt or continue to support policies that enhance the natural environment such as: • Local Nature Recovery Strategy • Tree and woodland management policy			S	D	£	NQ	**G, E, P, W**
	7.5	Implement 'No Mow May' initiative and work with SCC to align biodiversity policies.			S	E	NQ	NQ	**G, W**

	7.6	Develop a Land Management Framework to ensure that multifunctional benefits are considered including carbon, biodiversity, and flood protection			S	S	NQ	NQ	**G, P, W**
	7.7	Working with SCC, implement the Environmental Land Management programmes from 2024 utilising funding from the Farming in Protected Landscapes Programme (in Surrey Hills and High Weald AONB)			M	S	NQ	NQ	**G, P, W**
	7.8	Manage GBC owned farms based on the principles set out in the Land Management Framework.			M	D	NQ	NQ	**E, W**
	7.9	Investigate the viability of producing Woodland Carbon Units (WCU) for others as well as meeting GBCs needs through tree planting and question if GBC should purchase WCU from others.			S	D	£	NQ	**P**
	7.10	Facilitate and support multiagency bids for flood alleviation schemes. Focus on utilising natural flood risk management lowering flood risk by planting trees and restoring marshland.			O	E	NQ	NQ	**G, E, P, W**
	7.11	Develop an evidence base on farming, food and drink, rural tourism and consider options to support rural development.			M	D	£	NQ	**G, E, P, W**
	7.12	Embed natural capital and land use opportunities designed to sequester			M	D	NQ	NQ	**G, P. W**

		carbon emissions into all appropriate infrastructure and development schemes, countryside estate management plans and land management policies							
			7.12.1	Commission a report to identify opportunities for natural solutions to climate change	S	D	£	L	**P, W**
			7.12.2	Identify habitat areas across Guildford for protection as carbon sinks and wildlife habitats.	S	D	£	NQ	**P, W**
	7.13	Continue to improve GBC's current 400ha of woodland and secure funding from the Forestry Commission to produce Forestry Stewardship Management Plans.			O	D	NQ	NQ	**P, W**
			7.13.1	Engage volunteer to carry out annual tree canopy coverage survey	S	E	£	NQ	**P, W**
			7.13.2	Develop a Tree Strategy and funded Plan with clear actions and targets	S	D	£	NQ	**P, W**
			7.13.3	Re-instate coppicing for biodiversity, timber, landscape, and carbon storage	M	D	NQ	NQ	**E, W**
	7.14	Continue with planned tree planting schemes and explore collaboration with SCC.			O	D	NQ	NQ	
	7.15	Develop investment vehicles in collaboration with SCC and other districts to fund carbon sequestration and natural capital schemes.			M	D	NQ	NQ	
	7.16	Commission a borough wide biodiversity assessment			S	D	£	NQ	**P, W**

	7.17	Collaborate with other organisations to support tree planting on private land.			S	E	NQ	NQ	**G, W**
	7.18	Explore bee friendly civic planting initiatives.			S	S	NQ	NQ	**W**
	7.19	Increase number of wildflower verges on Council owned land. Seek collaboration with other stakeholders to develop wildflower meadows.			M	D	NQ	NQ	**W**
	7.20	Develop a Green and Blue Infrastructure Framework and ensure that developer contribution funds are secured for its delivery.			S	D	NQ	NQ	**E, P, W**
	7.21	Continue to ensure that regeneration programmes include the creation of green open spaces providing benefits to both local community and wildlife.			M	E	NQ	NQ	**P, W**
	7.22	Continue to encourage developers to explore opportunities to provide planting and natural screening to mitigate against noise and air pollution and improve visual impact of developments.			M	S	NQ	NQ	**G, P, W**
	7.23	Develop a biodiversity action plan			S	D	NQ	NQ	**E, P, W**
	7.24	Explore Bee Friendly bus stops and pollinator friendly planting schemes in public places.			S	L	NQ	NQ	**E, W**
Communications	8.1	Develop and adopt a climate change communications plan			S	D	£	NQ	**G, P**

			8.1.1	Develop communications campaign plan for upcoming year	S	D	NQ	NQ	**G, P**
			8.1.2	Explore UNIS behavioural insight programme	S	D	NQ	NQ	
			8.1.3	Tailor communications to ensure the various demographics can access and understand the information provided.	S	D	NQ	NQ	**G, W**
	8.2	Develop plan to inform stakeholders of funding opportunities for the reduction of carbon emissions or other climate change concerns.			S	D	£	NQ	**G**
	8.3	Provide information regarding potential partnerships and low carbon incentive schemes			S	D	£	NQ	**G**
	8.4	Explore partnerships, Citizen Panels, and models for engagement through GBC mandate process			S	D	££	NQ	**G**
	8.5	Collaboration with SCC to develop County-wide communications plan			O	S	NQ	NQ	**G, P**
	8.6	Promote opportunities for sustainable transport use and local transport solutions. Including car share and ULEV solutions			M	S	NQ	NQ	**G**
	8.7	Develop actions to promote climate change action to local schools			M	S	£	NQ	**G, W**
			8.7.1	Provide support to schools to enable young people to act against climate change	S	S	£	NQ	**G, W**
			8.7.2	Provide climate change educational resources and help access funding for schools	M	D	£	NQ	**G**
			8.7.3	Engage with schools on how to improve their buildings/assets	M	S	NQ	NQ	**G**

	8.8	Reach out to other Public Sector organisations (Police, NHS, Etc.) to collaborate with the development and promotion of decarbonisation and other environmental initiatives			M	S	NQ	NQ	**G**
	8.9	Approach and secure Climate Champions from each service/department to aid with reporting and initiative promotion throughout GBC and encourage staff to reduce emissions in their workplace and more widely.			M	D	£	NQ	**G**
	8.10	Ensure that residents and communities are informed regarding the environmental impacts of developments during the development design process through Planning portal.			O	E	NQ	NQ	**G**
	8.11	Work with SCC to deliver future telecommunications upgrades			L	S	NQ	NQ	**E, P**
	8.12	Design and deliver the "Small Changes" public information campaign focusing on how individuals can reduce their carbon footprint			S	D	£	NQ	**G, W**
			8.12.1	Promote national days and inform how the community can support these.	O	D	£	NQ	**G, W**
			8.12.2	Continue to support Guildford ZERO and promote their waste reduction initiatives and carbon reduction schemes.	O	S	£	NQ	**G, E, W**
			8.12.3	Promote community initiatives that work towards carbon or waste reduction in Guildford	O	S	NQ	NQ	**G, E, W**

			8.12.4	Promote campaigns to reduce stakeholder's environmental impact.	O	D	NQ	NQ	**G**
	8.13	Support the reduction of single use plastics within our communities			S	S	NQ	NQ	**W**
			8.13.1	Promote Refill schemes to reduce the use of single use plastics. Offer residents and businesses access to water refill stations to help tackle single use packaging.	S	S	£	NQ	**W**
	8.14	Improve the way the Council communicates about discount and energy grant schemes available to businesses and residents including those who are in fuel poverty, on a low income and are vulnerable to living in a cold home due to age/health conditions.			S	D	£	NQ	**G, W**
			8.14.1	Encourage the uptake of national funding schemes such as the Home Upgrade Grant (HUG)	O	S	£	NQ	**H**
			8.14.2	All schemes that are promoted by the council will be reviewed by Trading Standards for legitimacy before proceeding	S	D	£	NQ	
			8.14.1	Encourage the uptake of national funding schemes such as proposed heat pump grants	S	S	£	NQ	**H**
	8.15	Website refresh to provide information and resources to stakeholders			M	D	£	NQ	**G**
	8.16	Explore opportunities for volunteer groups to help promote climate change messages/ assist local			S	E	£	NQ	**G**

		communities with environmental projects.							
	8.17	Regular progress updates will be provided on the Council's web pages, social media platforms, and newsletters			O	D	£	NQ	**G**
	8.18	Develop/deliver a behavioural change programme to staff and councillors to reduce carbon impact while working at home/the office and in home lives e.g., sustainable transport options, energy efficiency, procurement, and waste.			M	D	NQ	NQ	**G, W**
	8.19	Develop and deliver energy efficiency, renewable energy awareness campaign to private homeowners and landlords			S	D	£	NQ	**G, H**
	8.20	Carry out engagement activities that promote active and sustainable travel.			O	D	NQ	NQ	**G, W**
	8.21	Work with a network of community partners through the Greener Futures Climate Delivery Network and others to encourage participation and provide support for community-led activities.			S	S	NQ	NQ	**G**
	8.22	Develop and deliver an anti-idling campaign across Guildford			S	D	£	NQ	**G, W**
	8.23	Promote and support community energy projects by raising awareness of their existence with the wider community			O	S	NQ	NQ	**G**

	8.24	Develop an informal staff network to become conduits for future campaign information and share best practise.			S	D	£	NQ	**G**
	8.25	Develop climate change hub on GBC's web pages			M	D	£	NQ	**G**
	8.26	Promote and inform residents regarding woodburning stoves ensuring that only authorised fuels and approved appliances are used.			S	D	£	NQ	**W**
	8.27	Provide list of local and national funding schemes on GBC website, with links to relevant pages and aid in form filling if required.			S	D	£	NQ	**G**
	8.28	Continue to work with private sector to improve the digital connectivity across Guildford.			O	S	NQ	NQ	**G, E**
Borough-wide emissions reduction initiatives	9.1	Engage and work with local businesses within Guildford to work towards the net zero carbon target.			O	S	£	NQ	**G, E**
			9.1.1	Engage with local business owners through Guildford for Business network and residential homes/day care to develop awareness of the climate change action plan.	O	S	£	NQ	**G**
			9.1.2	Work with the Surrey Chamber of Commerce and the Sustainable Business Network to embed net zero carbon understanding in start-up business support, and other business training provided on Guildford's behalf.	O	S	NQ	NQ	**G**

			9.1.3	Develop and promote initiatives to encourage businesses to recycle commercial waste. Signpost businesses to Low Carbon initiatives such as Upcycle your waste project	S	D	NQ	NQ	**G, E**
			9.1.4	Facilitate and promote SME Grants for sustainable energy (LoCASE) to install energy efficiency measures and advice	O	E	£	NQ	**G, E**
			9.1.5	Explore initiatives to incentivise good practice among our businesses such as environmental excellence awards for organisations committed to sustainable ways of working, leading in environmental best practice, and working towards net zero carbon targets	S	S	NQ	NQ	**G, E**
			9.1.6	Support SCC initiatives and plans to develop Green Skills across the region to bridge the skills gap and foster local job creation.	M	S	NQ	NQ	**G, E**
	9.2	Support and promote low carbon and circular economy opportunities to businesses in Guildford			M	S	NQ	NQ	**G, E**
			9.5.1	Evidence and celebrate with regular updates.	O	S	NQ	NQ	**G, E**
	9.3	Engage and work with housing providers and residents within Guildford to work towards the net zero carbon target.			M	S	NQ	NQ	**G, H**
			9.3.1	Develop community empowerment programmes and showcase community sustainability champions	M	D	NQ	NQ	**G**

			9.3.2	Facilitate and promote retrofit programmes funded by the Green Homes Grant Local Authority Delivery Funds	O	E	£	NQ	**G, H**
			9.3.3	Work with social housing providers to accelerate low carbon measures for social housing.	O	S	NQ	NQ	**G, H**
			9.3.4	Collaboration with SCC to explore setting up a loan scheme to help landlords improve buildings and reduce emissions for the benefit of tenants.	M	S	NQ	NQ	**G, E, H, W**
			9.3.5	Continue to facilitate and promote national funding schemes such as the Home Upgrade Grant or similar.	O	E	£	NQ	**G, H, W**
			9.3.6	Continue to support the Action Surrey fund to provide help for high carbon households pay for low carbon measures and reduce the cost of heating	O	S	£	NQ	**G, H, W**
			9.3.7	Investigate further collective buying schemes to reduce the cost of solar panels and energy storage, such as 'Solar Together' or similar.	M	S	NQ	NQ	**G, H**
	9.4	Encourage the provision of key services within 20-minute neighbourhoods			O	E	NQ	NQ	
	9.5	Investigate the Community Energy Pathway with a view to implement and provide support community groups seeking to invest in energy efficiency measures and renewables			S	D	£	NQ	**G**
	9.6	Engage and work with other stakeholders within Guildford to work towards the net zero carbon target.			S	S	£	NQ	**G, E, H, W**

			9.6.1	Identify groups in Guildford and Surrey working towards community climate action. Showcase and seek out funding opportunities to support their work	S	S	£	NQ	**G, E, H, W**
			9.6.2	Explore joint working and academic research opportunities with universities	O	S	NQ	NQ	**G**
			9.6.3	Support and encourage community sustainability champions and develop community empowerment programmes.	O	S	£	NQ	**G**
			9.6.4	Ensure that there are real opportunities to encourage community-led initiatives, such as the promotion of decentralised renewable energy use or securing land for local food sourcing.	M	E	£	NQ	**G, E, W**
			9.6.5	Work with a network of community partners through the Greener Futures Climate Delivery Network and others to encourage participation and provide support for community led activities.	O	S	£	NQ	**G**
			9.6.6	Encourage carbon reduction bids to 'Your Fund Surrey' which provides funding for capital projects to reform neighbourhoods.	O	S	£	NQ	**E, H, P, W**
	9.7	Facilitate, support, and encourage industries and academia to explore opportunities to pioneer innovative low-carbon solutions			O	S	£	NQ	E
	9.8	Engage with major businesses to encourage their leadership in tackling climate change, sustainability, ethical solutions, and waste reduction, and showcase good practise.			M	L	£	NQ	E

Guildford Borough Council

Net Zero Carbon Emissions Trajectory

Report

This report has been prepared in July 2022

APSE (Association for Public Service Excellence) is a not for profit local government body working with over 300 councils throughout the UK. Promoting excellence in public services, APSE is the foremost specialist in local authority front line services, hosting a network for front line service providers in areas such as waste and refuse collection, parks and environmental services, leisure, school meals, cleaning, housing and building maintenance.

APSE Energy is APSE's local authority energy collaboration. The vision for the collaboration is to form an "effective collaboration of a large number of local authorities to enable and facilitate the local municipalisation of energy services. By this we mean the public and community, as well as private, ownership and managerial control of local energy generation, supply networks and delivery of energy efficiency works. Local authorities working together in this way would have great influence and would be able to deliver economies of scale in green energy to promote economic growth and combat fuel poverty.

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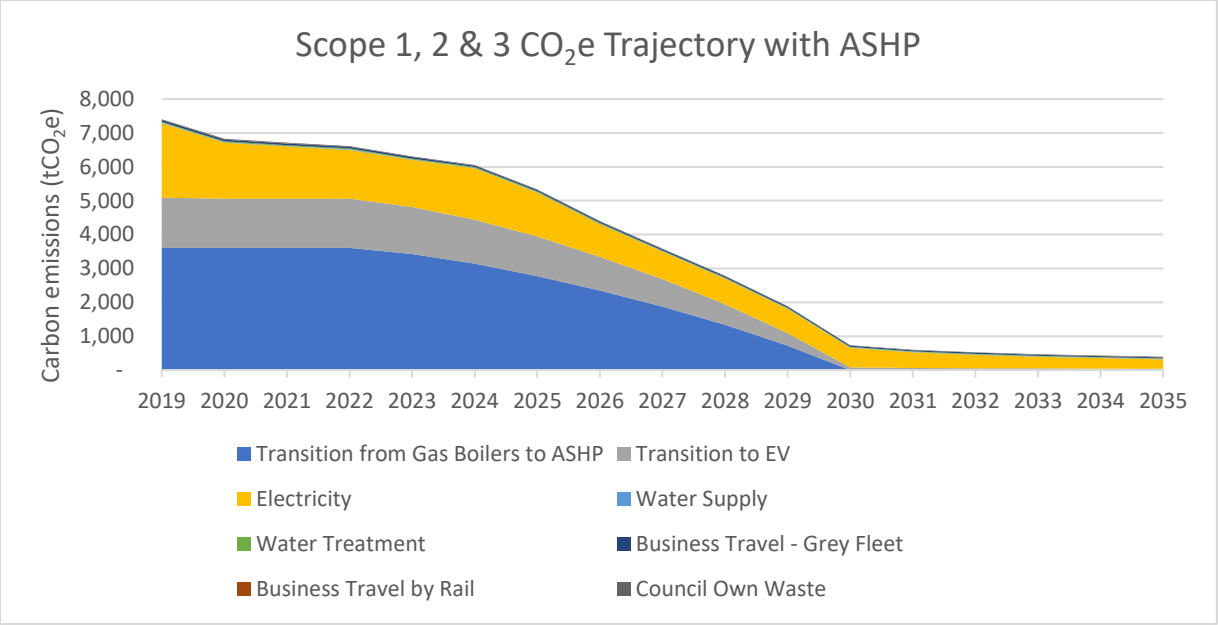
Executive Summary

The 2019/20 baseline carbon footprint from Scope 1, 2 & 3 emissions within Guildford Borough Council's operations are 8,613 tCO_2e. This value is calculated based on emissions factors published by BEIS for 2019.

It is estimated that a financial budget of £32.0million is required to reach net zero carbon (as currently calculated) in the building estate by installing air source heat pumps, being more energy efficient, generating power and developing a tree planting scheme. An additional £26.6million capital is required to upgrade the vehicle fleet to electric and the high cost is largely due to the 43no. refuse lorries. It is estimated that these initiatives will financially benefit the Council by £962,900 annually by 2030.

Chart showing projection of carbon emissions through the Councils Scope 1, 2 & 3 emissions



*Future CO_2 emissions and tariff rates have been taken from the Treasury Green Book supplementary appraisal guidance on valuing energy use and greenhouse gas (GHG) emissions published by BEIS. These emissions factors include transmission and distribution losses, including significant losses due to power station inefficiency meaning that the emissions factors differ slightly to those calculated for the 2019 emissions.

It is estimated that there will be 733 tCO_2e from hard to reduce sources that will be unavoidable by 2030 that will need to be offset, and it is assumed that this can be offset through a 5MW solar farm and a tree planting scheme.

Guildford Borough Council Net Zero Carbon Emissions

1 Introduction

This report provides the findings of the carbon footprint calculations and trajectory towards net zero carbon for Guildford Borough Council which can be used as a benchmark to record current emissions and to track performance against future emissions. The carbon footprint has been undertaken in accordance with best practise guidance by the Greenhouse Gas Protocol and calculated using 2019 conversion factors for the carbon dioxide equivalent (CO_2e) published by the Department for Business, Energy & Industrial Strategy (BEIS).

The council has been recording its carbon emissions since 2008/09, which is the baseline year used as a reference point to track performance. The trajectory baseline year is nominated as the financial year of 2019/20, which is the reference point to base 'current' emissions on and used to forecast the pathway to net zero carbon.

The carbon footprint is categorised into scopes, which cover:

Scope 1 (direct) emissions are from activities owned or controlled by the Council. Examples of Scope 1 emissions include emissions from combustion in council owned or controlled boilers, furnaces and vehicles.

Scope 2 (indirect) emissions are associated with purchased electricity, heat, steam and cooling. These indirect emissions are a consequence of the Council's energy use, but occur at sources that the Council do not own or control. Examples include grid supplied electricity and heat provided through a heat network.

Scope 3 (other indirect) emissions are a consequence of the Council's actions that occur at sources the Council do not own or control and are not classed as Scope 2 emissions. Examples of Scope 3 emissions include business travel by means not owned or controlled by the Council (grey fleet), disposing of the Council's own waste and purchased goods in the supply chain, etc.

Note – we will use the term 'electric vehicles' throughout this report. However there are alternative fuels especially for heavier vehicles such as hydrogen and CNG for those who wish to invest in them. When using the term 'electric vehicles' we are also referring to alternatives which are likely to develop over the period to 2030.

2 Carbon Footprint

2.1 Carbon Reporting Boundaries

The organisational boundaries determine what emission are the responsibility of the Council or others. This can be based on who owns, operates, or exerts control over certain assets. The buildings categorised under Scope 1 & 2 within this reporting are those where energy is purchased or acquired and consumed by the Council. The vehicles categorised under Scope 1 are vehicles that the Council own, lease and operate purely for the Council's own operations.

Scope 3 emissions are classified under 15 different categories as detailed under Appendix C. As Scope 3 emissions are under the influence of the Council, but not under its direct control, it can be difficult to obtain the necessary data to calculate the associated carbon emissions from some Scope 3 sources. One of the larger contributors to carbon emissions is purchased goods and services.

Emissions from assets a company owns and leases to another entity, but does not operate, can either be included in Scope 3 or excluded from the inventory.

Based on the data available in 2020, the emissions involved in this reporting include:

Scope 1 - Direct Emissions
Natural gas used in buildings
Transport fuels (council owned vehicles)
Biomass
Other fuels
Scope 2 – Indirect Emissions
Electricity used in buildings
Scope 3 – Other Indirect Emissions
Gas – transmission emissions
Fuels – transmission emissions
Electricity – transmission
Biomass – transmission
Water Supply
Water Treatment
Business Travel by car
Business Travel by Train
Business Travel by Underground
Waste from Council operations
Recycling from Council operations

The emissions from the above sources represents a good data set for a Council, as it is not uncommon for councils to only have data available for electricity and gas.

There are sources that are missing from the reporting and the largest contributor is likely to be from purchased goods and services, which is generally very difficult to gather data and calculate emissions. This category includes all upstream (i.e. cradle-to-gate) emissions from the production of products purchased or acquired by the Council in the reporting year. Products include both goods (tangible products) and services (intangible products).

Cradle-to-gate emissions include all emissions that occur in the life cycle of purchased products, up to the point of receipt by the Council. Relevant purchases to the Council may include capital goods, such as office supplies, office furniture, computers, telephones, travel services, IT support, outsourced administrative functions, consulting services, janitorial, landscaping services, maintenance, repairs and operations.

The Council should set up procedures to record all emission sources related to its operations for future reporting.

2.2 Carbon Emissions

Appendix A is an Excel spreadsheet that shows a breakdown of the emissions by source. The Council has been calculating its carbon emissions inhouse from 2008/09 (the baseline year) and 2013/14 to 2015/16. APSE Energy have calculated the carbon emissions from 2016/17 to 2019/20. Appendix A shows a summary for the emission for all years and separate tabs showing a breakdown for each source in the most recent year (2019/20), as this is the benchmark year for the trajectory to be net zero carbon by the target year of 2030.

Emissions are calculated as carbon dioxide equivalent (CO_2e), which is a term used to combine the seven most threatening gases that have the highest Global Warming Potential. This includes carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and nitrogen trifluoride.

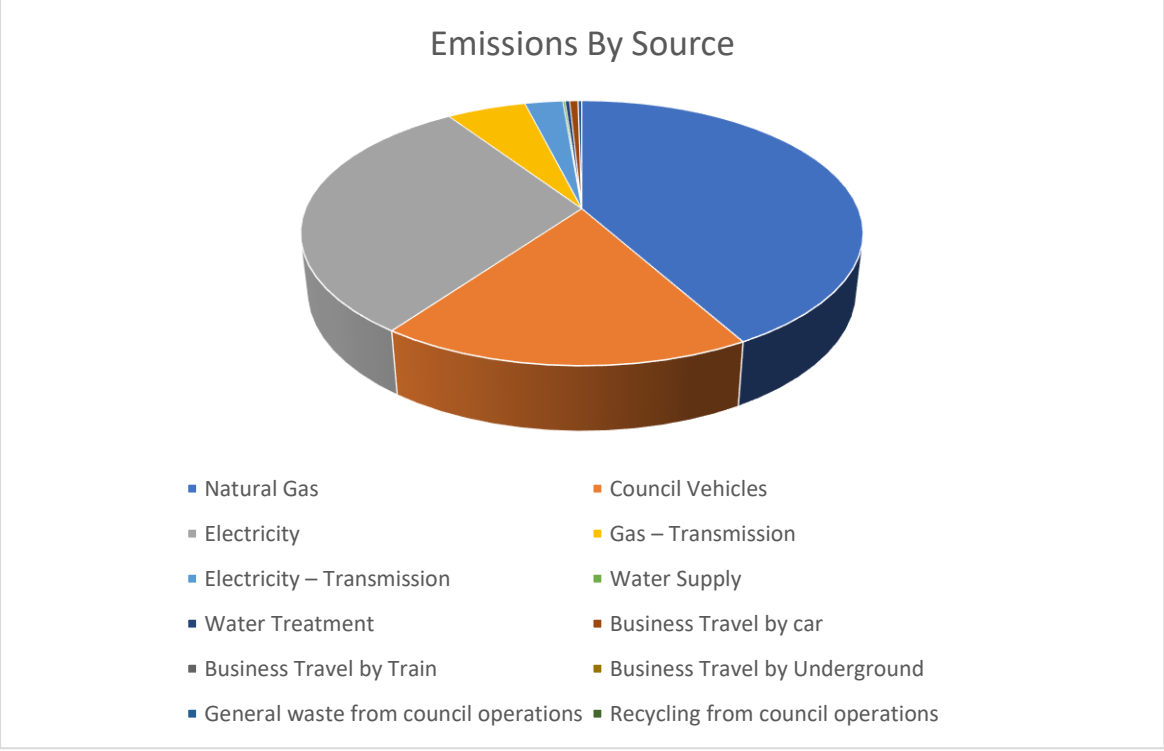
The carbon footprint has been calculated using the best data that was available to the Council during the reporting year and it is the Council's responsibility to confirm the accuracy.

2.3 Trajectory Baseline Emissions for 2019/20

Scope 1, 2 & 3 carbon emissions by source for 2019/20

Emissions Source	Scope	% Split	TonnesCO2e
Natural Gas	1	46.2%	3,607
Council Vehicles	1	19.9%	1,555
Electricity	2	33.9%	2,646
Gas – Transmission	3	6.0%	469
Electricity – Transmission	3	2.9%	225
Water Supply	3	0.2%	14
Water Treatment	3	0.3%	26
Business Travel by car	3	0.6%	49
Business Travel by Train	3	0.017%	1.3
Business Travel by Underground	3	0.002%	0.2
General waste from council operations	3	0.27%	21
Recycling from council operations	3	0.014%	1
Total		**100%**	**8,613**

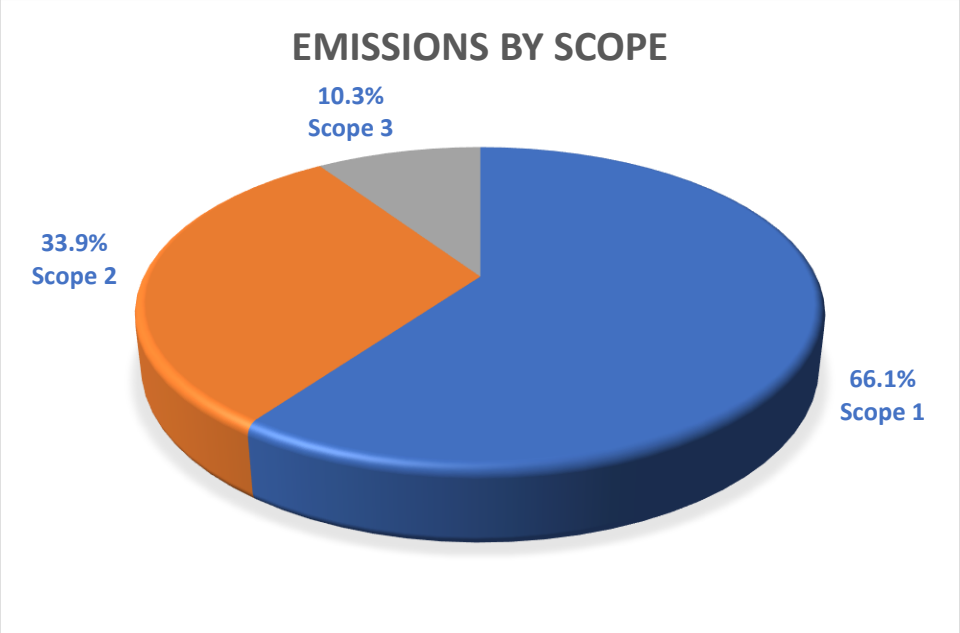
Carbon emissions by source for 2019/20



Carbon emissions by scope for 2019/20

Emissions Source	% Split	TonnesCO2e
Scope 1	66.1%	5,162
Scope 2	33.9%	2,646
Scope 3	10.3%	806
Total	**100%**	**8,613**

Carbon emissions by scope for 2019/20

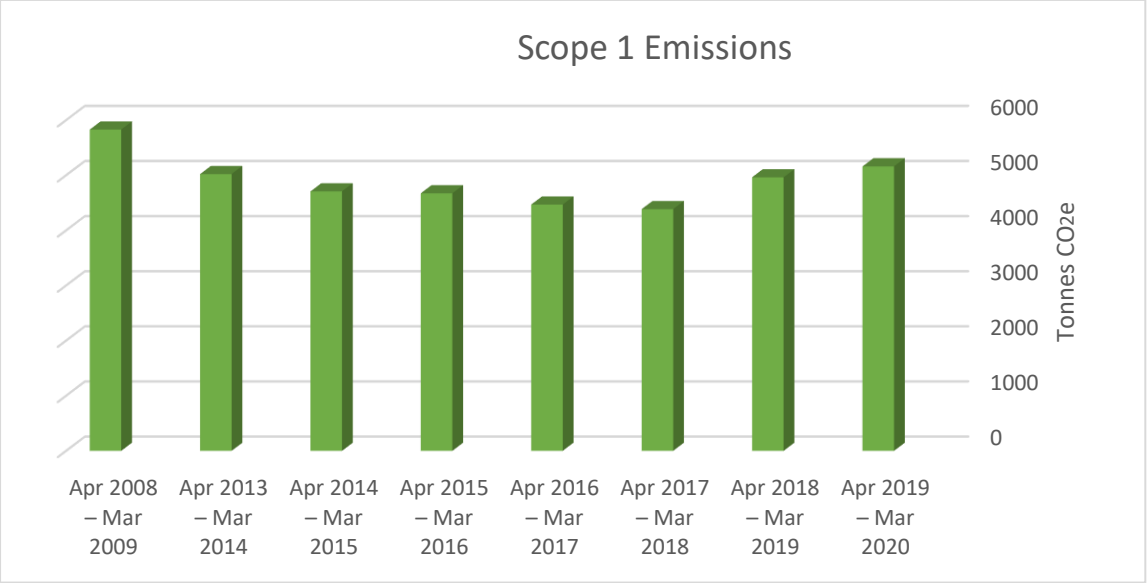


2.4 Carbon Emissions Performance

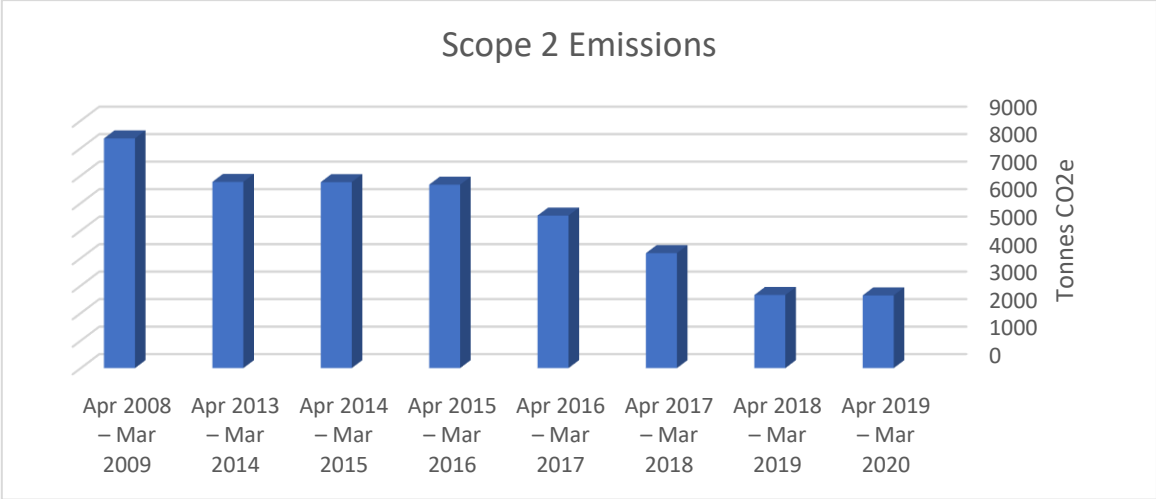
	Tonnes CO_2e							
Emissions	Reporting Year							Baseline Year
	Apr 2019 – Mar 2020	**Apr 2018 – Mar 2019**	**Apr 2017 – Mar 2018**	**Apr 2016 – Mar 2017**	**Apr 2015 – Mar 2016**	**Apr 2014 – Mar 2015**	**Apr 2013 – Mar 2014**	**Apr 2008 – Mar 2009**
Scope 1 - Direct Emissions	**5161.6**	**4963.0**	**4385.7**	**4468.8**	**4673.1**	**4707.3**	**5022**	**5829**
Natural Gas	3606.7	3378.2	2780.9	2811.2	*3051.7*	*3052.8*	*3340.3*	*4161.1*
Transport Fuels (operational)	1554.9	1565.2	1584.5	1631.1	*1499.1*	*1535.3*	*1549.9*	*1595.3*
Biomass (CO_2 outside of scope)	Decommissioned	Decommissioned	2.2	5.0	2.3	1.7	4.5	0
Other Fuels	Decommissioned	19.5	18.1	21.5	120	117.5	127.3	72.6
Refrigerant	Not Available	Not Available	Not Available	Not Available	*Not Available*	*0*	*0*	*Not Available*
Scope 2 – Electricity Emissions	**2645.7**	**2660**	**4182.3**	**5548.05**	**6671.6**	**6763.4**	**6771.5**	**8354.9**
Total Scope 1 & 2 Emissions	**7,807**	**7,623**	**8,568**	**10,017**	**11,345**	**11,471**	**11,793**	**14,184**
Scope 3 – Indirect Emissions	**806**	**859**	**991**	**1,080**	**1345.9**	**1489.4**	**1556.9**	**1510.6**
Gas – transmission emissions	469	443	421	382	*414.3*	*409.8*	*448.4*	*363.4*
Fuels – transmission emissions	*Decommissioned*	5.0	4.1	3.9	*313.5*	*364.8*	*369.9*	*319.6*
Electricity – transmission	225	240	391	502	*500.9*	*591.4*	*592.1*	*601.6*
Biomass – transmission	*Decommissioned*	*Decommissioned*	1.4	3.1	*1.4*	*2.3*	*6.1*	*Not Installed*
Water Supply	14	31	30	27	*57*	*60.6*	*58.1*	*115*
Water Treatment	26	60	58	53				
Business Travel by car	49	55	61	64	*45*	*47*	*67*	*111*
Business Travel by Train	1.31	2.12	2.22	1.60	*2.1*	*1.9*	*1.8*	*Not Available*
Business Travel by Underground	0.17	0.33	0.32	0.34	*0.3*	*0.3*	*0.2*	*Not Available*
Waste from Council operations	*20.87*	*20.88*	*20.94*	*41.40*	*8.5*	*8.5*	*recycling &waste 13.3*	*Not Available*
Recycling from Council operations	*1.13*	*1.13*	*1.15*	*1.11*	*2.9*	*2.8*	*As above*	*Not Available*
Total Gross Emissions	**8,613**	**8,482**	**9,559**	**11,096**	**12,691**	**12,960**	**13,350**	**15,694**
Carbon offset								
Hydro generated and exported	*12.0*	*47.7*	*59.7*	*74.6*	95.7	55.8	86.7	118.5
Total Net Emissions	**8,601**	**8,435**	**9,499**	**11,022**	**12,595**	**12,904**	**13,263**	**15,576**
Further Information								
Out of Scope								
Biomass (outside of scope)	*Decommissioned*	*Decommissioned*	*60.1*	*134.6*	*62.9*	*51*	*133.9*	*Not Installed*
Renewable/CHP CO_2 avoided								
Generated & consumed (CHP)	625	754	CHP not operational	CHP not operational	0	101	531	486
Biomass CO_2 offset					27.4	21.7	56.9	0
Degree Days at 15.5 ^{o}C	1856	1757	1950	1974	1792.7	1885.7	1941.9	2016.8
(an indicator of heat demand)								
Total electricity kWh	10,350,984	9,396,811	11,885,691	13,464,504				
Total gas kWh	19,617,366	18,374,817	15,099,950	15,278,504				
Conversion Factors used above								
Electricity kWh to kgCO_2e	0.2556	0.28307	0.35156	0.41205	0.49636	0.49426	0.49426	0.543
Gas kWh to kgCO2e	0.18385	0.18396	0.18416	0.184	0.18407	0.184973	0.184973	0.206
Diesel litres to kgCO2e					2.661163	2.6024	2.6024	2.63
Gas transmission factor kgCO2e	0.02391	0.02413	0.02785	0.02499	0.02499	0.02483	0.02483	0.1799
Electricity transmission factor kgCO2e	0.0217	0.02557	0.03287	0.03727	0.03727	0.04322	0.04322	0.0390982
Fuels – transmission factor kgCO2e (litres)	NA	0.60122	0.60061	0.58484				
General Refuse to landfill to kgCO2e	99.8	99.8	100.1	199.0				
General Refuse to combustion to kgCO2e	21.4	21.4	21.8	21.0				
Biomass woodchip to kgCO2e	NA	NA	6.1	13.5				

*An Excel version of this table is in Appendix A

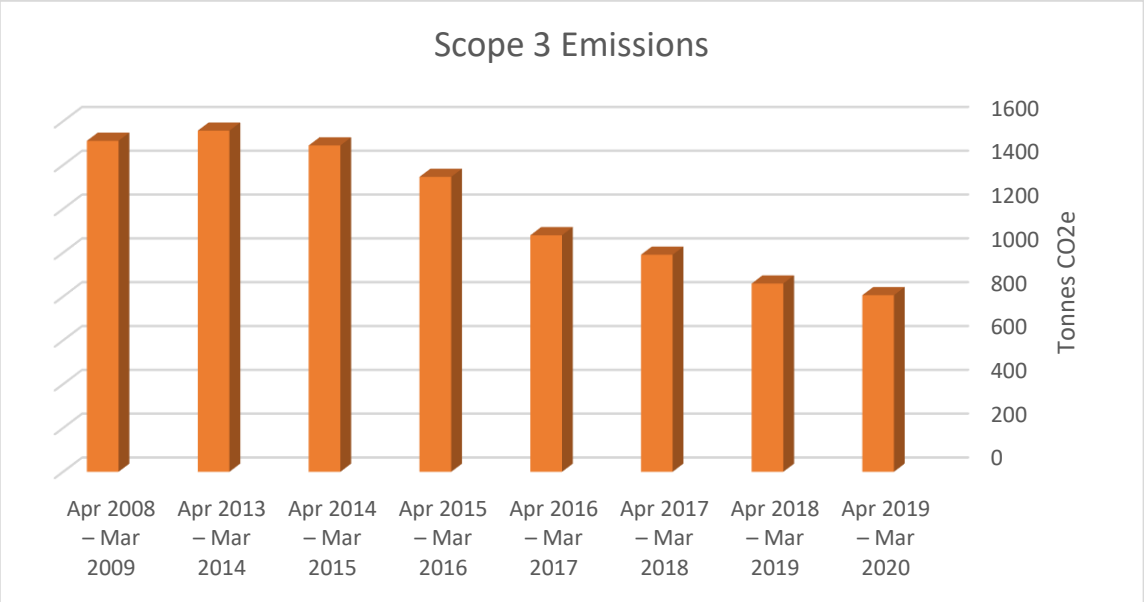
Graph showing Scope 1 emissions between 2008/09 and 2019/20 – This graph shows that there has been an overall reduction in emissions since 2008/09 and emissions have reduced by 11%, although the emissions have increased over the last two years. The increase largely seems to be due to a significant increase in gas usage at the Spectrum which is assumed to be attributed to an increased use of the Combined Heat and Power (CHP) plant.



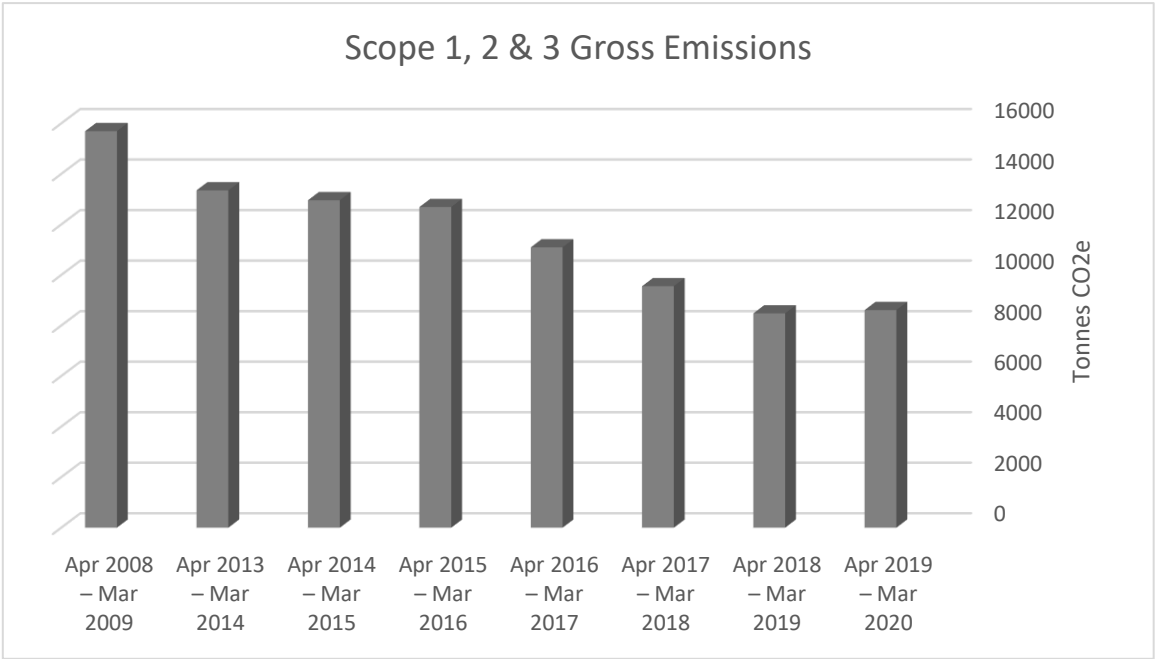
Graph showing Scope 2 emissions between 2008/09 and 2019/20 – This graph shows that there has been a steady decrease in emissions since 2008/09 and emissions have reduced by 68%. The emissions carbon factor of grid supplied electricity has decreased by 53%, so if the electricity usage had stayed the same over the term the carbon emissions would reduce by this value.



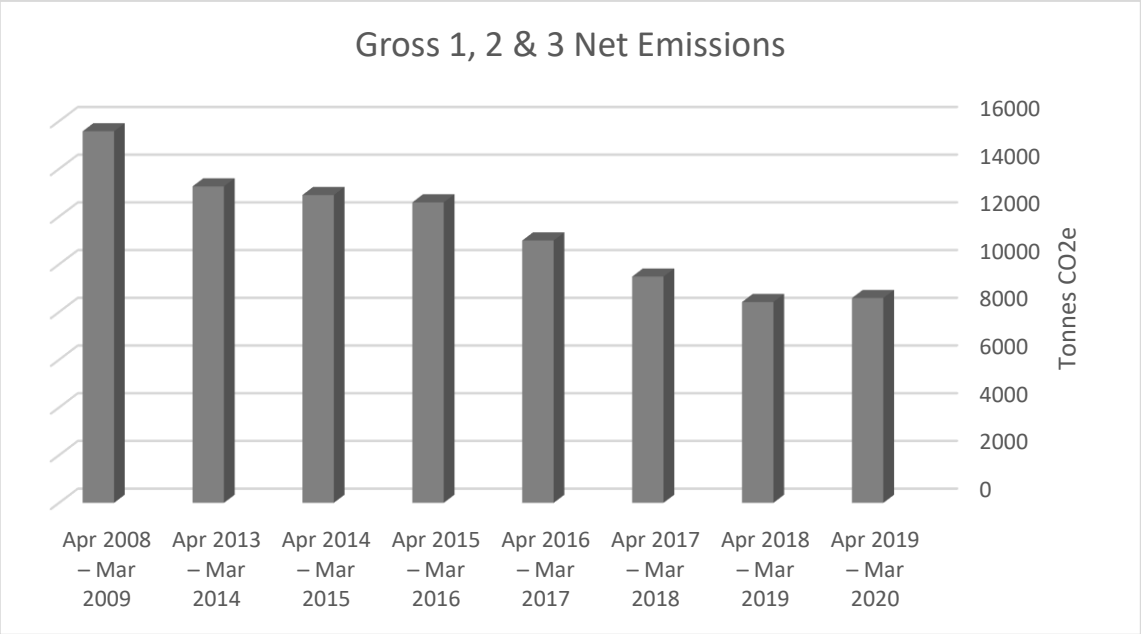
Graph showing Scope 3 emissions between 2008/09 and 2019/20 – This graph shows that there has been a steady decrease in emissions since 2008/09 and emissions have reduced by 47%.



Graph showing Scope 1,2 & 3 gross emissions between 2008/09 and 2019/20 – This graph shows that there has been a steady decrease across Scope 1, 2 & 3 emissions since 2008/09 where emissions have reduced by 45%.



Graph showing Scope 1,2 & 3 net emissions between 2008/09 and 2019/20 – This graph shows that there has been a steady decrease across Scope 1, 2 & 3 net emissions since 2008/09 where emissions have reduced by 45%. The net emissions are the gross emissions less the carbon offset measures.



It is recommended that a detailed analysis is taken place of the consumption data over the last two years to fully understand why energy usage has increased. An initial investigation shows that the energy usage at the Spectrum has increased. The energy increase could be for several reasons such as errors in the energy data, an increase in gas usage due to using the CHP, longer operational hours, increased services, deterioration in building controls, etc. As the Spectrum is the Council's largest single energy user, an increase in energy usage can make a significant impact on overall emissions.

3 Notes and Observations

Scope 1

Mains Gas

Gas usage data has been provided by both Total Gas and Power and LASER. There is a discrepancy between the kWh usage between the two and a sense check identified that some data was missing from the TGP file. Therefore, the gas data from LASER was used.

Biomass

Biomass fuels are often referred to as being carbon neutral because the amount of carbon emitted during combustion is equivalent to the amount of carbon that is absorbed as part of photosynthesis during the lifetime of the plant.

Within the Scope 1 conversion factors for biofuels, the CO_2 emissions value is set as net '0' to account for the CO_2 absorbed by fast-growing bioenergy sources during their growth. The Scope 1 conversion factors presented in this listing contain values for nitrous oxide (N_2O) and methane (CH_4) emissions (which are not absorbed during growth).

The biomass boiler was decommissioned in 2018.

Council Owned Vehicles

Data was provided for fuel consumption as below:

- Dsl – Recorded as standard diesel bought from any local filling station.
- Unl – Recorded as standard petrol bought from any local filling station.
- Goil - Medium oil used in diesel engines and heating systems (also known as red diesel). The main uses for gas oil are as an off-road fuel, power generation fuel and in heating applications.

The gas oil has been recorded under vehicle usage and is assumed to be for off road vehicles, but if it is used for power generation in generators, or heating, then it will need to be reclassified accordingly.

The fuel usage for Waste Ops (assumed to be refuse vehicles) is much higher than the rest of the fleet combined. The distance travelled, and fuel consumed is expected to be high for refuse vehicles, and this makes up 64% of the total fuel used across all vehicles.

Other Fuels

Delivery details have been provided for Kerosene. The carbon conversion factors for 'fuel oil' have been applied.

There is no data for 2019/20 as Burpham Court Farm buildings were sold in 2018 and Midleton Industrial was demolished in July 2020.

Scope 2

Electricity

Carbon emissions were calculated from the electricity usage as provided by LASER, who procure the Council's energy data on their behalf. A spot check showed that there were some discrepancies between the consumption data provided by the supplier (Npower), LASER and the half hourly data which records the sites electricity usage every half hour through the electricity meter. A sense check should be carried out to monitor all sources of energy use and cross reference to identify any anomalies and to raise with the relevant third party to rectify any issues so that consumption data, and billing, is aligned and correct.

Scope 3

Water

Consumption data has only been provided for the water supply and not the Return to Sewer (water treatment) element. The volume of water that is supplied and returned to the sewer is typically estimated to be 95%. However, this is not always the case if the premises uses water for other purposes such as irrigation, etc.

As water treatment data was not available an assumption has been made that this element is 95% of the water supply volume. For future reporting, the Council should source data directly from the wastewater company to get more accurate data. This is particularly prominent, as the carbon emissions associated with wastewater are twice as high as water supply.

Selected sites have the water consumption as a negative figure, which is likely to be due to billing credits. The associated carbon emissions from these sites have been recorded as not applicable (NA).

Emissions from water consumption is not included within the GHG Protocol, but emissions from wastewater are. Following the principle that as much data should be collected as possible, APSE Energy recommends that emissions from water should be included within the reporting for the Council as water consumption has associated carbon emissions and an environmental impact. Including water consumption helps to keep it on the environmental agenda and prioritise it with other categories by converting usage into a standardised unit of CO_2e.

Business Travel by Staff Owned Car

There is a single electric vehicle in the grey fleet. The transmission and distribution factor has been added to the main emissions rather than separated as this is a single vehicle and negligible. This element should be separated in future carbon reporting as more electric vehicles are used.

Two vehicles have been recorded as using 'Euro IV Diesel'. For carbon conversion purposes, this has been recorded as Urea, also known as AdBlue.

Business Travel by Rail

In most cases, the recorded distance travelled for National Rail and the London Underground is provided as an average per trip so that all train journeys are recorded to be 53 miles long and all underground journeys are recorded as being 14 miles long. In subsequent years, the actual distance travelled for each journey should be recorded and reported.

Waste

Specific waste data is not available from 2016 to 2020 and an average and equal volume of waste has been applied across all years based on a sample of weekly collection figures. The carbon emissions of waste across years changes because of the carbon emissions factor, rather than the volumes of waste.

The carbon conversion factor for General Refuse to landfill is twice as high in 2016/17 compared to the other reporting years. BEIS were contacted to query this and the response stated that 'Jumps in the Conversion Factors for waste disposal can occur between years due to more relevant/up to date/accurate data becoming available'. However, this does not explain why there is such a high variation.

Refuse waste has been categorised under 'Commercial and Industrial Waste' for carbon conversion purposes. This has been assessed assuming that 95% of the refuse waste goes to an Energy from Waste facility and the remaining 5% goes to landfill.

The waste associated with sites managed by Freedom Leisure have not been included as this is managed by the third party. However, the electricity and gas from these sites is included under Scope 1&2 as the Council pay for the fuel.

Carbon Offsetting

Electricity that is generated locally and exported to the gird is considered a carbon offset as the Council do not directly benefit from using the electricity onsite. Power generation would be a direct carbon saving if it were used on site as this will mean that less grid supplied electricity will be used.

Exported electricity is accounted as an emissions reduction against the gross figure to report a net figure in tonnes of CO_2e. This net figure is additional to the gross figure and does not replace it.

Hydroelectric

All the electricity generated from the hydro-electricity plant is exported to the grid. The grid average emissions factor is used to calculate the emissions which are considered as an offset as the generated electricity is not used by any council owned assets. It is understood that consideration is in place to provide a private wire to connect the hydroelectricity to Council owned buildings which should reduce electricity costs and carbon emissions.

Solar Photovoltaics (PV)

The total generation from solar panels includes sheltered housing blocks. It was highlighted that these sites were excluded from previous GHG (CRC) reporting as these are classed as domestic.

A spreadsheet was provided showing a summary of electricity generated from PV. It was explained by the Council that all power generated at these sites was exported to the grid and not used on site. In a typical setup where PV is installed on the roof of a building, the generated power would be used by the buildings day-to-day operations and any excess generated electricity (when the generated electricity is higher than the building load) is exported to the gird. For most commercial premises, the exported electricity is minimal or nothing as the building typically uses more electricity than is generated.

If the electricity is used on site, and not exported to the grid, then this is not counted as a carbon offset and should not contribute towards the net emissions as this is already taken into account from the buildings electricity usage and this would be double counted. A new entry on the Carbon Summary table should be created under 'Renewable/CHP CO_2 avoided' to account for PV generated electricity used on site.

It is recommended that firm confirmation is provided on how much PV electricity is used on site and how much is exported.

Further Notes and Observations

The bottom section of the Carbon Summary shows further information that was used in each reporting year such as a summary of annual energy usage (kWh), avoided CO_2 from renewables, degree days (see Glossary) in each year and a summary of conversion factors.

The carbon savings associated with the CHP at The Spectrum are taken from the offset of producing electricity on site and does not include the heat. This is because the heat produced is associated with the gas used by the CHP. The CO_2 savings are shown for information and have not been included separately under the gross or net emissions as this is already accounted for under the sites main metering consumption.

Degree day data has been sourced from a weather station located at Gatwick Airport.

Billing from LASER shows that the Council are responsible for 299 electricity meters, which provides a reasonable representation of how many assets the Council operate. A review should be carried out of each asset to determine if the Council are responsible for paying the electricity and gas usage and taking ownership for the associated carbon emissions. It is not uncommon for assets to be sold, leased or decommissioned yet the Council continue to pay for the utilities.

Further details are required of the vehicle make, model and size as this will help develop the action plan in more detail.

There is a line in the Carbon Summary table for 'Biomass CO_2 Offset', which has been populated between 2008/09 and 2015/16. After much deliberation with the Council, it was inconclusive about what this was reference to as emissions from biomass are identified under Scope 1 and the Council has not engaged in any planting schemes that could be considered an offset.

4 Recommendations for Gathering Data Going Forward

4.1 Scope 1 and 2 Emissions

The Council should develop a procedure for gathering and storing data as it is made available. The benefit of this is that the carbon reporting process is streamlined and progress towards targets can be tracked. The Council already has SystemsLink

software in place which should be utilised to store all energy data so it is readily accessible.

4.2 Scope 3 Emissions

Scope 3 emissions can account for 70-80% of a council's total footprint (Carbon Trust), given the use of contractors for waste collection, construction, social services and other services.

Appendix C shows the 15 different categories of Scope 3 emissions and what data should be gathered to report on emissions in future years. Where applicable, the Council should develop policies/procedures to gather the data from third parties. This should be incorporated into the procurement process and contracts with suppliers.

It is discretionary for an organisation to report on Scope 3 emissions. It should be explained and documented in subsequent carbon reports if the Council is unable to obtain data for any of the items below as it is deemed financially impractical or not significant. The reporting principles should be based on:

- Relevance;
- Completeness;
- Consistency;
- Transparency;
- Accuracy.

Emissions data that should be improved in subsequent years includes waste. Policies should be put in place to start recording waste data. This could be through contractual changes i.e. waste contractor weighing and recording waste type, or the Council can measure its own waste. There are tracking sheets from WRAP to monitor waste streams and these could be used in the short term until the waste contractor can record it.

Purchased goods and services could also be included under Scope 3 as this will represent a high level of emissions down the supply chain. However, obtaining this data from third parties may prove difficult and the Council should assess what relevant goods and services could be recorded in subsequent years.

5 Pathway Methodology

5.1 Energy Efficiency

Appendix B shows generic measures that could be taken to reduce energy usage from the 2019/20 baseline emissions. This is a desktop assessment based on the consumption data and typical saving initiatives and is not based on site specific information. Estimated energy savings and forecast capital costs shown are for representative purposes to give an illustrative outcome and should not be used for budgeting purposes.

The Council should be able to achieve significant carbon and cost savings by reviewing its maintenance policies to specify highly efficient plant and services, and electric vehicles, rather replacing like-for-like. Changing policies to specify materials with low embodied carbon should also reduce Scope 3 emissions by considering the carbon life cycle cost in terms of the supply chain, operation and decommissioning.

It is recommended that a detailed audit and feasibility study is carried out for all assets to determine the site-specific initiatives. This will provide an indication of the realistic interventions that could be provided and the likely cost savings, capital cost and carbon savings.

The following assumptions have been made which can be updated once more information is available:

- Future CO_2 emissions and tariff rates have been taken from Treasury Green Book supplementary appraisal guidance on valuing energy use and greenhouse gas (GHG) emissions published by BEIS. These emissions factors include transmission and distribution losses, including significant losses due to power station inefficiency meaning that the emissions factors differ slightly to those calculated in Section 2.
- BEIS have not published future CO_2 emission factors for natural gas. Although it is likely that the carbon emissions factor of gas will decrease as non-fossil fuel gases are injected into the grid, such as hydrogen, the applied emissions factor of gas in this pathway was constant.
- The energy costs are calculated using the retail fuel price which includes the Climate Change Levy but excludes standing charges that are not directly impacted by consumption fluctuations.
- The intervention capital cost is calculated by multiplying the typical payback of the intervention by the annual energy cost savings.
- Not all interventions are applicable to each site e.g. replacement lighting is the only intervention that is assumed in car parks.
- The Council has provided a list of where projects have already been delivered, such as LED lighting, and this has been taken into account under the recommendations.
- The pathway is based on current technology available today and assumes that all interventions could be delivered by 2030.

5.2 Interventions for Reducing Gas Usage (Heat)

Generic interventions for heating (gas usage) include:

Intervention	Saving on Heat Demand	Payback in Years	Detail
More efficient plant	20%	8	Could include new CHP or boilers
Controls	15%	5	Could include a new or optimised BMS for larger sites and controllers and TRVs for smaller sites
Insulation	15%	5	Could include building fabric insulation, draught proofing, pool cover and pipework insulation
Other	15%	5	Could include more efficient heat emitters, heat recovery and distribution improvements

It should be noted that savings from these interventions have been calculated concurrently rather than independently i.e. each intervention reduces the heat demand following on from the previous intervention. For example:

- 100kWh less 20% saving from more efficient plant = 80kWh >
- 80kWh less 15% saving from controls = 68kWh >
- 68kWh less 15% saving from insulation = 58kWh >
- 58kWh less 15% saving from 'other' = 49kWh
- Total reduction = 51%

5.2.1 Heat Pumps

Using heat pumps is a good initiative for heating systems because the carbon factor of electricity will reduce as the grid is decarbonised and due to their efficiency and Coefficient of Performance (COP). For a heat pump, a COP value of 3 means that 1kW of electric energy is needed to generate 3kW of heat.

It is assumed that heat pumps by themselves will not be financially viable across all sites by 2030 based on today's cost and current technology. This is because the existing boilers distribute heat at around 80°C and heat pumps distribute heat at around 50°C. In most cases, it is assumed that the cost to retrofit an existing site with a heat pump and the associated

infrastructure would be disproportionate compared to the benefits unless financial incentives are used such as the Renewable Heat Incentive or grant funding as with the Public Sector Decarbonisation Scheme. A detailed feasibility study is required for each building to review the viability of low carbon heating.

The total carbon emissions from gas (heat) below up to 2030 does not include any heat pump systems. Heat pumps may be suitable in buildings or hybrid systems could be feasible where there is a combination of heat sources however, this cannot be determined from a desktop investigation at this stage.

The pathway has been based on current technology and pricing. It is likely that changes in technology will mean that options for more low carbon heating systems will be available by 2030.

For reference purposes, if all gas heating systems were replaced with heat pump technology with a COP of 3, the carbon emissions in 2030 would change from **1,772 tCO_2e for gas plant to 157 tCO_2e for electric heat pumps**.

5.3 Interventions for Reducing Electricity Usage

Generic interventions for electricity include:

Intervention	Saving on Electricity Usage	Payback in Years	Proportion of building services	Apportioned saving across whole building	Detail
LED Lighting and Control	60%	5	33%	20%	Replace existing luminaires with LED and automatic control
Controls and HVAC	15%	5	41%	6%	Controlling building services with a BMS
Office Equipment	15%	5	15%	2%	Replacing aging equipment with more efficient equipment
Other	15%	5	11%	2%	Could include variable speed drives, motors, hand dryers

*Building information sourced from the Chartered Institute of Building Services Engineers (CIBSE)

Savings from these interventions have been calculated independently from the total electricity usage and their estimated proportion to building services e.g. lighting is assumed to account for 33% of all electricity usage in a building and a potential saving of 60% could be achieved from installing LED lighting and control which leads to an apportioned whole building saving of 20%.

A change in policies to upgrade existing building services to the most efficient option through planned maintenance, and upgrading fossil fuel vehicles with electric when they are due to be replaced, will impact the action plan significantly.

5.4 Project Phasing

Projects have been programmed to start in 2023 and end by 2030, with the delivery of projects ramping up each year. This is shown in the table below:

	2023	2024	2025	2026	2027	2028	2029	2030
Percentage of Projects Delivered Per Year	5%	8%	10%	12%	12%	13%	17%	20%

There is a draft plan to ban the sale of all new petrol and diesel vehicles by 2030, so it is possible that the transition away from fossil fuel vehicles may happen sooner.

6 Achieving Net Zero Target of Council Emissions

A “net zero” target refers to reaching net zero carbon emissions by the nominated year of 2030, as chosen by the Council, but differs from zero carbon, which requires no carbon to be emitted at all.

Net-zero refers to balancing the amount of emitted greenhouse gases with the equivalent emissions that are either offset or sequestered through rewilding and tree planting or carbon capture and storage. It is much more beneficial to reduce carbon emissions and offsetting techniques can be used for hard to reduce emissions.

6.1 Power Generation

It is assumed that solar PV could be placed on selected buildings with a generation capacity of approximately 500kWp generating 475MWh per year of electricity that could feed directly into council buildings, with no units exported to the grid. It is suggested to install 150kWp to the Civic Offices and a carpark over the next year.

The trajectory also assumes that 5MW of land-based PV can be installed up to 2030 which will count towards carbon offsetting. This is considered a carbon offset as it is assumed that

the system will connect directly to the electricity grid rather than connect directly to council owned buildings through a private wire.

6.2 Transport

A detailed feasibility study is required to determine a more accurate projection for replacing the vehicle fleet with electric vehicles.

Data provided categorised vehicles into several different vehicle types such as refuse, gritter, plant, van, etc. Further information on the vehicle make, model and size would provide a more accurate projection.

Savings in emissions do not consider vehicle efficiency improvements between 2020 to 2030 as a more detailed analysis is required to assess this.

The kWh/mile of electric vehicles and their cost to purchase have been categorised as below:

Vehicle	kWh/mile	Cost	mpg of Vehicle
Car	0.29	£24,000	64
Small van	0.33	£20,000	53.3
Medium Van (based on Volkswagen ABT eTransporter 6.1 panel van)	0.45	£42,000	53.3
Ride on mower	2.41	£6,500	4.5
Refuse lorry (based on Cambridge City Council)	2.41	£375,000	4.5

No information could be found on the performance or cost of an electric road sweeper, tractor or gritter. The specification of a refuse lorry has been used for the performance and cost of the tractor and a gritter and sweeper have been based on a medium van. It should be noted that the cost and performance of these vehicles can range significantly depending on the vehicle type, size and specification particularly around battery size. It is possible that these types of vehicles may still be too specialist before 2030 to make them commercially viable and it is possible that fossil fuels, or low carbon fuels like hydrogen, may still be required for these vehicles. Also, these vehicles are unlikely to be used throughout the year and may sit idle so it could be considered to use their batteries as storage to gain a better return.

Savings in emissions do not consider vehicle efficiency improvements between 2021 to 2030 nor the likely reduction in cost to purchase electric vehicles. A more detailed analysis is required to asses this.

6.2.1 Employee Vehicles
The trajectory assumes that staff vehicle usage will reduce by 5% per year compared to the 2019/20 baseline. It is unrealistic to expect all staff to replace their own vehicle with an EV by 2030, so a combination of interventions would be required such as providing EV pool cars, bicycles and encouraging staff use of public transport.

6.2.2 Business Travel by Rail
The current carbon emissions from rail and underground are 1.5 tonnes and make up 0.02% of the total emissions i.e. very low. BEIS have not published future emissions factors for rail but it is anticipated that the number of trips via rail will be similar to the current usage up to 2030, but the emissions should reduce slightly as the electricity grid is decarbonised. As the emissions are already low, the trajectory assumes that carbon emissions from rail travel will not change over the term.

6.2.3 Water Supply and Wastewater
Water supply and wastewater combined account for 0.6% of the total emissions and 41tCO_2e. However, simple measures can be taken to reduce water usage and cost such as installing low flow appliances and fixing leaks.

It has been assumed that emissions from water supply and wastewater will reduce by 5% annually.

6.2.4 Transmissions and Distribution
This has not been accounted for separately as the forecast carbon conversion factors provided by BEIS include losses from transmission and distribution.

7.0 Net Zero Trajectory to 2030

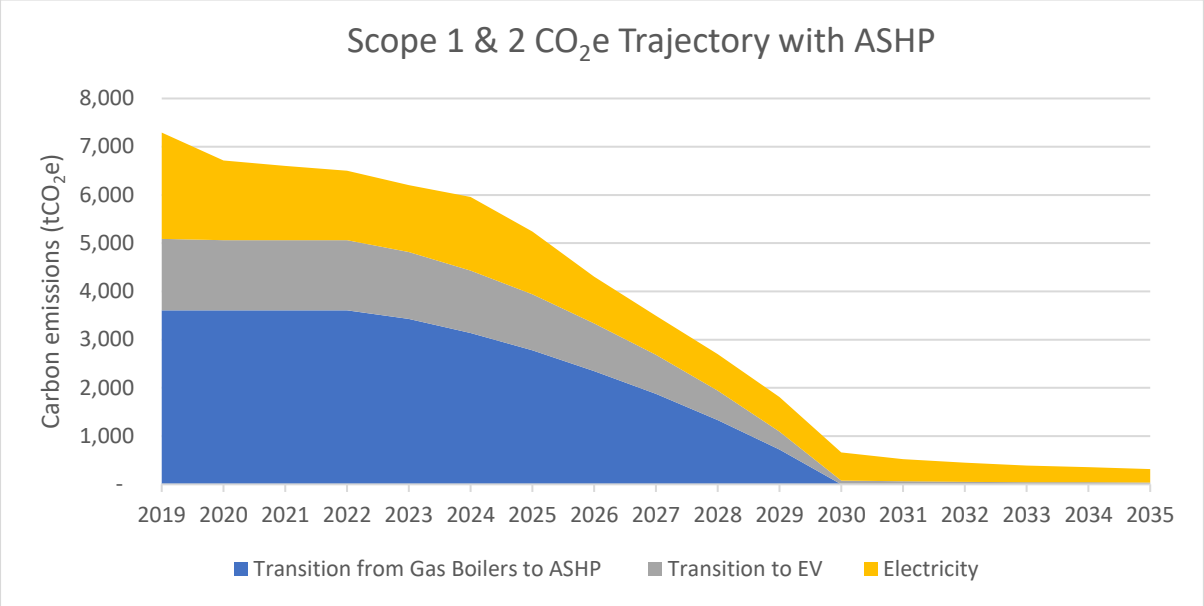
Carbon Emissions Trajectory 2019 to 2030

Future emissions data was taken from the Treasury Green Book supplementary appraisal guidance on valuing energy use and greenhouse gas (GHG) emissions.

A breakdown of the year-on-year carbon savings can be found in Appendix B.

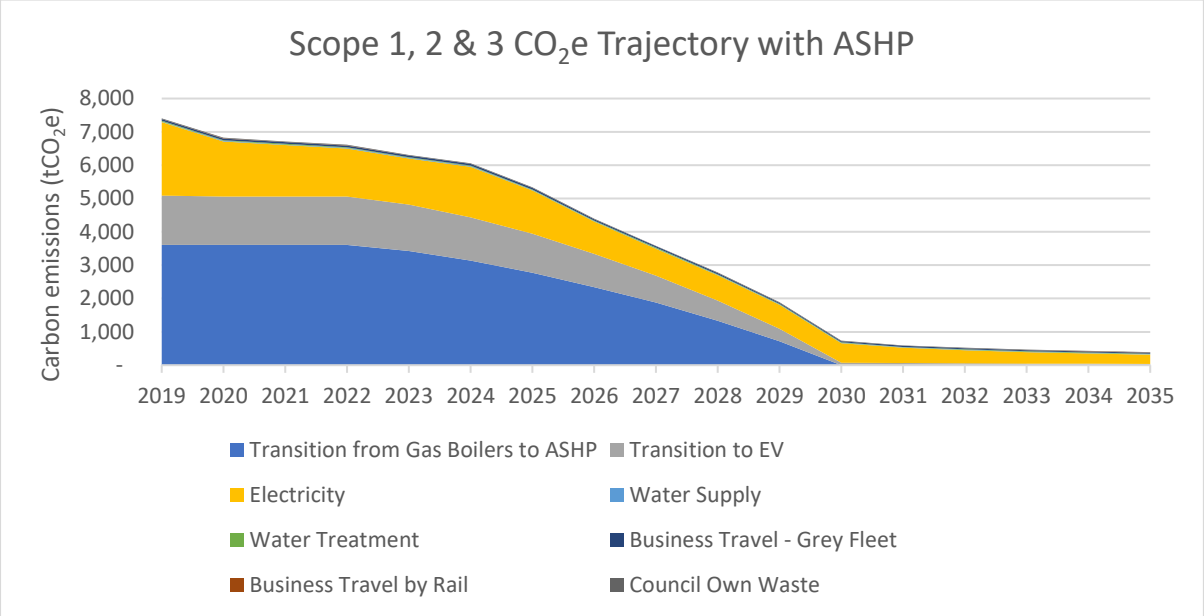
The graph below shows the Scope 1 and 2 carbon emission trajectory if the Council improved energy efficiency, replaced the boilers with ASHP and transitioned to electric vehicles.

Carbon Emissions Trajectory 2020 to 2035 with ASHP



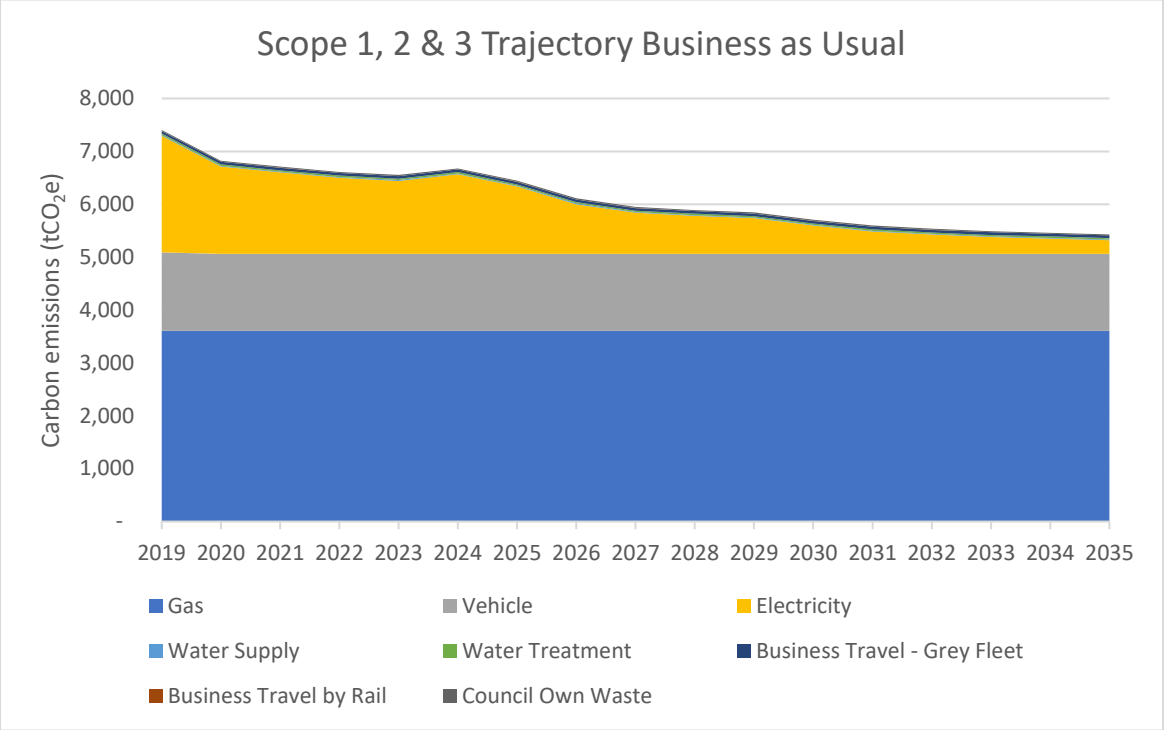
The graph above shows the carbon savings when installing heat pumps and removing gas boilers entirely by 2030. This is a carbon saving of 91% compared to 2019/20 if replacing gas boilers with ASHP.

Carbon Emissions Trajectory 2020 to 2035 with ASHP for Scope 1, 2 & 3



The trajectory in the graph above shows that there are 733tCO_2e that are unavoidable up to 2030 if boilers are replaced with ASHP. This is the amount of carbon that will need to be offset to balance the emissions that cannot directly be removed based on current technology and within a reasonable budget.

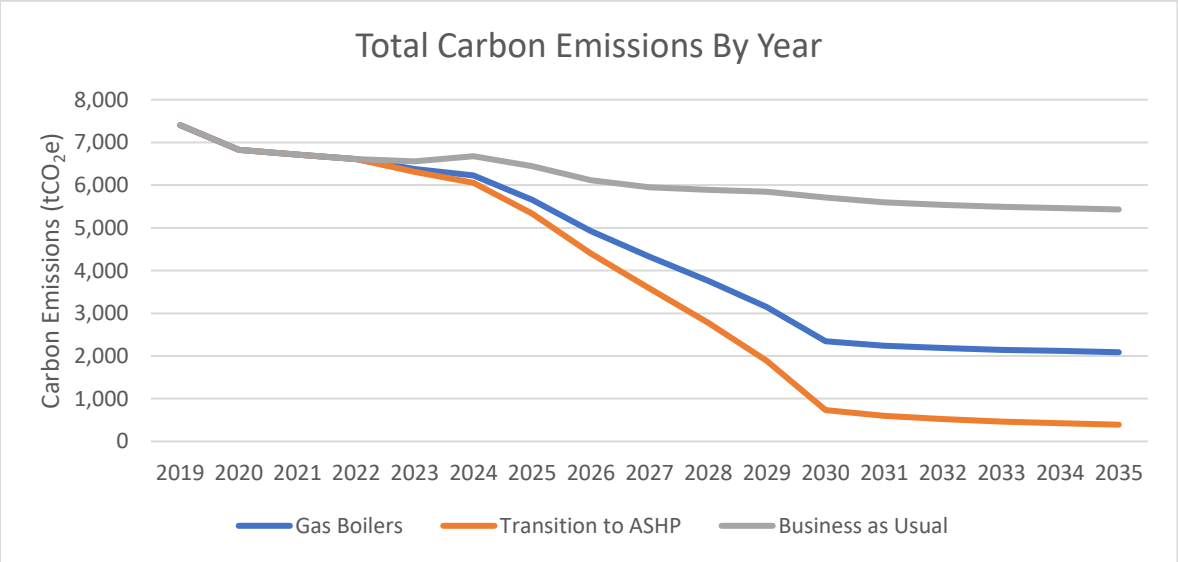
Business as Usual Carbon Emissions Trajectory 2020 to 2035 with No Interventions



The table above shows the trajectory if no interventions were delivered, and the amount of energy used by the Council is the same across the term. There is a decrease in electricity carbon emissions as the grid decarbonises which is shown in electricity, but emissions from other sources barely change. By doing nothing, the carbon emissions in 2030 will be 5,708tCO_2e.

7.1 Boiler vs. Heat Pumps

Carbon Emissions Trajectory 2019 to 2035 comparing Heating by Gas Boilers and ASHP Emissions



The "Transition to ASHP" line in the graph above includes those interventions to improve efficiencies by improving controls and insulation and replacing existing gas boilers with ASHPs. The graph shows that there is a significant reduction in emissions if all boilers are replaced with heat pumps.

It is therefore the recommendation that all boilers are replaced with heat pumps.

7.2 Offsetting when Installing ASHP

A carbon offset is a reduction in emissions of CO_2e made to compensate for emissions made elsewhere. There are several ways of offsetting carbon emissions such as carbon capture and storage however, this is not deemed financially or technically feasible to the Council. More typical options available to the Council to directly offset emissions include renewable energy generation projects and rewilding/tree planting. However, the effectiveness of tree planting to quickly offset emissions can be questioned as it can take many decades for trees to reach maturity.

It is assumed that solar PV could be placed on land with a generation capacity of approximately 5MWp generating 4.75GWh of electricity that feeds directly into the electricity grid. This could include open space, car parks, etc.

A 5MWp system would have a capital cost of approximately £4,500,000 and would offset $245tCO_2e$ per year by 2030 and $118tCO_2e$ per year by 2035. This demonstrates that the carbon offset benefits of a 'solar farm' decrease as the grid decarbonises.

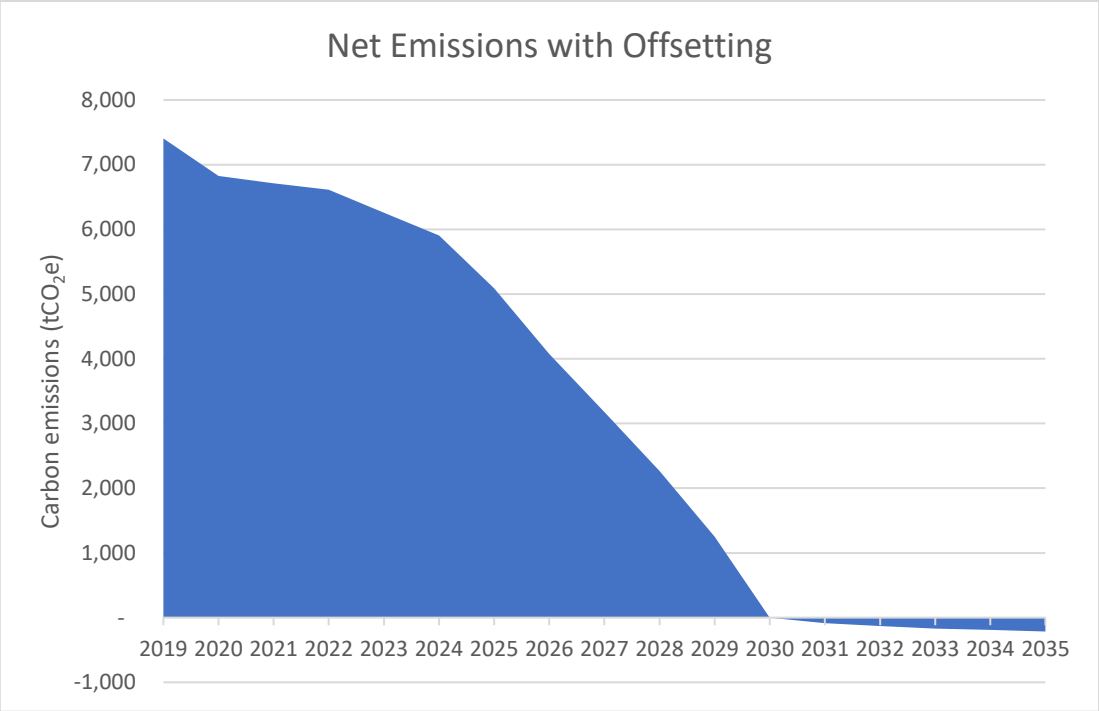
The installation of 5MWp PV would leave $488tCO_2e$ of unavoidable emissions by 2030 that will need to be offset. The Woodland Trust states that it costs £25 to offset 1 tonne of CO_2 in British woodlands which would result in a cost of £12,200 to offset the remaining emissions per year.

There are other schemes that provide carbon offsetting through international planting schemes such as One Carbon World which contributes funding towards large scale forestry schemes for as much as £1.20/tCO_2e.

A detailed feasibility study is required to determine the impact that planting will have as a carbon sink. It will provide an understanding of what will be needed to ensure that mature trees are in place to absorb the appropriate amount of CO_2 by 2030.

The graph on the next page shows the pathway for net zero carbon which includes reducing carbon initiatives and installing ASHP combined with offsetting measures. The graph shows that the Council will be net zero in 2030 and net carbon positive in subsequent years if the same level of offsetting is applied year-on-year.

Carbon Emissions Trajectory to 2035 with Carbon Offsetting and ASHP



7.3 Forecast Capital Cost with ASHP

Investing in energy efficiency projects and power generation will, in most cases, have a positive financial benefit with a good return on investment. The Council should set its own guidelines on a cap for ROI to measure the viability of projects.

Grid supplied electricity and gas rates are taken from BEIS modelling published in October 2021[1]. Market conditions have changed drastically since this time for several reasons, but largely due to the war in Ukraine. It is therefore likely that the forecast energy rates provided are outdated, but this was still the best source to use at the time of writing.

The future grid export rates are based on the current price and increased by 2.5% annually.

[1] https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal

Forecast Capital Cost and Financial Savings from Initiatives including ASHP

Intervention	Cost of all interventions	Accumulative cost saving up to 2030	Total annual saving of all interventions in the year 2030	Accumulative CO2e Savings by 2030	Accumulative £/CO2e Savings by 2030
Transition from Gas Boilers to ASHP	£25,803,900	£2,658,800	£745,490	13,238	£1,949
Transition to EV Accumulative Savings	£26,599,500	£96,200	£33,302	5,234	£5,082
Electricity Saving from energy efficiency	£1,185,700	£890,600	£241,574	12,260	£97
Electricity Increase for transition to ASHP	£0	-£1,641,900	-£445,395	-821	N/A
Building PV (500kWp by 2030)	£450,000	£255,500	£69,318	128	£3,524
Land Based PV (5MWp by 2030)	£4,500,000	£1,115,300	£318,613	11,567	£389
Tree Planting	£12,201	N/A	N/A	1,791	£7
Total	**£58,551,301**	**£3,374,500**	**£962,900**	**43,396**	**£11,048**

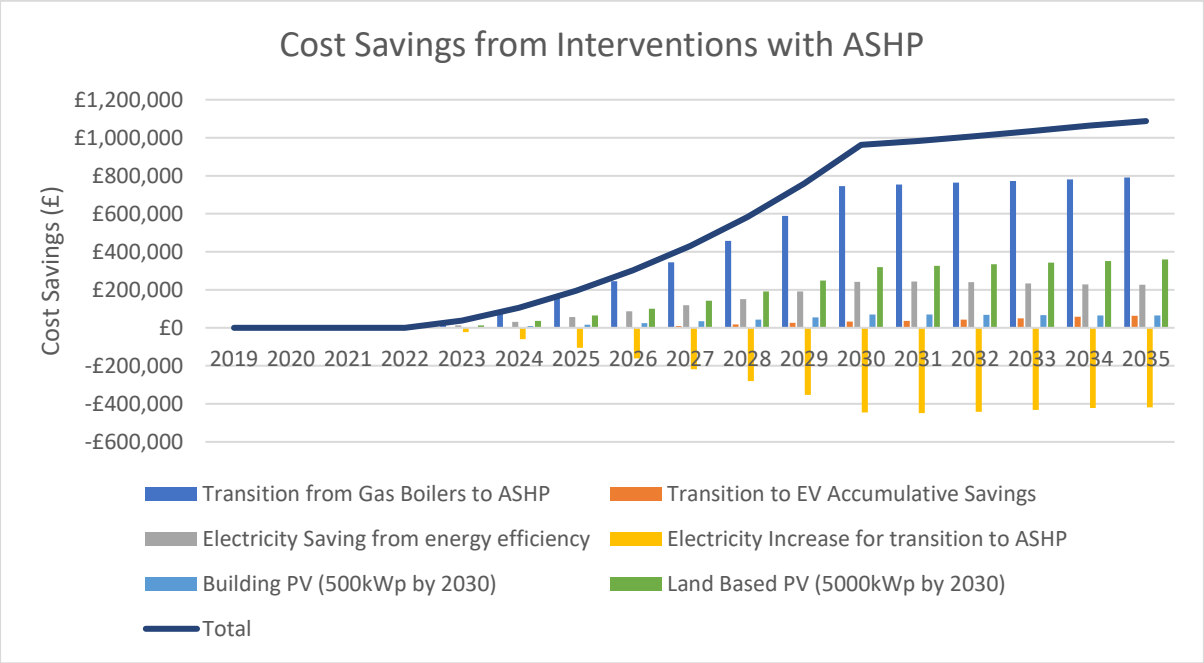
The forecast capital cost to upgrade all vehicles to electric is high, this is largely due to the 43no. refuse vehicles. The cost to purchase an electric refuse vehicle is based on Cambridge City Council who purchased electric refuse vehicles at a cost of £375,000 each. Based on these prices, it would cost over £16million to upgrade the refuse vehicles alone.

This shows that the potential capital to upgrade fossil fuel vehicles to electric vehicles could be significant however, it is acknowledged that the information around the number and type of council owned vehicles is not complete. A separate exercise should take place to review all existing council owned vehicles and assess the benefits of purchasing against lease. The table below shows the forecast cost and benefits of electric vehicles. The total forecast capital cost to achieve net zero is £58.6million and the total annual savings achieved by 2030 would be the equivalent of £962,900 per year.

7.4 Cost Savings with ASHP

The graph below shows the total savings if all initiatives are installed.

Cost savings from interventions between 2019 to 2035

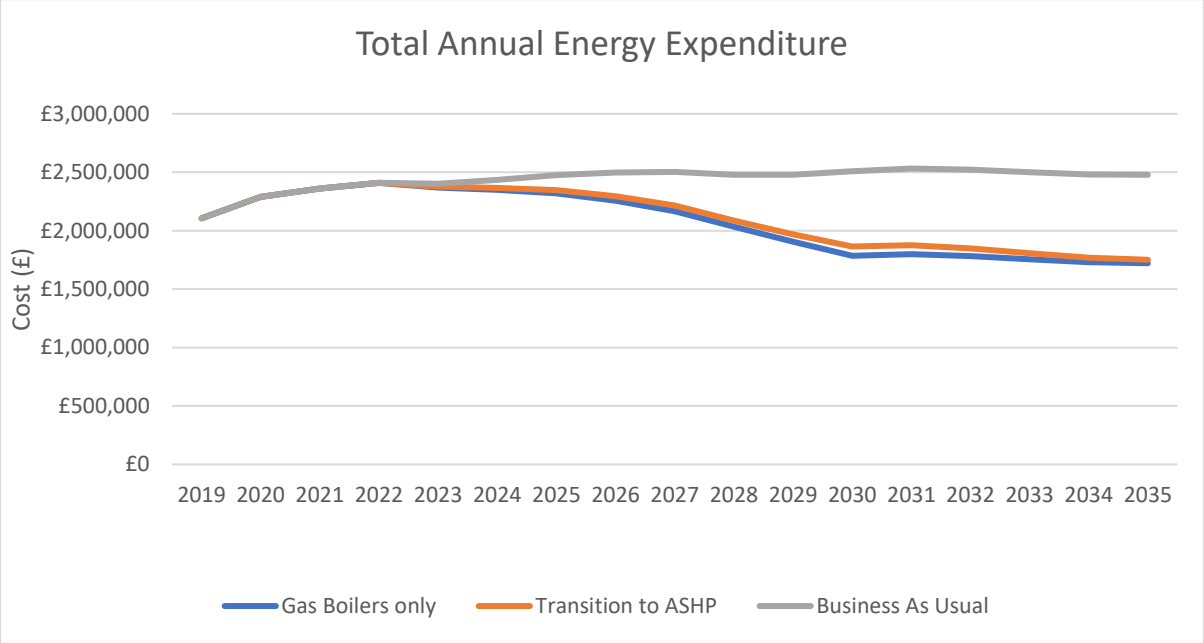


The graph considers savings made through efficiency savings (insulation, controls, etc.) and installing heat pumps. It should be noted that it could be more expensive to run a heat pump compared to a gas boiler if no other interventions are included as the cost of electricity is typically 4 times more expensive than gas up to 2035. However, it is anticipated that the 'spark gap' will close and gas becomes more expensive to incentivise a move from gas to electric.

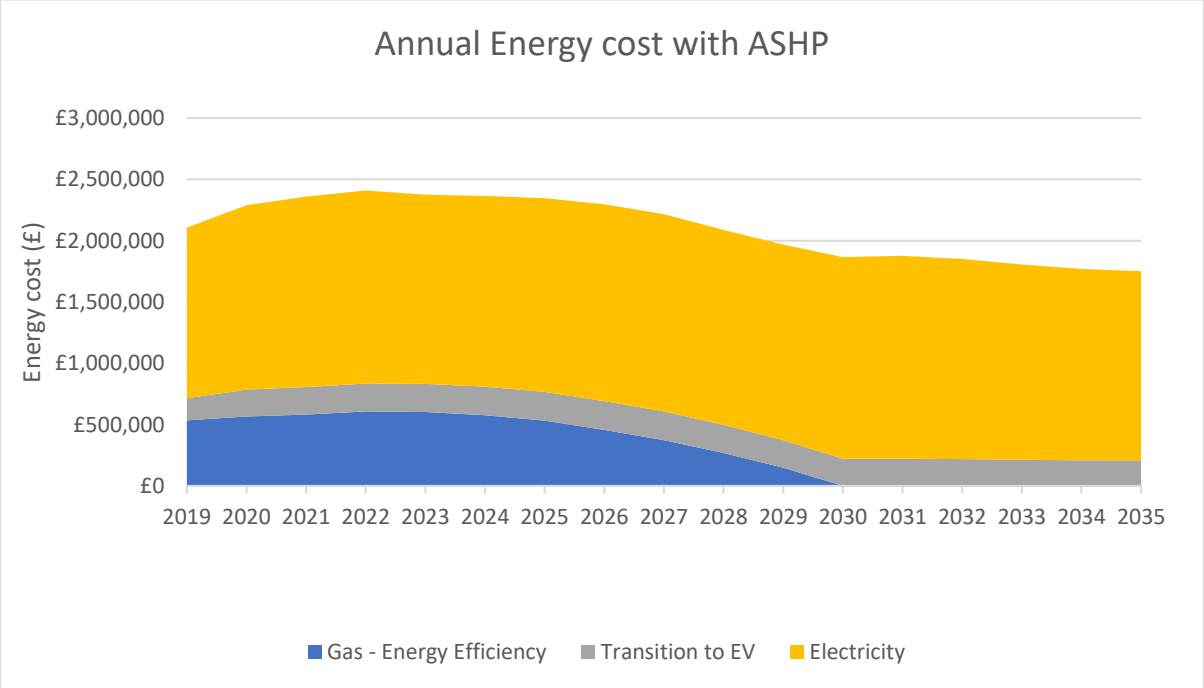
Although the 5MWp solar farm is larger than the 500kWp system on buildings, the financial savings are not proportional as the [current] export rate for a solar farm is much less than the savings achieved by having PV on buildings and reducing the amount of electricity purchased from the grid.

Annual cost comparison between Gas Boilers and ASHPs between 2019 to 2045

The graph below shows the cost on energy bills by comparing the installation of gas boilers with heat pumps as well as making the other capital investments, and with business as usual for scope 1 and 2 emissions.

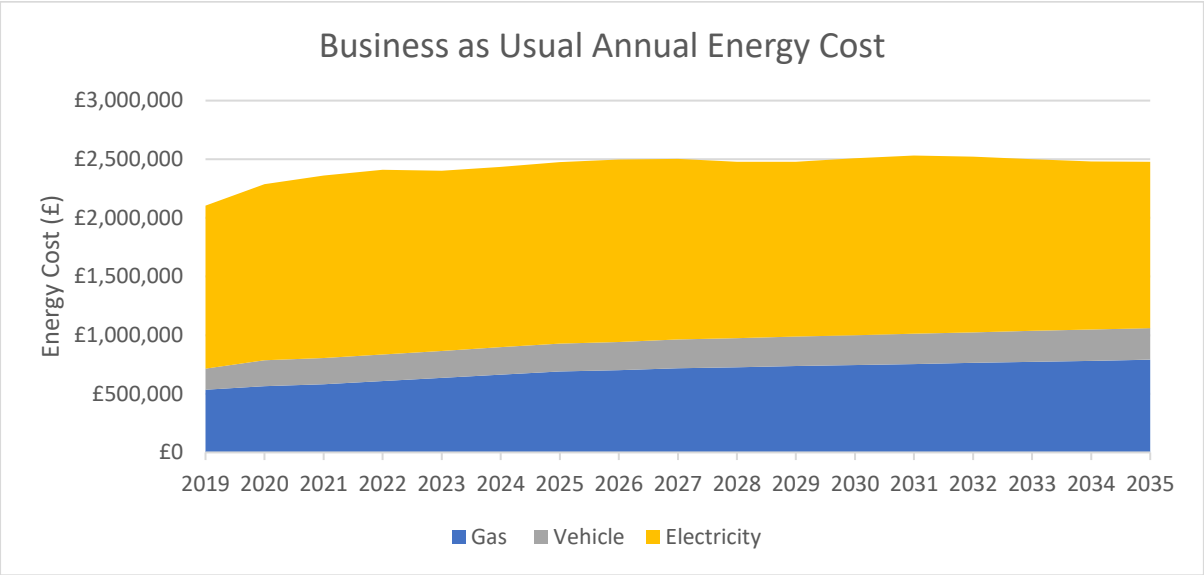


Annual energy expenditure if interventions are delivered between 2019 to 2035



The graph shows that energy costs will decrease from £2.1million in 2019 to £1.9million by 2030 if initiatives are delivered.

Annual energy expenditure for Business as Usual with no interventions between 2019 to 2035



The graph shows that energy costs will increase from £2.1million in 2019 to £2.5million by 2030 if energy consumption remains the same.

The forecast unit rate is taken from the 'Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal'. This was published in October 2021 and markets have changed significantly since so it is likely that future operational costs, and savings, will be higher.

8 Conclusion

It is recommended to report annually on the progress of reducing carbon emissions. Emissions from the Council's own operations should be calculated using the methodology in this report and policies and procedures should be put in place to record emissions data as it is made available rather than trying to retrieve the data in bulk retrospectively.

The Paris Climate Agreement aims to keep global temperature increases well below 2°C and pursuing 1.5°C. This calls for organisations to set a 'carbon budget' which is a term used to indicate the maximum amount of carbon an organisation can produce in a particular period of time to stay within the Paris Agreement. This often requires setting a science-based target and carbon budget.

The minimum reduction required for targets in line with well-below 2°C scenarios is 2.5% in annual linear terms over 15 years. Organisations are strongly encouraged to adopt targets with a 4.2% annual linear reduction to be aligned with limiting warming to 1.5°C. This carbon trajectory should reduce emissions by 90% between 2019 and 2030.

The carbon trajectory in this report is a desktop study performed without any prior knowledge of the building estate and is based on rule of thumb; and engineering and industry experience. A detailed energy audit should be provided for each building to provide

a clear action plan of what interventions can be provided, their capital cost, funding opportunities and the cost/carbon savings.

8.1 Recommendations

Short Term Action – Up to 6 Months
Collect and save emissions data as it is made available for all core Scope 1, 2 and 3 emissions.
Set up processes and procedures to request and record emissions data from suppliers and staff.
Carry out detailed energy audits of all buildings.
Use existing energy data to investigate why the energy usage at the Spectrum has increased.
Create a full inventory of all council owned vehicles.
Medium Term Action – Up to 18 Months
Develop detailed feasibility studies to identify viable energy efficiency projects, localised power generation projects and carbon offsetting schemes.
Carry out detailed engineering design.
Develop a procurement strategy to deliver projects.
Understand which funding options are available and develop a strategy on how to fund specific projects.
Liaise with the Distribution Network Operator (DNO) to understand the grid capacity and how this relates to future electricity demands.
Calculate the carbon footprint of the whole Local Authority area and provide an action plan for the whole district to be zero carbon.
Long Term Action – Within 10 Years
Make a transition away from fossil fuel vehicles.
Increase electric vehicle charging network and sustainable travel infrastructure.
Develop large scale renewable heat and power generation projects.
Roll out energy efficiency and power generation projects to all buildings.
Develop an on-going tree planting and biodiversity improvement schemes.

9. Glossary

Term	Definition
BMS	Building Management System – Automated control for building services.
Carbon dioxide equivalent (CO_2e)	The carbon dioxide equivalent (CO_2e) allows the different greenhouse gases to be compared on a like-for-like basis relative to one unit of CO_2 and includes the six greenhouse gases with the greatest global warming potential (GWP).
Carbon footprint	A carbon footprint measures the total greenhouse gas emissions caused directly and indirectly by a person, organisation, event or product. A carbon footprint is measured in tonnes of carbon dioxide equivalent (tCO_2e).
Council Vehicles	Vehicles that are owned or controlled by the Council. This does not include employee-owned vehicles that are used for business purposes.
Degree Day	A heating degree day (HDD) is a measurement designed to quantify the demand for energy needed to heat a building. It is the number of degrees that a day's average temperature is below a baseline temperature, which is the temperature below which buildings need to be heated.
Electricity	Electricity used at sites owned/controlled by the Council. This is reported as a Scope 2, indirect emission. The conversion factors used are for the electricity supplied by the grid that the Council purchase - they do not include the emissions associated with the transmission and distribution of electricity.
Employee Vehicles	Travel for business purposes in assets not owned or directly operated by the Council. This includes mileage for business purposes in cars owned by employees, public transport, hire cars etc.
[Natural] Gas	Primary fuel sources combusted at a site or in an asset owned or controlled by the Council.
MPAN & MPR	The MPAN (Meter Point Administration Number) and MPRN (Meter Point Reference Number) are unique numbers assigned to the electricity and gas supplies. This information has been provided as a reference and can be used to identify each meter.
Solar PV	Solar Photovoltaic panels to generate renewable electricity from the sun.

Transmission and Distribution	Transmission and distribution (T&D) factors are used to report the Scope 3 emissions associated with grid losses (the energy loss that occurs in getting the electricity from the power plant to the premises).
TRV	A Thermostatic Radiator Valve is a self-regulating valve which is fitted to radiators to control localised temperatures.
Wastewater	Water returned into the sewage system through mains drains.
Water Supply	Water delivered through the mains supply network.

Appendix A – Carbon Footprint Calculations

Appendix B – Asset Reduction Plan

The above appendices are provided separately as spreadsheets.

Appendix C – Data that should be gathered to report on Scope 3 emissions

The reporting of Scope 3 emissions is discretionary.

Item	Category	Details Required
1	Purchased goods and services	This category includes all upstream (i.e. cradle-to-gate) emissions from the production of products purchased or acquired by the Council in the reporting year. Products include both goods (tangible products) and services (intangible products). This category includes emissions from all purchased goods and services not otherwise included in the other categories of upstream scope 3 emissions (i.e. category 2 through category 8 below). Cradle-to-gate emissions include all emissions that occur in the life cycle of purchased products, up to the point of receipt by the Council. Cradle-to-gate emissions may include: • Extraction of raw materials • Agricultural activities • Manufacturing, production, and processing • Generation of electricity consumed by upstream activities • Disposal/treatment of waste generated by upstream activities • Land use and land-use change • Transportation of materials and products between suppliers • Any other activities prior to acquisition by the reporting company Relevant purchases to the Council may include capital goods, such as office supplies, office furniture, computers, telephones, travel services, IT support, outsourced administrative functions,

		consulting services, janitorial, landscaping services, maintenance, repairs and operations. For accurate carbon reporting emissions, the Council should request cradle-to-gate emission factors for materials used by suppliers to produce purchased goods such as Environmental Product Declarations (EPDs). It is likely that many suppliers will not be able to provide all the emission data. If an EPD cannot be provided, supplementary information required includes the volume of product (kg) and the carbon emission factor (kg CO_2e). A policy should be developed so that suppliers in the supply chain are required to provide this data as part of the contract, where the volume of goods is noteworthy.
2	Capital goods	Capital goods are final products that have an extended life and are used by the Council to manufacture a product, provide a service, or sell, store, and deliver merchandise. Capital goods are treated as fixed assets or as plant, property, and equipment (PP&E). Examples of capital goods include equipment, machinery, buildings, facilities, and vehicles. The required information is the same as Category 1 above. A policy should be developed so that suppliers in the supply chain are required to provide this data as part of the contract.
3	Fuel- and energy related activities (not included in Scope 1 or Scope 2)	Transmission and distribution (T&D) losses have been included and calculated from the data provided in Scope 2.
4	Upstream transportation and distribution	Category 4 includes emissions from: • Transportation and distribution of products purchased in the reporting year, between suppliers and its own operations in vehicles not owned or operated by the Council. • Third-party transportation and distribution services purchased by the Council in the reporting year (either directly or through an intermediary), including inbound logistics, outbound logistics (e.g. of sold products), and third-party transportation and distribution between the Council's own facilities.

		The Council requires data on: • Quantities of fuel (e.g., diesel, petrol, jet fuel, biofuels) consumed • Amount spent on fuels • Distance travelled • Vehicle type This may include managed assets - Vehicles that are used by the Council but are not owned by the organisation and generally do not appear on the organisation's balance sheet, for example, maintenance contractor vehicles, outsourced refuse and recycling trucks, road sweepers, grounds maintenance mowers etc. A policy should be developed so that suppliers using their own vehicles are required to provide this data as part of the contract.
5	Waste generated in operations	This includes emissions from third-party disposal and treatment of waste generated in the Councils owned or controlled operations in the reporting year. This category includes emissions from disposal of both solid waste and wastewater. The Council should request volume and emissions data from the waste treatment company applicable to **its own waste stream**. If this cannot be provided, the emissions can be calculated by requesting the volume of waste, type and disposal method: Example of data required: Total weight (kg) of waste type and disposal method e.g. • 5,000kg municipal waste to landfill • 500kg organic garden waste to composting • 1,000kg metal recycled • 1,000kg plastic recycled • 1,000kg paper recycled Data is required for the volume of supply and wastewater in cubic metres (m^3) from water bills. Local authorities have an important role in waste prevention and sustainable waste management through awareness-raising campaigns, providing separate collection for recycling and food waste, and implementing waste-to-energy schemes. It is

		therefore voluntary on whether the Council choose to include the emissions from waste associated with the whole borough, or just the Council's own operation.
6	Business travel	Travel for assets not owned or directly operated by the Council. This includes mileage for business purposes in cars owned by employees, public transport, hire cars etc. Require details for: <u>Vehicle</u> Fuel type, size of vehicle and distance for: • Car • Motorbike • Taxis • Bus • Rail <u>Flights</u> • Airport travelled to/from • Number of passengers • Class type • Distance <u>Ferry</u> • Foot or car passenger • Distance
7	Employee commuting	This category includes emissions from the transportation of employees between their homes and their worksites. Emissions from employee commuting may arise from: • Car • Bus • Rail • Other modes of transportation Staff would be required to provide method of transport and distance travelled. It may be difficult and time consuming to collect accurate data.
8	Upstream leased assets	This category is applicable from the operation of assets that are leased by the Council. If the Council procures the energy then this should be considered as Scope 1 and 2.

		If the landlord is responsible for the Scope 1 and 2 emissions, the Council should include the reporting under Scope 3. An example may include an office that the Council lease from a private landlord. All energy bills may be included as part of the lease and the energy contract is under the name of the landlord. The Council should therefore request the energy data from the landlord and include this under Scope 3. Data required include the Scope 1 and 2 data from the leased asset.
9	Downstream transportation and distribution	This category includes emissions that occur in the reporting year from transportation and distribution of sold products in vehicles and facilities not owned or controlled by the Council in the reporting year. It is assumed that this category is not applicable to the Council as it does not manufacture and sell products.
10	Processing of sold products	It is assumed that this category is not applicable to the Council as it does not manufacture and sell products.
11	Use of sold products	It is assumed that this category is not applicable to the Council as it does not manufacture and sell products.
12	End-of-life treatment of sold products	It is assumed that this category is not applicable to the Council as it does not manufacture and sell products.
13	Downstream leased assets	This category is applicable where the Council is the landlord to a lessee. If the Council procures the energy on behalf of a lessee then this should be considered as Scope 1 and 2. An example of this is where the Council may lease a premises to a lessee and include all energy costs as part of the lease. The energy contract is under the name of the Council and is therefore reported under Scope 1 and 2. If the lessee is responsible for the Scope 1 and 2 emissions, the council should include the reporting under Scope 3. An example of this is a shop that the Council own and the occupant pays for the energy bills and the contract is under their name. The Council should request the energy data from the shop occupier and report this under Scope 3.

		Data required include the Scope 1 and 2 data from the leased asset.
14	Franchises	It is assumed that this category is not applicable to the Council as it does not operate any franchises.
15	Investments	This category includes scope 3 emissions associated with the Council's investments in the reporting year, not already included in scope 1 or scope 2. This category is applicable to investors (i.e. organisations that make an investment with the objective of making a profit) and organisations that provide financial services. This category also applies to investors that are not profit driven (e.g. multilateral development banks). Investments are categorised as a downstream scope 3 category because providing capital or financing is a service provided by the organisation. Category 15 is designed primarily for private financial institutions (e.g., commercial banks), but is also relevant to public financial institutions (e.g., multilateral development banks, export credit agencies) and other entities with investments not included in scope 1 and scope 2. The Councils scope 3 emissions from investments are the scope 1 and scope 2 emissions of investees. For purposes of greenhouse gas accounting, this standard divides financial investments into four types: • Equity investments • Debt investments • Project finance • Managed investments and client services An example of the information required is the Scope 1 and 2 emissions from the bank where an investment is in place. This is based on the Council's proportional share of investment in the investee. If the Council has £1million invested in the bank and the banks total investments amount to £100million, the Council should report on 1% of the banks Scope 1 and 2 emissions. It is assumed that this information will be difficult to collate from third parties and that the total emissions will be proportionally small compared to other emission sources and these emissions could be excluded from the reporting.

GUILDFORD BOROUGH

Equality Impact Assessment – Guidance

Contents

Appendices

Assessing the impact of our activities* on equality

*(*Activity can mean strategy, practice, function, policy, procedure, decision-making, project or service)*

Background

The Equality Act 2010 places particular requirements on public bodies, including local authorities. This is known as the Public Sector Equality Duty and it is made up of the general duty supported by specific duties (see appendix 1).

Assessing the impact of our activities on equality is an important part of complying with the general duty and helps us to:

- understand how our activities affect people with protected characteristics** and consider whether they will be effective for different people. For example, does a particular policy meet the needs of people with protected characteristics? Does it minimise disadvantages faced by them?
- identify at the earliest opportunity any discrimination (direct, indirect, intentional or unintentional) against our service users or employees and identify practical steps to address these before a proposed activity is adopted
- integrate equality matters into mainstream policy development so that it becomes part and parcel of our decision-making
- advance equality.

*(**The protected characteristics are sex (gender), race, age, disability, gender reassignment, marriage or civil partnership, pregnancy and maternity, religion and belief, and sexual orientation.)*

Equality is about treating people fairly, which could mean treating some people more favourably than others in order to take account of their differing needs.

The weight given to equality issues should be proportionate to the significance of the activity against the aims of the duty (i.e. fostering good relations, advancing equality, eliminating discrimination, harassment. See appendix 1). Generally, greater weight should be given where there is a potential adverse impact on a large number of people who share a protected characteristic or where the impact is serious but may affect less people.

If a decision-maker gives disproportionate weight to factors other than equality, this may be challenged particularly if the decision is based on irrelevant considerations or facts.

Which activities need to be assessed?

Examples include policy decisions, budgetary decisions, changes to service provision and procurement of goods or services.

New or amended policies, processes, working practices, new systems (including those that affect the public) will require assessment.

Restructures that affect a very small number of employees are unlikely to require a full assessment but will require completion of section 1 of the form (appendix 2) including an assessment of whether the activity is relevant to equality. Employment policies and procedures such as the Redundancy Policy and Procedure will have previously been equality impact assessed so the process itself will not require further assessment.

When should I conduct an assessment?

The assessment should be done at the outset during the planning stage and not as an afterthought. Leaving it to the final stages will lead to several problems:

- You will be unlikely to be able to demonstrate that you have had due regard to the aims of the general duty when decisions were made. This would leave you open to legal challenge
- The activity may still lead to potentially discriminatory activity or adverse impacts on particular groups of people
- An opportunity to advance equality may be missed, which may mean people with some protected characteristics do not benefit from the activity to the same extent that others do
- The activity is not likely to be effective in achieving its aims if it hasn't taken into account the impact it will have.

How should I assess the impact on equality and use the findings in my activity and decision-making?

The general equality duty does not specify how impact should be assessed and it is not a legal requirement to complete an 'equality impact assessment' (EIA) form. However, the EIA form provides a structured, consistent, proportionate approach, and provides evidence of your assessment.

If there is evidence that you assessed the impact on equality early on in the planning stage of the proposal and you have factored it in as early as you would for other considerations such as risk, budget, health and safety, then an EIA form does not need to be completed (see example B, appendix 2).

The EIA form covers the following areas:

1. Determining the relevance to equality

Some activities are particularly important for advancing equality or fostering good relations for example, grant-making programmes, changes to service delivery (e.g. withdrawal or reduction of services), and recruitment or pay policies.

Some activities are not particularly relevant to equality, for example, a policy on when to check the temperature of fridges in a kitchen. However, licensing arrangements for clubs may appear to affect everyone in the same way but in practice, they may be highly relevant to the risk of violence towards women or young people. They may also have an impact on the good relations aim of the duty, for example in relation to their effect on lesbian and gay people or certain ethnic minorities.

The EIA form asks the following questions, which can help you decide whether the activity you are assessing is relevant to equality:

- What are the aims, objectives and purpose of the activity? (Does it relate to any equality objectives that have been set by the organisation e.g. in the equality scheme action plan?)
- Is it a major activity, significantly affecting how other services or functions are delivered?
- Who will benefit from this activity and how?
- Does it relate to a function that has been identified as being important to people with particular protected characteristics?
- Does it affect service users, employees or the wider community? (The relevance of an activity to equality depends not just on the number of those affected but on the significance of the impact on them. Does it relate to an area with known inequalities?)

If, based on this initial assessment, you decide that the activity is not relevant to equality, you should be confident of your reasons for this. The fact that ‘no information is available’ is not adequate. You must record your reasons why an activity is not relevant to demonstrate compliance with the general equality duty.

If there is relevance to equality, you should continue to the next stage, which is to gather basic information to help you undertake the rest of your assessment.

2. Gather equality information

Having due regard to the aims of the general equality duty is about using good equality information and analysis (see example A, appendix 2). An EIA should take into consideration factors such as demographic data and other statistics, including census findings, research findings, equality monitoring data, one-off data-gathering exercises. You need to understand the equality profile of your customers (or employees) to understand how your activity may affect them.

It is important to have appropriate and reliable information about the different groups sharing protected characteristics that are likely to be affected. Understanding the impact on different groups is a key step in identifying whether an activity might unlawfully discriminate.

The information that will be most useful will depend on the nature of the activity. In order to identify the impact on people with different protected characteristics, it may be useful to look at:

- Comparisons with similar policies/activities in other services or authorities to help you identify relevant equality issues
- Analysis of enquiries or complaints from the public to help you understand the needs or experiences of different groups of people
- Recommendations from inspections or audits to help you identify any concerns about equality matters from regulators
- Information about the local community, including census findings to help you establish the numbers of people with different protected characteristics
- Recent research from national, regional and local sources that includes information on relevant equality issues
- Results of engagement activities or surveys to help you understand the needs or experiences of people with different protected characteristics
- Information from the public, community groups and voluntary organisations can help you understand the needs or experiences of people with different protected characteristics.

If you do not have equality information about people with particular protected characteristics, consider whether you need to fill information gaps. This could mean undertaking short surveys, or some engagement work. If it is not possible to collect this in time to inform your assessment, consider how you can increase your understanding in the short term for example, meeting with stakeholders. The information you gain from engagement with stakeholders will help you to understand the potential impacts of your activity on different groups.

Example

In developing a new housing strategy, a local authority identifies a number of different elements as being relevant to equality. It decides to focus on those areas when assessing the potential impact on equality. It looks at:

- take-up of housing services
- satisfaction rates and number and type of complaints
- supported housing provision
- homelessness rates and causes
- choice-based lettings
- availability and management of adapted housing
- Gypsy and Irish Traveller site provision
- staff training.

3. Analyse your equality information

Analysing your equality data will enable you to make a judgement about the likely impact of the activity on equality. For example, when reviewing a recruitment policy for disability equality, it would be useful to establish how many disabled people have applied for posts, how many were rejected, how many were appointed, and at what pay band. Other information may also be useful such as how long people stay working for the Council and why they leave.

Consider the following:

- Does service take-up differ between people with different protected characteristics?
- What are the key findings of any engagement you have undertaken?
- If there is a greater impact on one group, is that consistent with the aims of the activity?
- If the activity has negative impacts on people sharing particular characteristics, what steps can be taken to mitigate these effects?
- Is any part of the activity unlawful under the Equality Act 2010?
- Will the activity deliver practical benefits for certain groups?
- Does the activity miss opportunities to advance equality of opportunity and foster good relations?
- Do other policies need to change to enable this activity to be effective?

Example

A public authority is developing its policy on staff leadership skills. The purpose of developing such a policy is to ensure that all staff gain appropriate training. It assesses the training needs of the staff, and analyses the available information. The assessment shows that there are disproportionately low numbers of women at senior management level and that there is no targeted training available for female staff to gain the appropriate skills. Based on this, the public authority reviews its initial policy aims and decides to implement targeted management training for women staff (which is lawful under the positive action provisions of the Equality Act 2010.)

If you reach a general conclusion that an activity will universally benefit all service users without any evidence to support that conclusion, if may be difficult for you to demonstrate compliance with the general equality duty.

Understanding the impact on equality will be easier for existing activities, because you can base your evaluation on evidence of actual impact, and make a reasonable and informed judgement about whether the activity is having positive or negative consequences for particular protected characteristics. This will enable you to decide whether you need to amend your proposals or introduce measures to mitigate adverse impacts on certain groups.

At this point, you should be able to answer the following questions on the EIA form:

- Is the proposed activity accessible for all the protected groups? Is it likely to affect people with particular protected characteristics differently? (Consider in what ways the activity might create difficulties or barriers to parts of the workforce, community or protected groups. How might one or more groups be excluded because of the activity?)
- Is it likely the proposed activity will have a negative impact on one or more protected groups?
- What action can be taken to address any negative impact? What measures could be included to promote a positive impact? (Consider whether it is possible to amend or change the activity due to the likely adverse impact whilst still delivering the objective. Is it possible to consider a different activity which still achieves the aims but avoids an adverse impact? Is an action plan required to reduce any actual or potential adverse impact?).
- What are the main sources of evidence that have been used to identify the likely impacts on the different protected groups? (E.g. relevant quantitative and qualitative information from sources such as previous EIA's, engagement with staff and service users, equality monitoring, complaints, comments, customer equality profiles, feedback, issues raised at previous consultations and known inequalities).
- Has any consultation been carried out? (e.g. with employees, service users or the wider community)

- Is further consultation required as a result of any negative impact identified? If so, what groups do you intend to engage with and how?
- Conclusion of equality impact assessment - a summary of findings.

4. Make your decision

Your decision may lead to your activities benefitting certain groups of people rather than others. Strong evidence and transparency about how you reached your decision should help you to explain and justify your decisions internally and externally. Having your decisions and rationale easily accessible to members of the public should also help to counter any misconceptions.

5. Implement your decision

Your assessment should lead you to one of the following courses of action:

- **Continue with the activity** – Your assessment demonstrates that the activity shows no potential for discrimination and that you have taken a proportionate approach to advancing equality of opportunity and fostering good relations. You should document the reasons for this conclusion and the information you used to make this decision.
- **Justify and continue with the activity** – Ultimately, there may be other factors (such as other policy aims or financial constraints) which make it reasonable for you to decide to adopt the activity despite its adverse equality impact. You can choose this option where your activity does not unlawfully discriminate, or where any potential discrimination is indirect and can be objectively justified. You need to take into account the possibility that your decision could be challenged, and consider whether you would be able to satisfy a court that you had due regard to the aims of the general equality duty when you reached your decision. It is particularly important that you document the reasons for your decision and the evidence that supported these reasons.
- **Change the activity** – This involves making changes to the activity to ensure it does not adversely affect certain groups of people, or miss opportunities to affect them positively. This can involve taking steps to mitigate adverse impacts, or to bolster or tailor positive ones**.** Document the reasons for the steps you are adopting and the information you used to make this decision.
- **Stop the activity** – If analysis of the activity shows a high probability of unavoidable discrimination which (where the law allows it) cannot be objectively justified, consider developing a new approach in order to avoid legal challenges under the Equality Act. Document the reasons for this decision and the information you used to make it.

When you have made your decisions, a senior manager or director must approve them, taking full account of the equality considerations.

6. Publish your findings and decisions

You are required to publish equality information to demonstrate compliance with the general equality duty. Documented evidence about your impact assessment is likely to be a key component of this information. The Equality and Human Rights Commission recommend that you publish some records of your equality considerations alongside the relevant policy ideally in a structured way that includes the findings of your assessment and the decisions you made. It is useful to do this before a policy is finalised so that members of the public can engage with you on your findings. Publication should be proportionate. For example, information about the equality implications of Council wide policies on people with different protected characteristics could be published at various stages of policy development. However, a service or team proposing changes to their uniform policy may find it sufficient simply to include details of the findings of its assessment along with any other information sent out to employees and staff representatives.

7. Monitor actual impact and review policies

Assessing the impact on equality is an ongoing process that does not end once an activity has been agreed or implemented. Your assessment will have helped you to anticipate and address the activities potential impact on different groups. However, the actual impact of the activity will only be known once it has been

introduced. The experience gained through implementation can be used to consider any possible adjustments to the activity.

You may find that you want to consider revising the activity if unexpected negative impacts occur. Other factors that could suggest the need to make adjustments might include a change in the area demographics, the availability of alternative services or the emergence of new ways to reduce adverse impact. You may find it helpful to set out when the activity will be reviewed. Issues that might be considered include:

- How and when you will measure the impact of the activity.
- When the activity will be reviewed and what could trigger an early revision.
- Who will be responsible for monitoring and review.
- What type of information is needed for monitoring and when it will be analysed.
- How to engage stakeholders in implementation, monitoring and review.

Appendix 1

The Public Sector Equality Duty

The Equality Act 2010 places particular requirements on public bodies, including local authorities. This is known as the Public Sector Equality Duty and it is made up of the general duty supported by specific duties.

The general duty sets out three main aims. As a public body, Guildford Borough Council must have due regard to the need to:

- eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act
- advance equality of opportunity between people who share a protected characteristic and those who do not
- foster good relations between people who share a protected characteristic and those who do not.

Having 'due regard' for advancing equality involves:

- removing or minimising disadvantages suffered by people due to their protected characteristics
- taking steps to meet the needs of people from protected groups where these are different from the needs of other people
- encouraging people from protected groups to participate in public life or in other activities where their participation is disproportionately low.

The practical effect is that public bodies have to consider how their policies, programmes and service delivery will affect people with the protected characteristics. For example:

- 'meeting different needs' could involve taking steps to take account of disabled people's disabilities
- 'fostering good relations' could involve tackling prejudice and promoting understanding between people from different groups.

The specific duties are:

Public authorities should publish equality information annually to demonstrate compliance with the general equality duty. This includes information relating to people with protected characteristics who are:

- its employees, or
- affected by its policies and practices e.g. service users.

Public authorities should prepare and publish at least one equality objective it thinks it should achieve in order to meet the general duty. This must be done at least every four years and objectives must be specific and measurable.

Appendix 2

Equality Impact Assessment

The purpose of an assessment is to understand the impact of the Council's activities* on people from protected groups and to assess whether unlawful discrimination may occur. It also helps to identify key equality issues and highlight opportunities to promote equality across the Council and the community. The assessment should be carried out during the initial stages of the planning process so that any findings can be incorporated into the final proposals and, where appropriate, have a bearing on the outcome.
*(*Activity can mean strategy, practice, function, policy, procedure, decision, project or service)*

Name of person completing the assessment	Nathaniel Prodger	Date of assessment	12th January 2023

Name of the proposed activity being assessed	Climate Change Action Plan	Is this a new or existing activity?	New

Who will implement the activity and who will be responsible for it?	Multiple departments across GBC will be responsible for dedicated actions to reduce carbon emissions from Council activites.

1. Determining the relevance to equality

What are the aims, objectives and purpose of the activity?	To produce a pathway to achieving net zero carbon emissions across the activites of GBC. To reduce carbon emissions to net zero by 2030. To provide a leadership role in reducing carbon emissions within our communities to net zero by 2050.

Is this a major activity that significantly affects how services or functions are delivered?	Yes	Who will benefit from this activity and how?	Beneficiaries depend on the type of action developed from the action plan. These actions may work to improve community health, provide financial benefits through reduced energy costs, improved resilience across the borough

Does it relate to a function that has been identified as being important to people with particular protected characteristics?	No	Who are the stakeholders? Does the activity affect employees, service users or the wider community?	The action plan affects all stakeholders in the Guildford Borough. GBC employees, service users and the wider community

Based on the above information, is the activity relevant to equality?

Yes – continue to section 2	No Each of the actions contained within the action plan may affect equality, however this will need to be assessed per action which is currently not practical without further input from all departments within GBC. The

No – please record your reasons why the activity is not relevant to equality	action plan presents a pathway to achieve net zero carbon emissions both within the Council and within communities across the borough, it does not presume to develop the programmes required to complete these actions. Each action will need to be subject to development in which all factors, including equality will be assessed.

2. Is the proposed activity accessible for all the protected groups listed below?
(Consider in what ways the activity might create difficulties or barriers to parts of the workforce, community or protected groups. How might one or more groups be excluded because of the activity?)

Protected groups	**Yes**	**No**	**Evidence**
Disability			
Race			
Gender			
Sexual orientation			
Age			
Religion or belief			
Transgender or transsexual			
Marriage and civil partnership			
Pregnancy or maternity			

3. Is it likely the proposed activity will have a negative impact on one or more protected groups?

Protected groups	**Yes**	**No**	**Evidence**
Disability			
Race			
Gender			
Sexual orientation			
Age			
Religion or belief			
Transgender or transsexual			

Marriage and civil partnership			
Pregnancy or maternity			

4. What action can be taken to address any negative impact? What measures could be included to promote a positive impact? (*Consider whether it is possible to amend or change the activity due to the likely adverse impact whilst still delivering the objective. Is it possible to consider a different activity which still achieves the aims but avoids an adverse impact? Is an action plan required to reduce any actual or potential adverse impact?)*

5. What are the main sources of evidence that have been used to identify the likely impacts on the different protected groups? (*Use relevant quantitative and qualitative information that is available from sources such as previous EIA's, engagement with staff and service users, equality monitoring, complaints, comments, customer equality profiles, feedback, issues raised at previous consultations and known inequalities).*

6. Has any consultation been carried out (e.g. with employees, service users or the wider community)? Please provide details

7. Is further consultation required as a result of any negative impact identified? If so, what groups do you intend to engage with and how?

8. Conclusion of Equality Impact Assessment - please summarise your findings

Name of person completing assessment: **Date:**

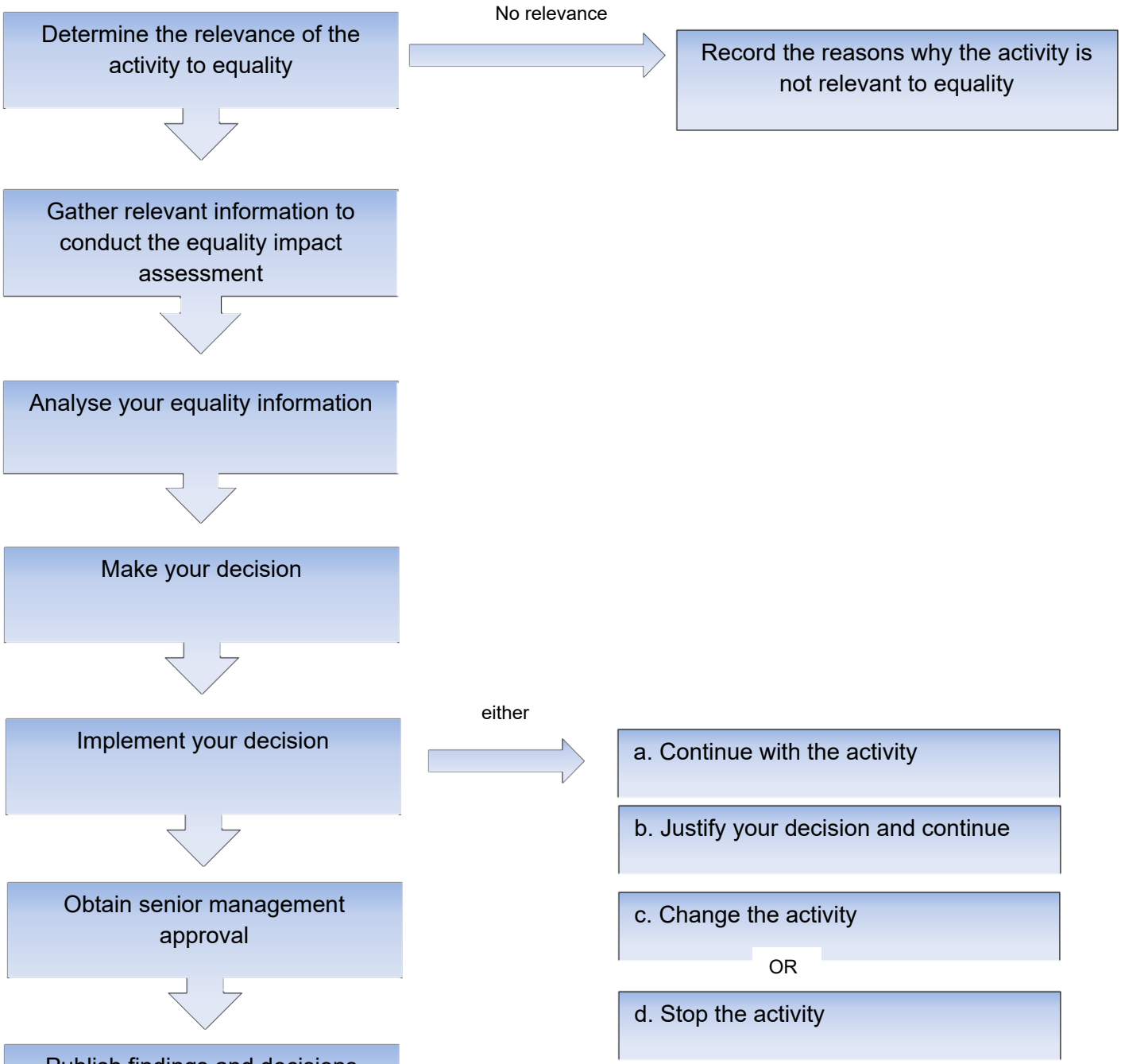
Job title:

Signature:

Senior manager name: **Date:**

Signature: **Appendix 3**

Assessing the impact of your activity* on equality



* Activity can mean strategy, practice, function, policy, procedure, decision making, project or service